

SUNZIA SOUTHWEST TRANSMISSION PROJECT

UPDATE TO

ACC BTA WORKSHOP



MARK ETHERTON

JUNE 3, 2010

STATUS AND CHANGES FROM 2008

- ★ Finalize Development Agreements and now includes six Project Participants
- ★ Expanded Project Study Area and Interconnection locations
- ★ Project Facilities to be permitted for up to 2- 500kV AC lines, option to have one operated as a HVDC line
- ★ Project Permitting Status and Timelines
- ★ WECC Three-Phase Rating Process Status
- ★ Transmission Line Tower Configurations

PROJECT PARTICIPANTS



Energy Capital Partners
(equity investment fund manager)



Salt River Project
(irrigation district and Arizona utility)



Shell WindEnergy
(a Royal Dutch Shell company)



SouthWestern Power Group
(G&T development firm)

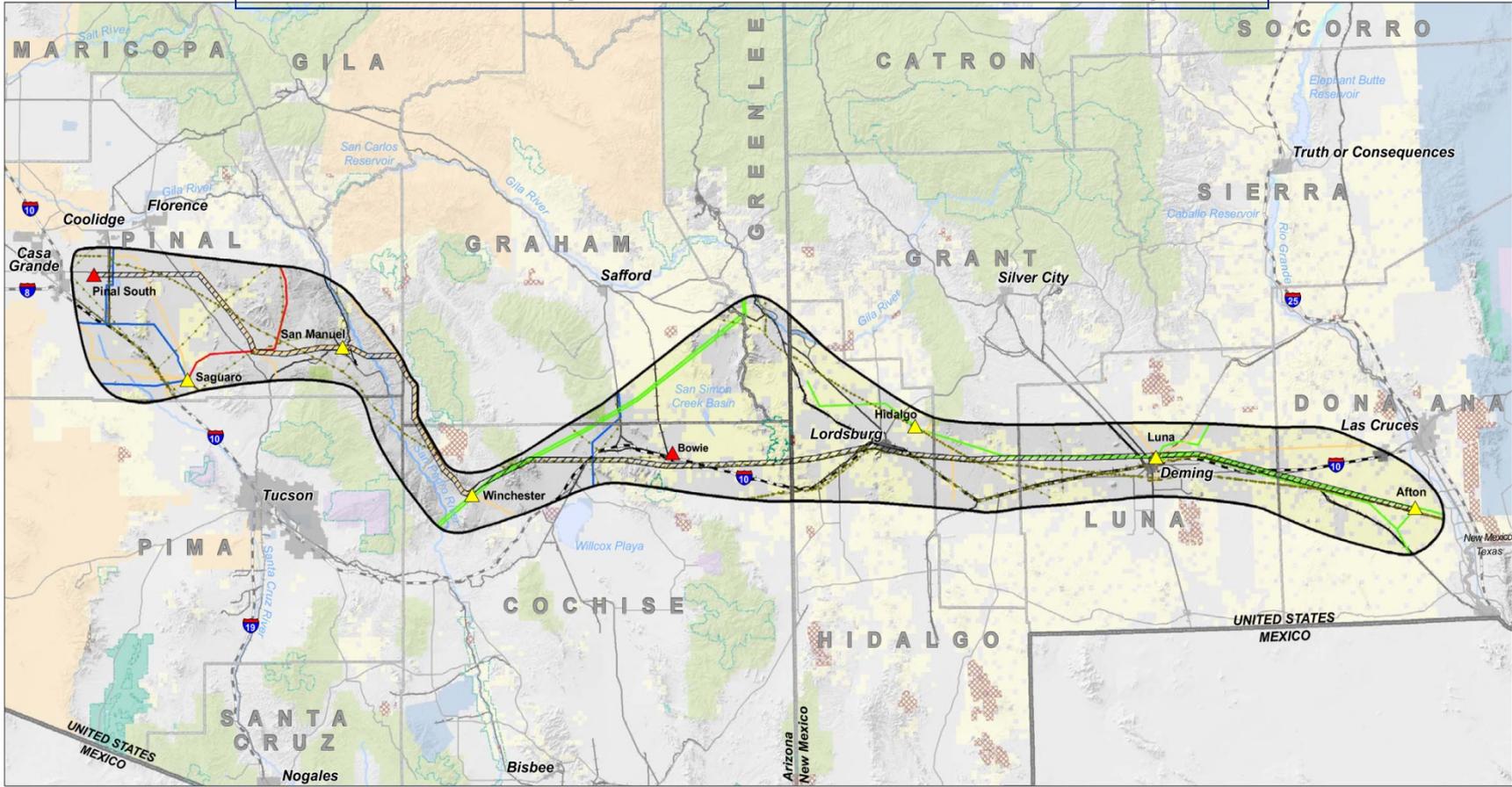


Tri-State G&T
(multi-state G&T association)



Tucson Electric Power
(Arizona utility)

Presented at May 22 & 23 , 2008 BTA Workshop

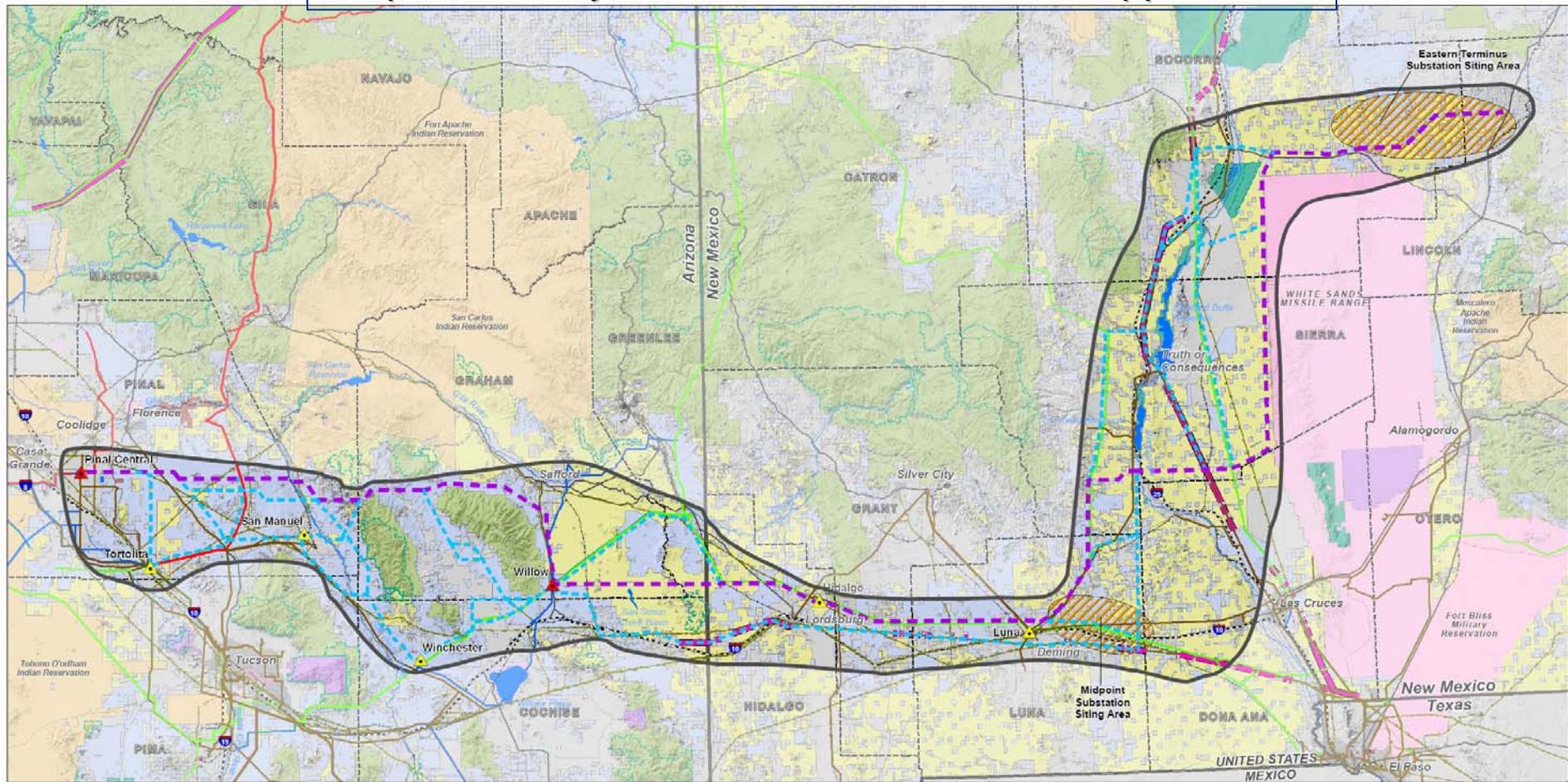


<p>LEGEND</p> <p>Project Features</p> <ul style="list-style-type: none"> Study Area Proposed Transmission Line Corridor ACEC Wilderness Area 				<p>Land Ownership</p> <ul style="list-style-type: none"> Bureau of Land Management Indian Reservation/Bureau of Indian Affairs U.S. Forest Service National Park Service Department of Defense U.S. Fish & Wildlife Service State/Private/Other 				<p>Utilities</p> <ul style="list-style-type: none"> Substation (Existing) Substation (Proposed) 500 kV Transmission Line 345 kV Transmission Line 230 kV Transmission Line 138 kV Transmission Line 115 kV Transmission Line Pipeline (6" Diameter and Above) 				<p>Reference Features</p> <ul style="list-style-type: none"> International Boundary State Boundary County Boundary Interstate State Highway/Major Road Railroad River/Stream Lake/Reservoir Urban Area 			
<p>Confidential - Not for Distribution</p> <p><small>Note - Substation and transmission line locations are schematic and do not necessarily represent precise locations.</small></p>								<p style="text-align: center;">SunZia Southwest Transmission Project</p> <p style="text-align: center;">Preliminary Plan of Development</p> <p style="text-align: center;">Figure 1</p> <p style="text-align: center;">September 2007</p> <p>Sources: StreetMapUSA, 2007; BLM, 2004; USGS, 2005; EPG, Inc., 2007</p>							



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Proposed Study Corridor with BLM SF-299 Application



LEGEND

Proposed SunZia Project Features

- Proposed Substation Interconnections
- Proposed Route
- Preliminary Alternative Route
- Substation Siting Area
- Study Area

Land Ownership

- Bureau of Land Management
- Indian Reservation
- U.S. Forest Service
- National Park Service
- Department of Defense
- U.S. Fish & Wildlife Service
- State Trust Land
- Private/Other

Utilities

- Existing Substation
- 500 kV Transmission Line
- 345 kV Transmission Line
- 230 kV Transmission Line
- 115/138 kV Transmission Line
- Pipeline (6" Diameter and Above)

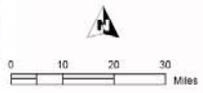
Reference Features

- State Highway/Major Road
- River/Stream
- Railroad
- County Boundary
- Interstate
- State Boundary
- DOE Proposed Corridor
- Wilderness/Conservation Area
- Lake/Reservoir
- Urban Area



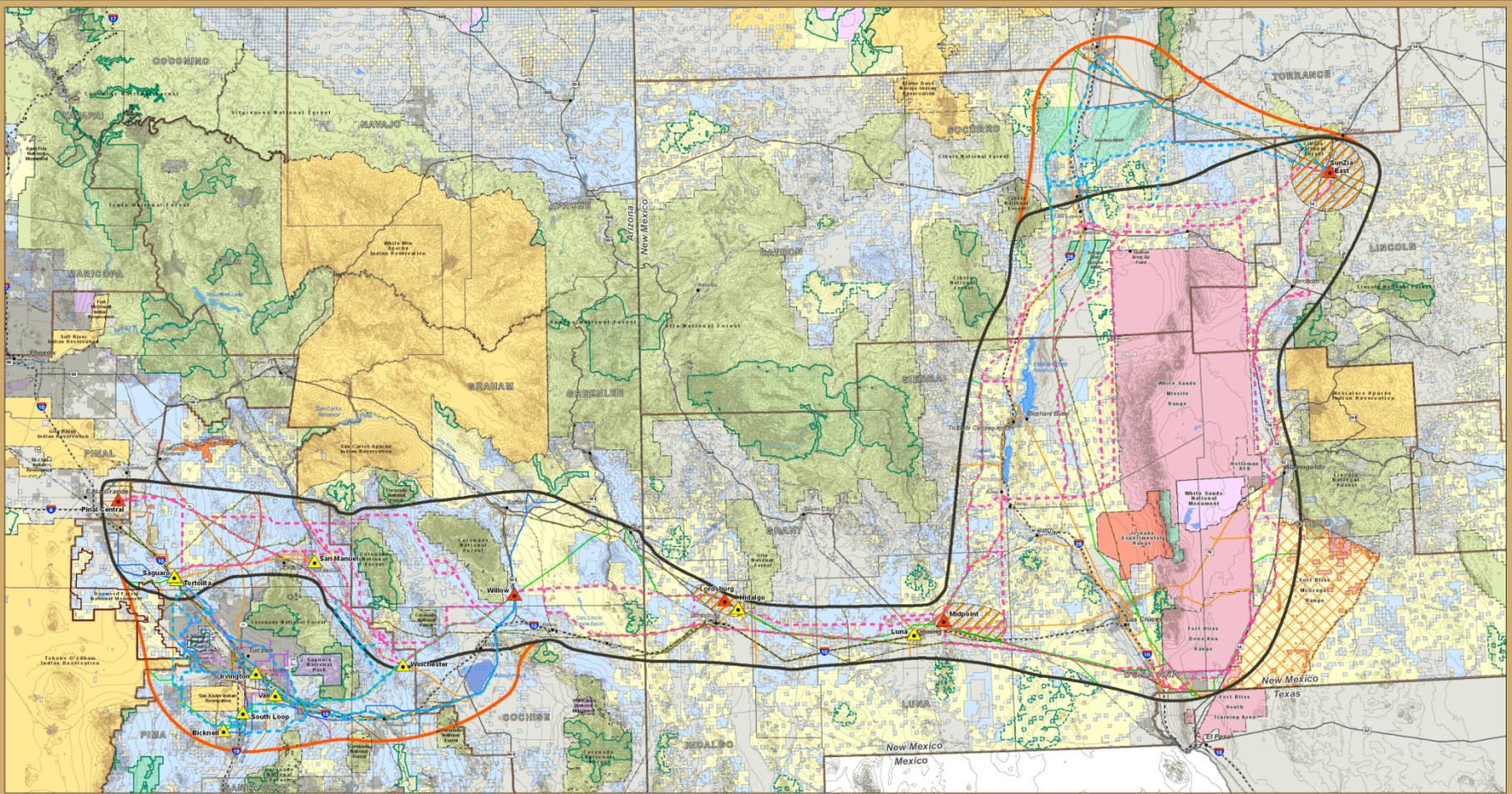
SunZia Southwest Transmission Project Preliminary Study Corridor

September 8, 2008



Sources: StreetMapUSA 2007; BLM 2008; USGS; EPG, Inc. 2009





SunZia Southwest Transmission Project
Land Ownership and Jurisdiction



LEGEND

BLM Field Office Boundary

Land Ownership

- Bureau of Land Management
- U.S. Dept. of Defense
- McGregor Range Withdrawal
- National Park Service
- U.S. Forest Service
- U.S. Fish and Wildlife Service
- U.S. Bureau of Reclamation
- Federal/Other
- Indian Reservation
- State Trust Land
- Local or State Parks
- Private/Other

Base Features

Project Features

- Proposed and Alternative Routes
- Alternative Route Subject to Feasibility Study
- Study Area - October 2009
- Study Area - March 2010
- Substation Siting Area

Utilities

- Proposed Substation
- Existing Substation
- Pipeline (Diameter 6"+)

Reference Features

- City
- River/Stream
- Lake/Reservoir
- Urban Area
- State Highway
- US Highway
- Interstate
- Railroad
- County Boundary
- State Boundary
- Wilderness Area
- Wilderness Study Area (WSA)
- Jurisdictional Boundary
- National Monument - BLM

Sources:

- AZ BLM 2009
- AZ State Land Department and ALRIS 2008
- ESRI StreetMap 2009, Arcbase RMP 1989
- NM BLM 2009, Socorro PRMP 2009
- Tri-County RMP 2009
- POWERmap, powermap.platts.com
- ©2009 Platts, A Division of The McGraw-Hill Companies
- USGS, EPG, Inc. 2010



April 6, 2010

Contour Interval 200 feet

PRELIMINARY - NOT FOR DISTRIBUTION

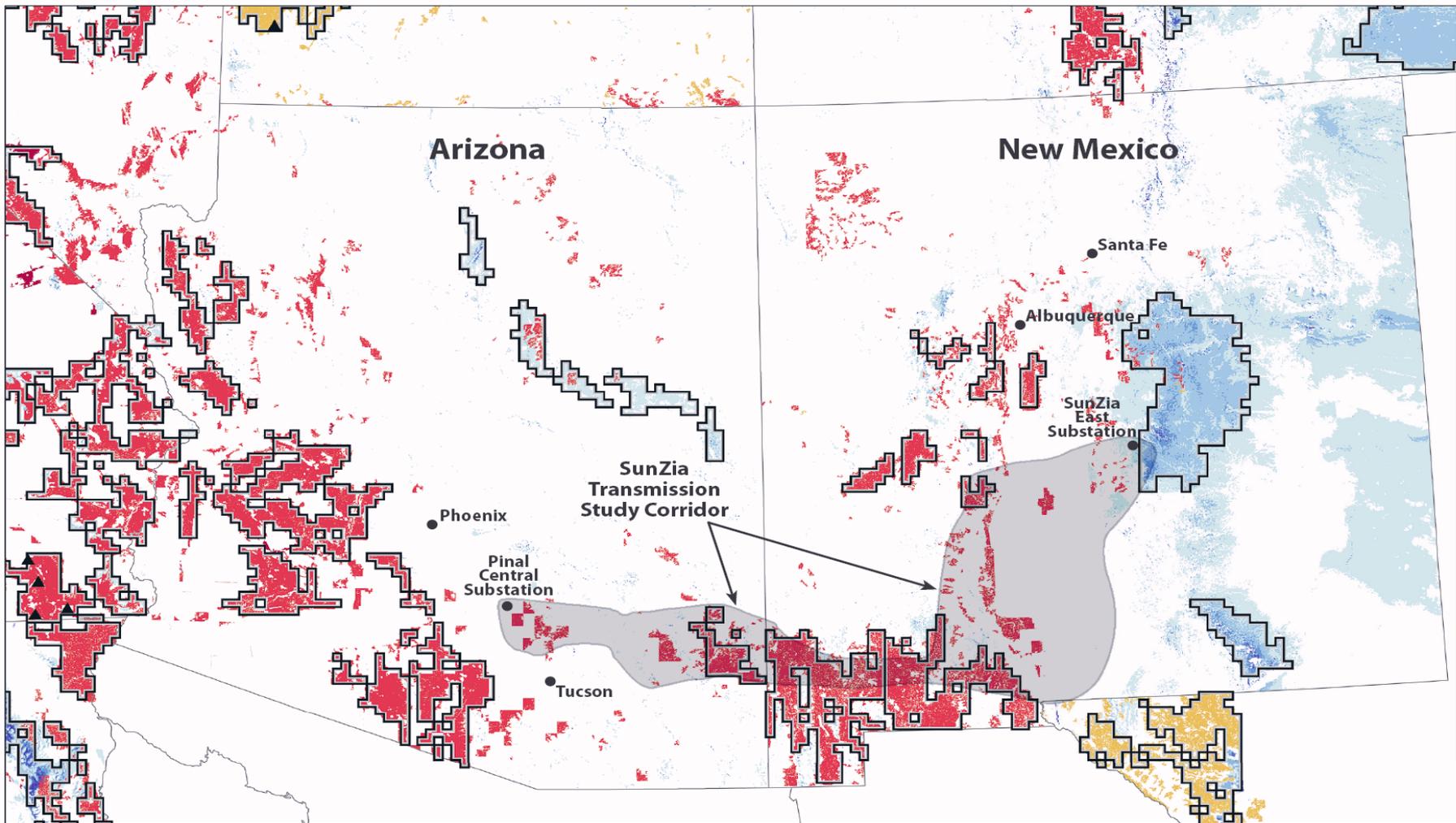


PROPOSED FACILITIES

- ★ Proposed Route Length ~460 Miles
- ★ Configuration Options:
 - ★ Two 500 kV AC lines (currently under WECC review)
 - ★ One 500 kV AC and one 500 kVDC line (hybrid option)
- ★ Expected power transfer capacity of over 3,000 MW or 4,500 MW with AC/DC hybrid option
- ★ Interconnects with at least five substations (two in AZ; three in NM)
 - ✦ Proposed SunZia East (Lincoln County, NM)
 - ✦ Pinal Central/Tortolita (Pinal County, AZ)

Proposed Intermediate substations:

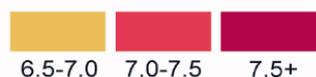
- ★ Willow (Graham County, AZ)
- ★ Midpoint (Luna County, NM)
- ★ Lordsburg (Hidalgo County, NM)
- ★ Others (TBD)



Western Renewable Energy Zones (WREZ) Qualified Resource Areas

Solar thermal resource

Direct normal insolation (kWh/sqmtr/day)



Wind resource

Wind power class



September 11, 2009



Source: WREZ Draft Preliminary Qualified Resource Area (QRA) map, Western Governors Initiative and Department of Energy, February 2, 2009.

SUNZIA PROJECT DESCRIPTION

- ★ Proposed route is primarily on Public Lands

- ★ AZ 84%; NM 82%

- ★ Typical right-of-way width:

- 200 feet per line; Up to 1,000 feet for two lines

- ★ All steel structures

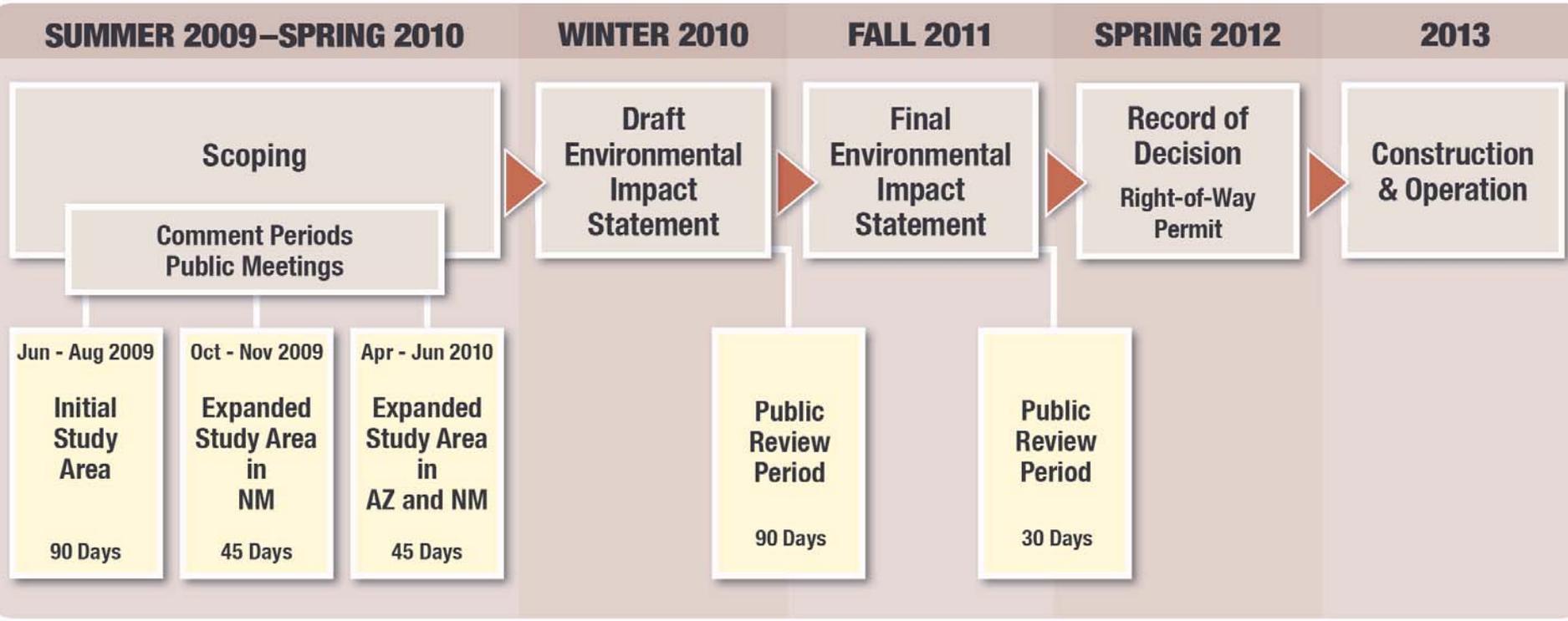
- ★ Typical structure height:

- 130 to 160 feet

- ★ Typical span:

- 1,300 to 1,500 feet between structures

EIS SCHEDULE



ENVIRONMENTAL IMPACT STATEMENT

ACTIVITIES TO-DATE

DATE	ACTIVITY
5/29/09	Notice of Intent published in <i>Federal Register</i>
6/22/09	Initiation of first set of scoping meetings (4 in AZ; 5 in NM)
8/28/09	Close of first Scoping Period
9-10/09	Response to public comments: expanded study area and additional routes in NM
10/26/09	Initiation of second set of scoping meetings (3 in NM)
11/27/09	Close of second Scoping Period
2-3/10	Response to public comments: expanded study area and additional routes in AZ and NM
4/27/10	Initiation of third set of scoping meetings (1 in AZ; 1 in NM)

14 PUBLIC SCOPING MEETINGS

	Meeting Date	Location	Public in Attendance
1	June 22, 2009	Eloy, AZ	16
2	June 23, 2009	Oracle, AZ	39
3	June 24, 2009	Safford, AZ	30
4	June 29, 2009	Willcox, AZ	21
5	June 30, 2009	Lordsburg, NM	13
6	July 1, 2009	Deming, NM	31
7	July 7, 2009	Socorro, NM	26
8	July 8, 2009	Carrizozo, NM	52
9	July 9, 2009	Elephant Butte, NM	15
10	October 26, 2009	Las Cruces, NM	29
11	October 27, 2009	Alamogordo, NM	17
12	October 28, 2009	Chaparral, NM	12
13	April 27, 2010	Socorro, NM	91
14	April 29, 2010	Tucson, AZ	~140
Total Attendees			532

WECC ACTIVITIES

- ★ Phase 1 status per the WECC Three Phase Path Rating Process was achieved on 7/12/2007
- ★ Phase 2 status was achieved on 7/27/2009
- ★ Completion of the WECC 3-Phase rating process is expected to occur before the end of 2010

PHASE II RATING STUDY MILESTONE SCHEDULE

<input checked="" type="checkbox"/> Develop Draft Working Study Plan	08/20/09 X
<input checked="" type="checkbox"/> PRG Meeting #1	08/27/09
<input checked="" type="checkbox"/> Develop Pre-Project Base Cases	09/18/09
<input checked="" type="checkbox"/> Finalize Working Study Plan	09/25/09
<input checked="" type="checkbox"/> Develop Post-Project Non-Simultaneous Cases	10/15/09
<input checked="" type="checkbox"/> Complete Non-Simultaneous Studies	12/25/09
<input checked="" type="checkbox"/> PRG Meeting #2	02/10/10
<input checked="" type="checkbox"/> Develop Simultaneous Base Cases	03/01/10
<input type="checkbox"/> Complete Simultaneous Studies	05/28/10
<input type="checkbox"/> PRG Meeting #3	06/18/10
<input type="checkbox"/> Develop Sensitivity Base Cases	06/25/10
<input type="checkbox"/> Complete Sensitivity/Parallel Studies	09/10/10
<input type="checkbox"/> Draft Report	09/30/10
<input type="checkbox"/> PRG Meeting #4	10/08/10
<input type="checkbox"/> Final Report	10/15/10

TYPICAL 500kV TOWER DESIGNS



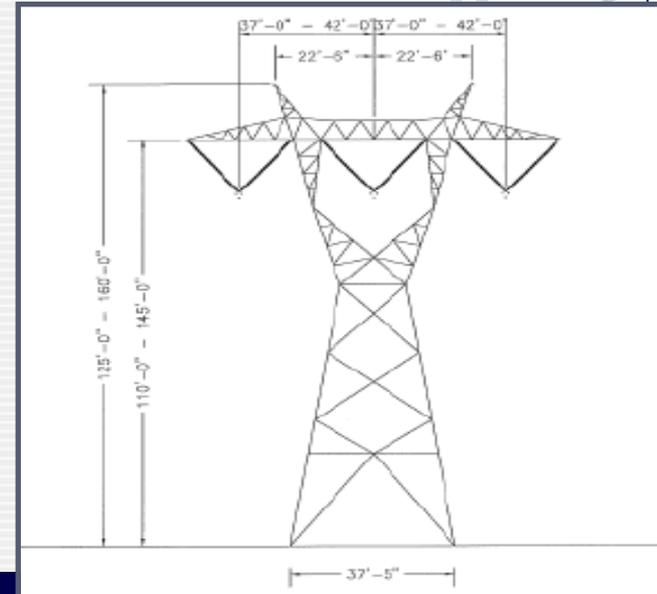
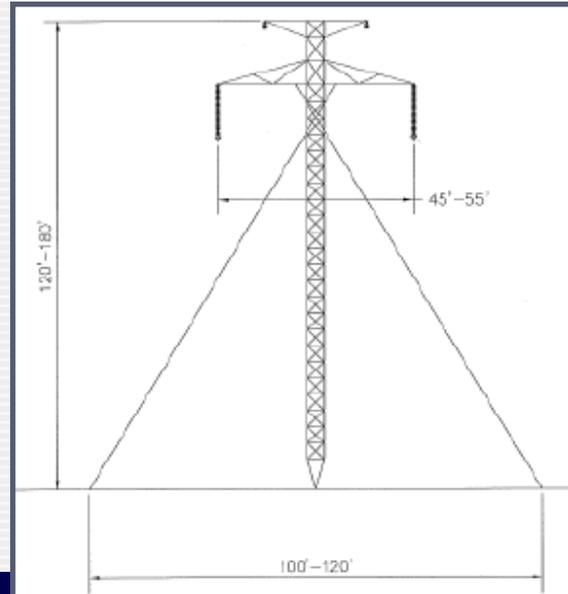
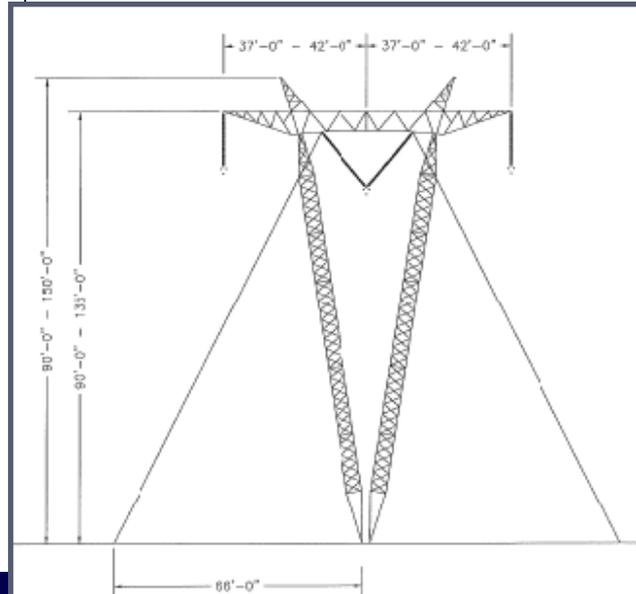
500kV AC Guyed-V



500kV DC Guyed Lattice



500kV AC Self Supporting



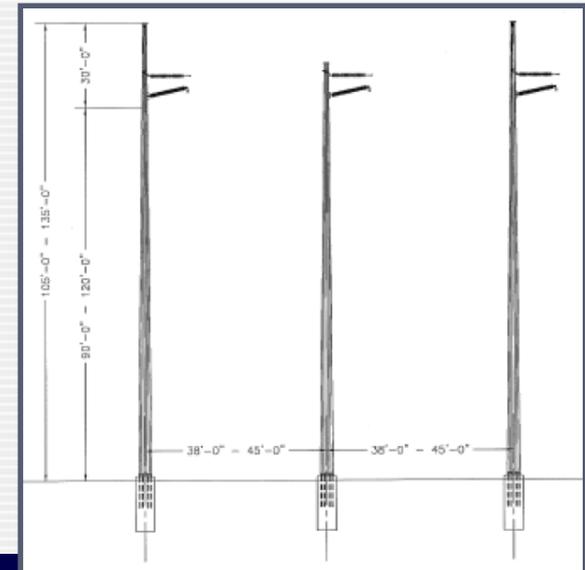
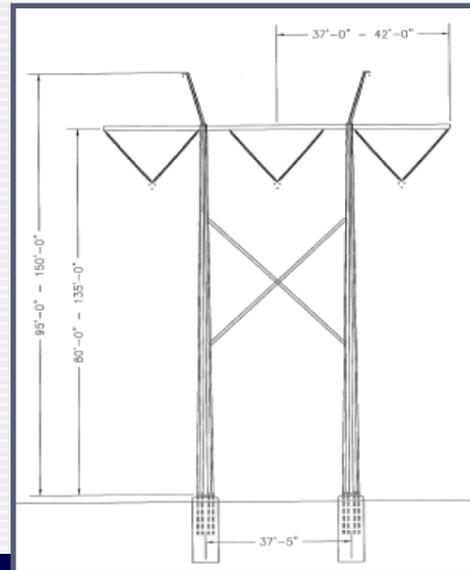
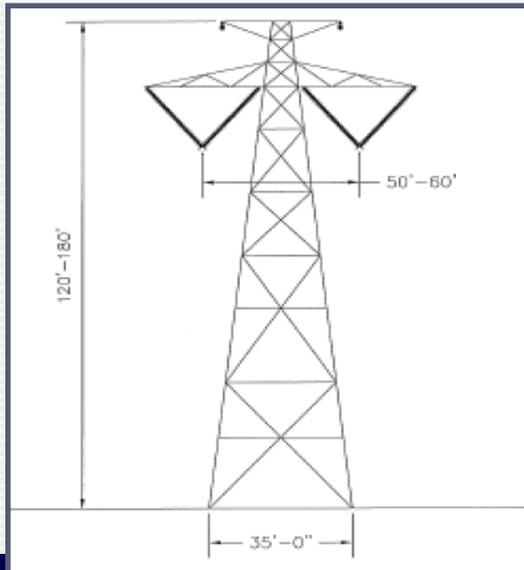
TYPICAL 500kV TOWER DESIGNS



500kV DC Self Supporting

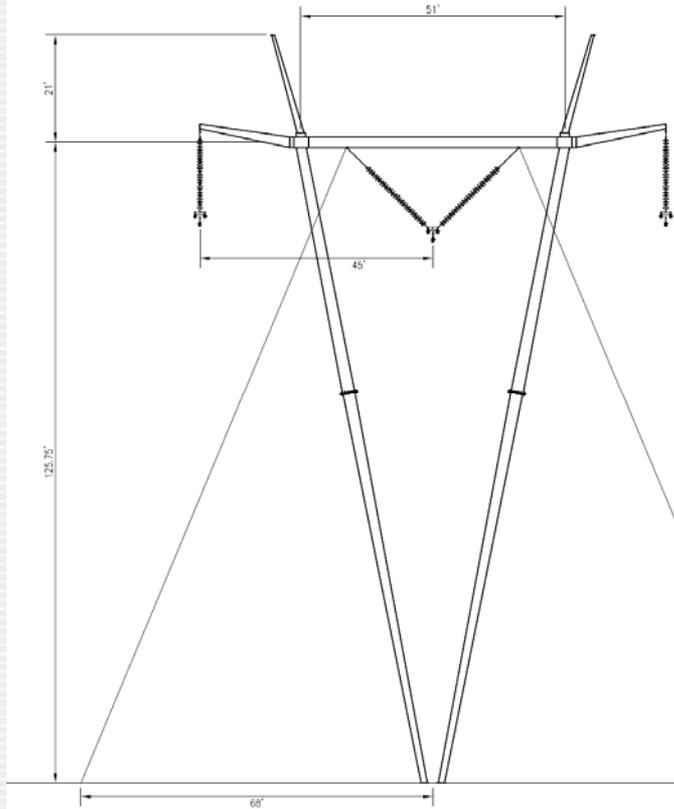
500kV AC H-Frame (mitigation)

500kV AC 3-Pole Deadend



GUYED V TUBULAR STEEL TOWER

<small>ALL DRAWING ARE PROVIDED BY POWER ENGINEERS, INC. FOR A SPECIFIC PROJECT. MAKE INTO CONSIDERATION THE SPECIFIC REQUIREMENTS OF THE PROJECT. NO OTHER REQUIREMENTS OF THE PROJECT. EDGE OF THE DRAWING OR ANY INFORMATION CONTAINED IN THE DRAWING FOR ANY PURPOSE SHALL BE USED WITHOUT THE WRITTEN PERMISSION FROM POWER ENGINEERS, INC. OR POWER'S CLIENT IN POWER.</small>						
REV	REVISIONS	DATE	DRN	DSGN	CHK	APPD



- New Tubular Steel, Guyed V 500kV Structure
- Potential savings of approximately 15%
- Testing has been completed for Design
- Under evaluation for SWIP and other Projects
- Will be evaluated for use on SunZia



DSGN								JOB NUMBER		REV	
DRN											
CHKD											
SCALE:								DRAWING NUMBER			



SUNZIA PROJECT SCHEDULE

2008 2009 2010 2011 2012 2013 2014

Project Development,
Permitting, & Financing

PHASE 1

Engineering Design / Construction

PHASE 2

Operation

PHASE 3

Earliest In-Service Year is 2014

FOR MORE INFORMATION,
PLEASE VISIT THE FOLLOWING WEBSITES:

Project Website:

www.sunzia.net

BLM EIS Website:

www.blm.gov/nm/st/en/prog/more/lands_realty/sunzia_southwest_transmission.html