SunZia Southwest Transmission Project

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October 9, 2013

Fifth Meeting of the
Military & Veterans' Affairs Committee
SunZia: Challenges and Solutions

Project Summary

- 515 mile EHV transmission project
- Two 500 kV lines rated at 3,000 MW of total capacity
- Enables high-quality renewable energy to AZ and CA markets
- Improves reliability by 4 planned connections to existing grid
- Total capital cost is estimated at $2 billion
- One of 7 RRTT pilot projects selected by the Administration
- Commercial operation expected as early as 2017
- LOI with First Wind that is planning up to 1,500 MW of wind generation in central New Mexico

Project Sponsors

SouthWestern Power/ MMR Group

Salt River Project

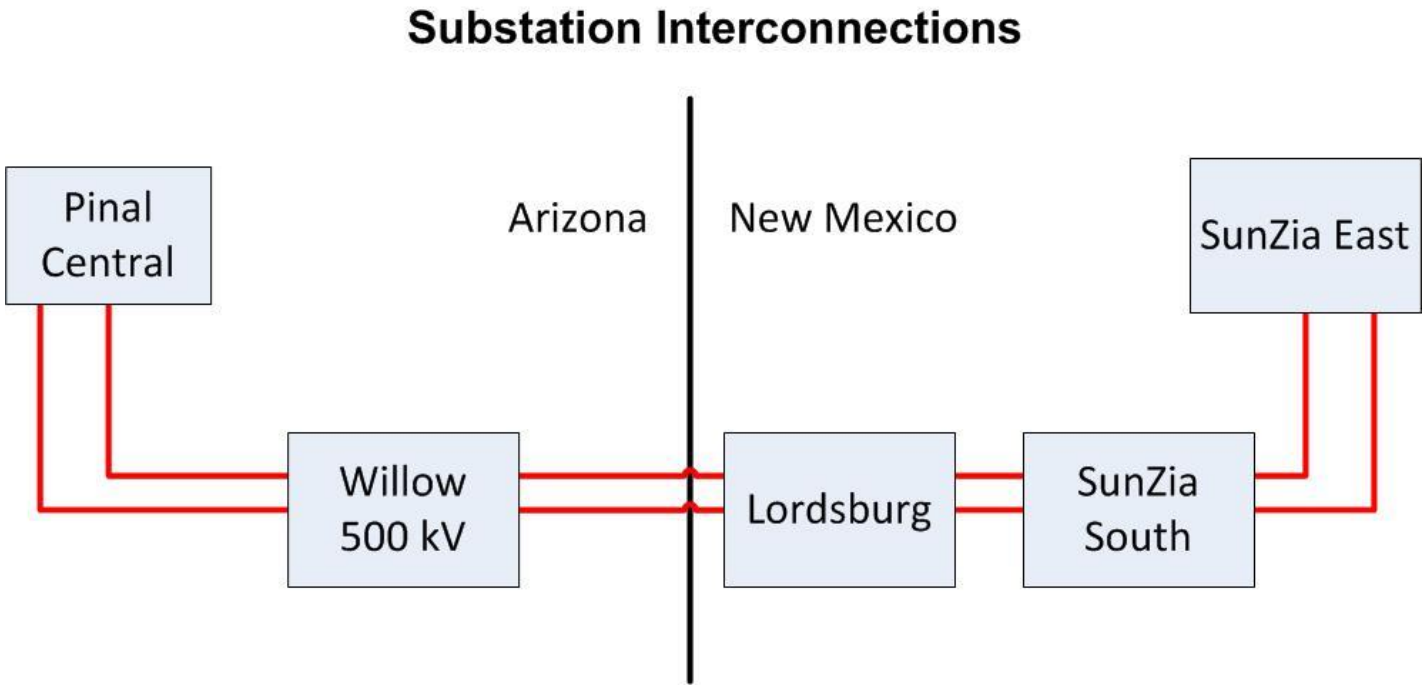
Shell Wind Energy

Tri-State G&T

Tucson Electric Power

Proposed Facilities

- **Configuration Options:**
  - ~ Two 500 kV AC lines (3,000 MW)
  - ~ OR one 500 kV AC and one 500 kV DC line (4,500 MW)



Final EIS Preferred Route

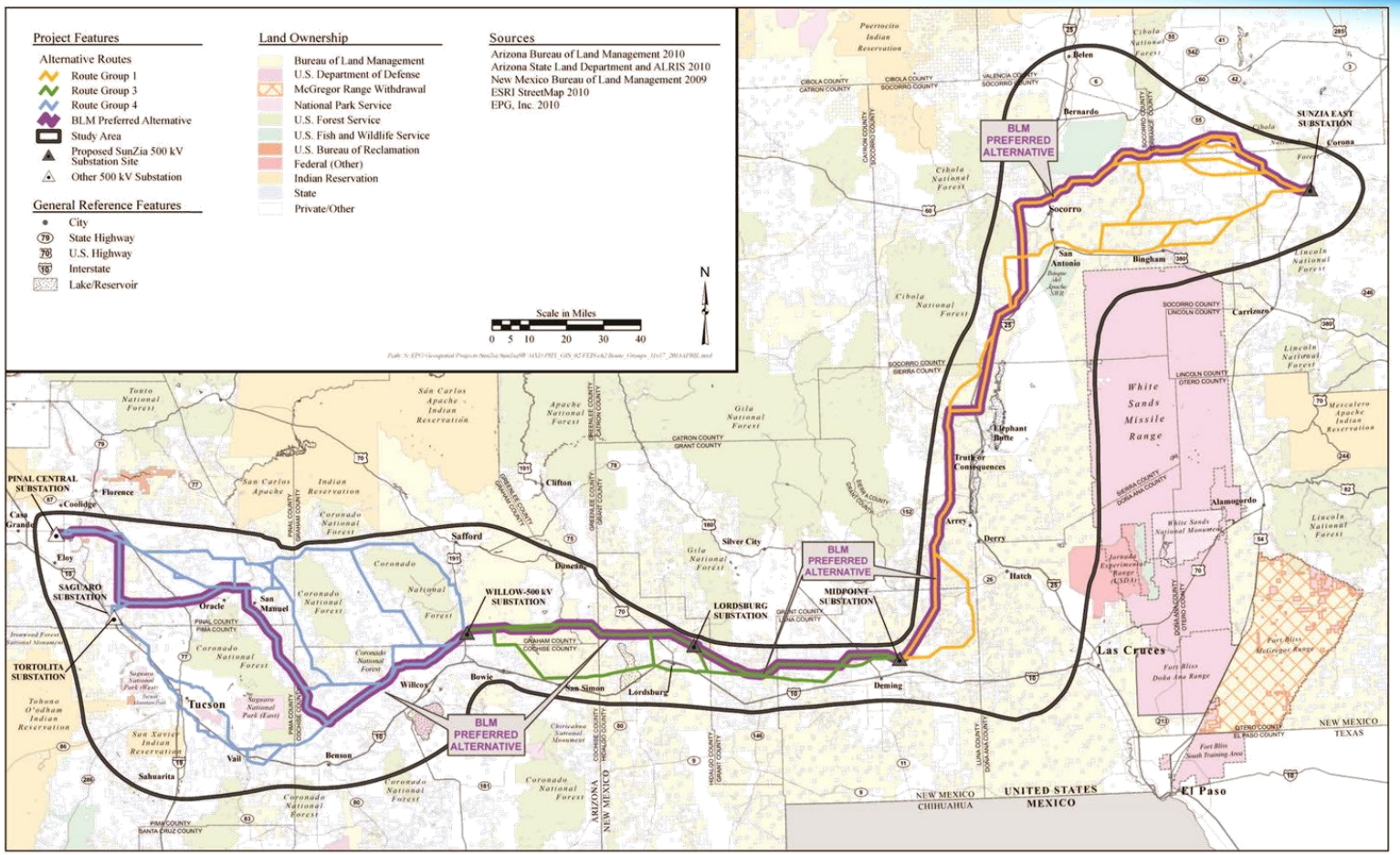
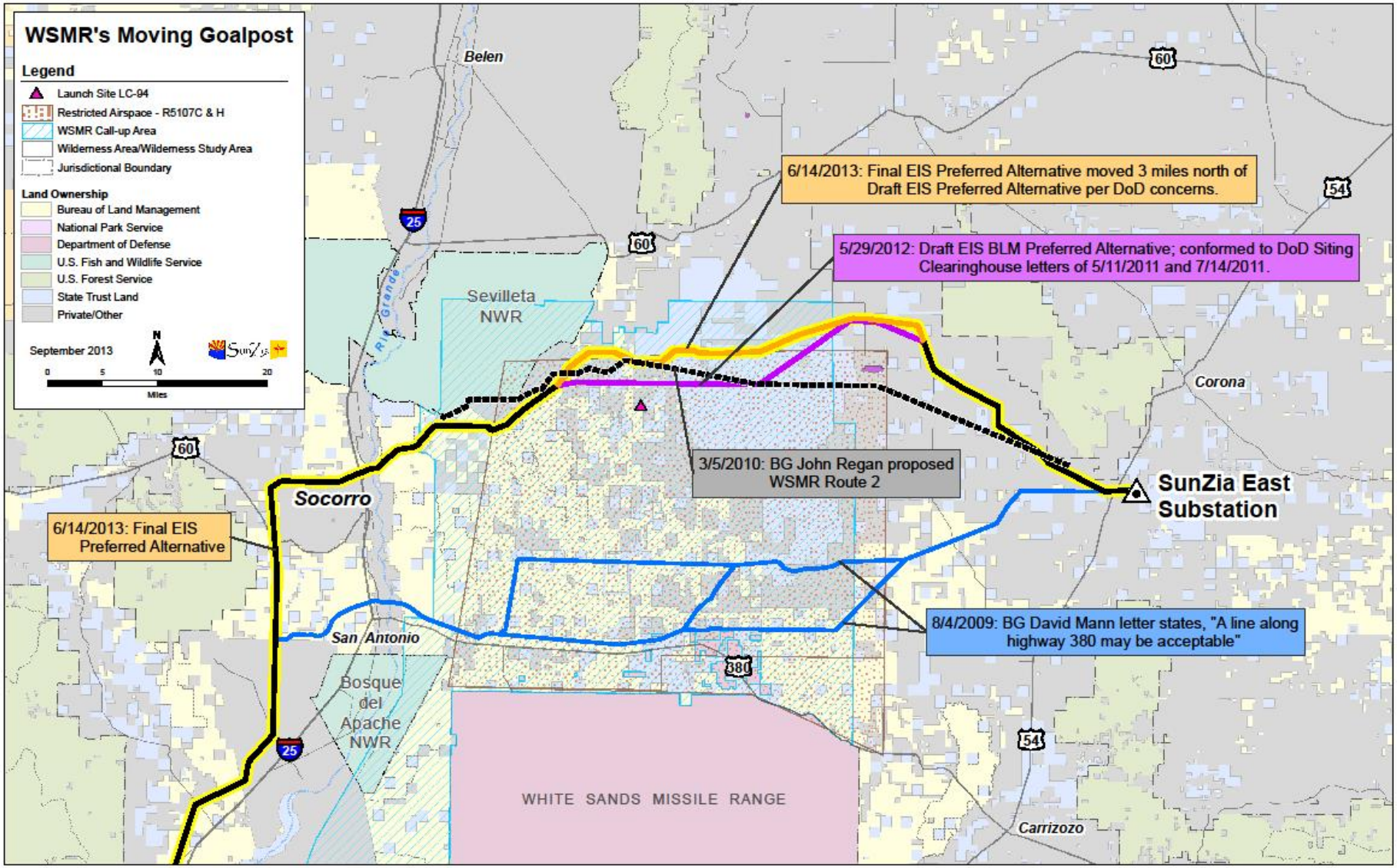
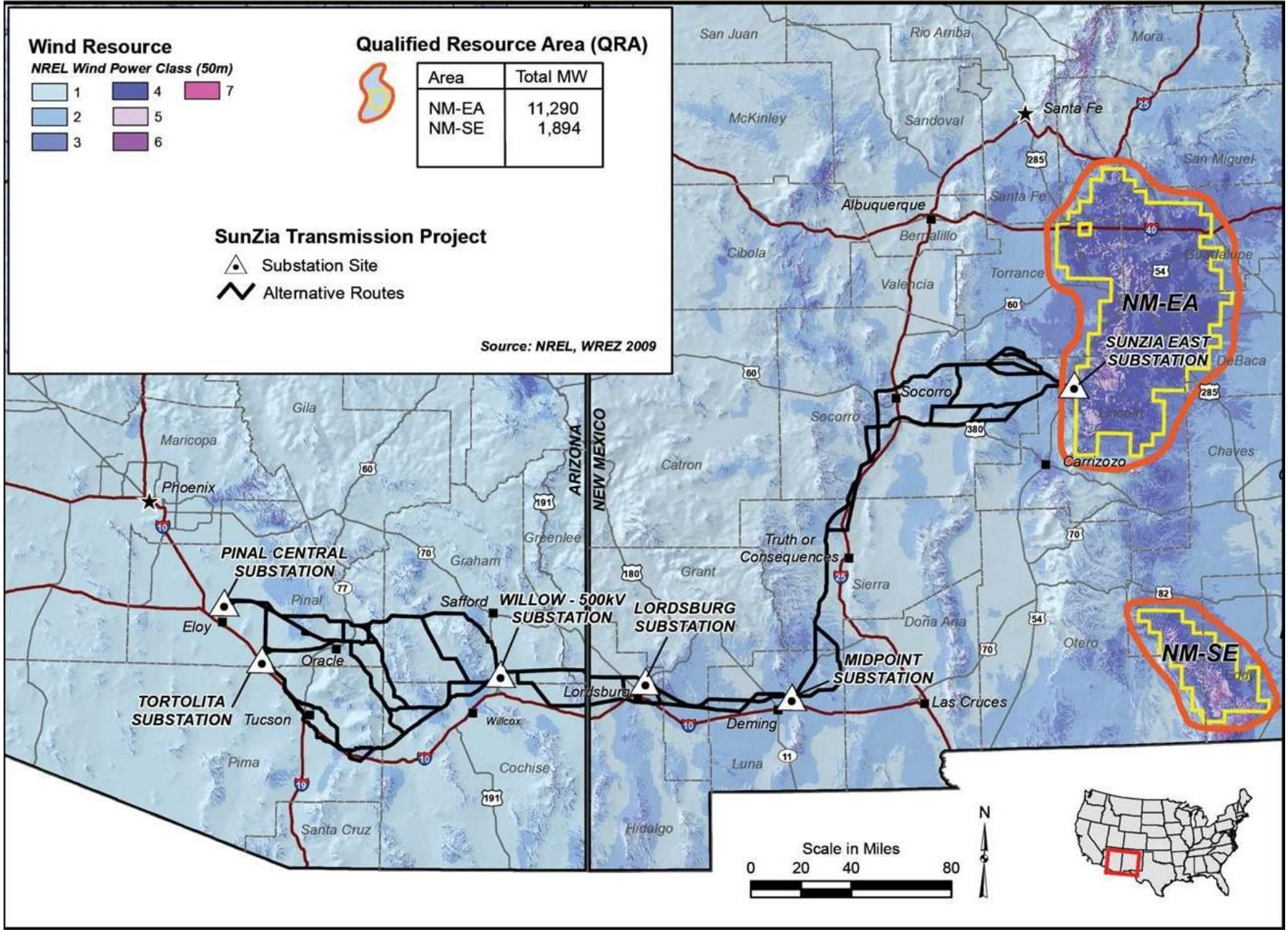
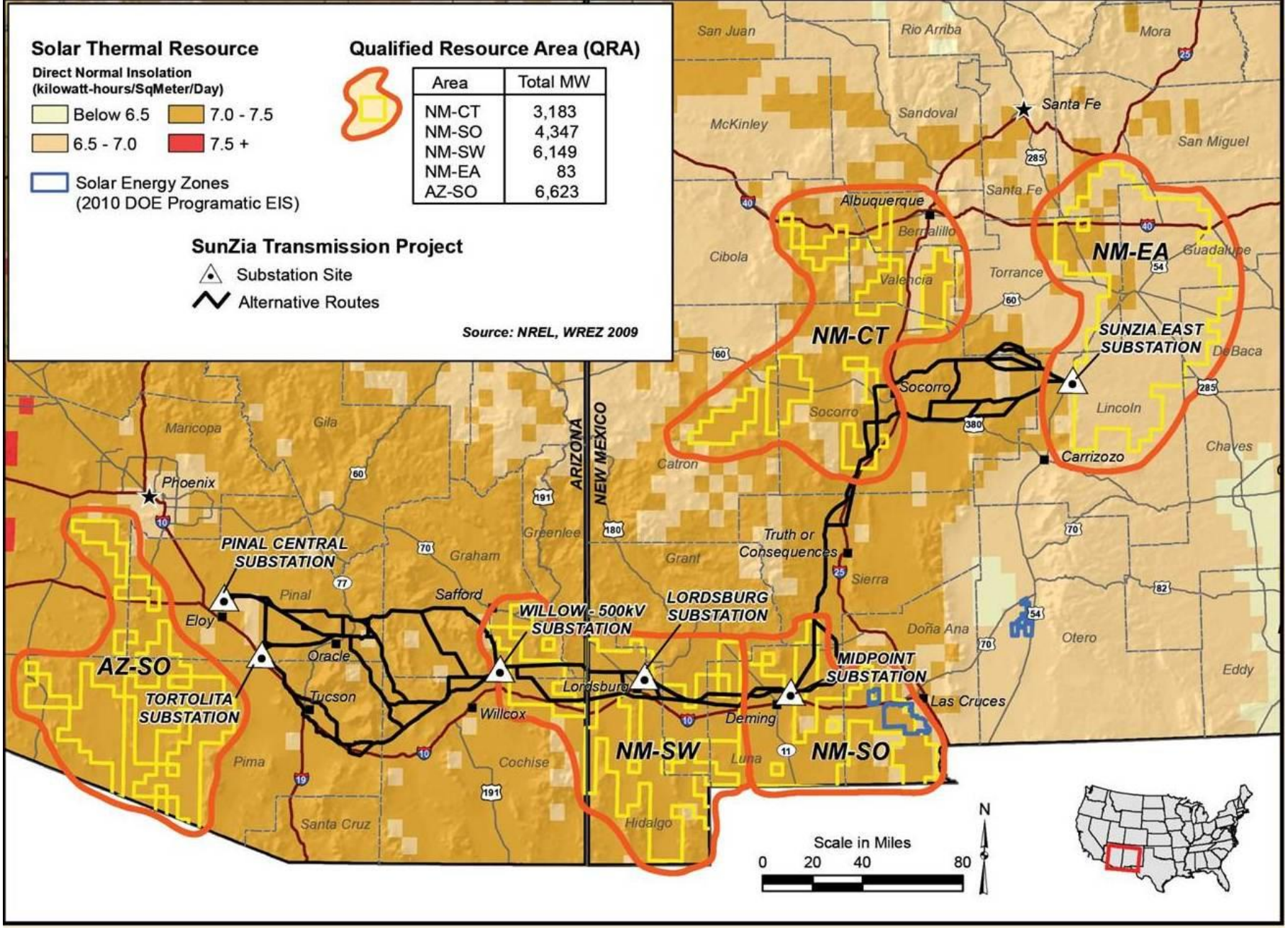


Figure 2-3. Alternative Routes


WSMR's Moving Goalpost
Legend
Launch Site LC-94
Restricted Airspace - R5107C & H
WSMR Call-up Area
Wilderness Area/Wilderness Study Area
Jurisdictional Boundary
Land Ownership
Bureau of Land Management
National Park Service
Department of Defense
U.S. Fish and Wildlife Service
U.S. Forest Service
State Trust Land
Private/Other
September 2013
N
0 5 10 20
Miles
Belen
Sevilleta NWR
Rio Grande
Socorro
San Antonio
Bosque del Apache NWR
WHITE SANDS MISSILE RANGE
Corona
Carrizozo
SunZia East Substation
6/14/2013: Final EIS Preferred Alternative moved 3 miles north of Draft EIS Preferred Alternative per DoD concerns.
5/29/2012: Draft EIS BLM Preferred Alternative; conformed to DoD Siting Clearinghouse letters of 5/11/2011 and 7/14/2011.
3/5/2010: BG John Regan proposed WSMR Route 2
6/14/2013: Final EIS Preferred Alternative
8/4/2009: BG David Mann letter states, "A line along highway 380 may be acceptable"
25
60
54
380


Wind Resource
NREL Wind Power Class (50m)
1
2
3
4
5
6
7
Qualified Resource Area (QRA)
Area
Total MW
NM-EA
11,290
NM-SE
1,894
SunZia Transmission Project
Substation Site
Alternative Routes
Source: NREL, WREZ 2009
NM-EA
SUNZIA EAST SUBSTATION
NM-SE
PINAL CENTRAL SUBSTATION
WILLOW - 500kV SUBSTATION
LORDSBURG SUBSTATION
MIDPOINT SUBSTATION
TORTOLITA SUBSTATION
Santa Fe
Albuquerque
Socorro
Carrizozo
Truth or Consequences
Las Cruces
Deming
Lordsburg
Willcox
Tucson
Phoenix
Eloy
Oracle
Safford
ARIZONA
NEW MEXICO
Scale in Miles
0 20 40 80
N


Solar Thermal Resource
Direct Normal Insolation
(kilowatt-hours/SqMeter/Day)
Below 6.5
7.0 - 7.5
6.5 - 7.0
7.5 +
Solar Energy Zones
(2010 DOE Programatic EIS)
Qualified Resource Area (QRA)
Area | Total MW
NM-CT | 3,183
NM-SO | 4,347
NM-SW | 6,149
NM-EA | 83
AZ-SO | 6,623
SunZia Transmission Project
Substation Site
Alternative Routes
Source: NREL, WREZ 2009
San Juan
Rio Arriba
Mora
McKinley
Sandoval
Santa Fe
San Miguel
Albuquerque
Bernalillo
Santa Fe
Cibola
Valencia
Torrance
Guadalupe
NM-EA
NM-CT
SUNZIA EAST SUBSTATION
DeBaca
Socorro
Lincoln
Chaves
Carrizozo
Maricopa
Gila
Phoenix
ARIZONA
NEW MEXICO
Catron
Greenlee
Graham
Grant
Truth or Consequences
Sierra
PINAL CENTRAL SUBSTATION
Pinal
Safford
Eloy
WILLOW - 500kV SUBSTATION
LORDSBURG SUBSTATION
Doña Ana
Otero
Eddy
AZ-SO
Oracle
MIDPOINT SUBSTATION
TORTOLITA SUBSTATION
Tucson
Lordsburg
Las Cruces
Willcox
Deming
NM-SW
NM-SO
Luna
Pima
Cochise
Santa Cruz
Hidalgo
Scale in Miles
0 20 40 80
N

Economic Impacts during Construction in New Mexico

SunZia Alone		Renewable Projects		AC/AC		AC/DC		Renewable Projects		SunZia Alone
3,900	+	20,700	=	**24,600**	JOBS	**34,900**	=	30,800	+	4,100
$ 275M	+	$1.15B	=	**$ 1.4B**	WAGES & SALARIES	**$ 2B**	=	$1.75B	+	$ 290M
$ 65M	+	$ 80M	=	**$ 145M**	STATE & LOCAL TAXES	**$ 214M**	=	$119M	+	$ 95M

These figures present the values associated with the Project and the cumulative values for Project + 1,810 MW (AC/AC) and Project + 3,850 MW (AC/DC).

Construction jobs are measured in man-years

Economic Impacts during O&M in New Mexico

SunZia Alone		Renewable Projects		AC/AC (A A)		AC/DC (A D)		Renewable Projects		SunZia Alone
40	+	290	=	**330**	JOBS	**500**	=	450	+	50
$ 2M	+	$ 15M	=	**$ 17M**	WAGES & SALARIES	**$ 28M**	=	$25M	+	$ 3M
$ 8M	+	$ 45M	=	**$ 53M**	PROPERTY TAXES	**$ 93M**	=	$80M	+	$13M

These figures present the values associated with the Project and the cumulative values for Project + 1,810 MW (AC/AC) and Project + 3,850 MW (AC/DC).

Local Support for SunZia in NM

- **A selection of local resolutions/support letters:**

August 1, 2012	City of Deming, NM Mayor letter
July 8, 2013	City of Deming, NM Resolution No. 13-30
July 16, 2013	Sierra County, NM Resolution No. 102-019
July 16, 2013	Lincoln County, NM Resolution No. 2013-5
July 17, 2013	Hidalgo County, NM Resolution No. 2013-20
August 8, 2013	Luna County, NM Resolution No. 13-39
August 27, 2013	Grant County, NM Resolution No. R-13-58

Major Milestones - Completed

Date	Milestone
May 2009	Published Notice of Intent (NOI) for BLM to prepare EIS
June 2009 – June 2010	Public Scoping on Project Alternatives
March 2011	WECC granted Phase 3 status, which affirmed the project's transfer capacity at 3,000 MWs for (2) 500kV AC lines
May 2011	Declaratory Order from FERC
October 2011	Selected as a pilot project for the Federal Rapid Response Team for Transmission (RRTT)
November 2011	Commenced anchor tenant process
May 2012	Draft EIS issued
June 2013	Final EIS issued
August 2013	Signed LOI with First Wind for up to 1,500 MW of capacity

Major Milestones - Future

Estimated Date	Milestone
Q4 2013	BLM Record of Decision
2013-2014	Customers & PPAs
2014	Arizona – Certificate of Environmental Compatibility New Mexico – Location Control Permit
2014-2015	Arizona State Land Department Right-of-Way New Mexico State Land Office Right-of-Way Private Right-of-Way
2015-2017	Construction
2017/2018	Operation

Why SunZia?

- Provides NM with needed transmission investment
- Enables 3,000 MW of renewable energy generation
- Generation benefits = 4x to 7x transmission benefits
- Can provide broadband telecom to rural NM
- Paid for by private sector capital & users of SunZia's energy
- Adds new jobs and investment in NM without diminishing the military's presence

SunZia Attributes

- Provides access to low-cost, high-quality renewable energy
- Highly experienced, local development team
- Supportive partnership of utilities & independents
- Large, positive economic impacts in AZ & NM
- Improves reliability of the regional grid
- Supported by AZ & NM Governors
- Well-received by AZ & NM Regulators
- LOI with First Wind as anchor tenant for 1,500 MW
- Most advanced independent transmission project in NM

For more information, please visit:

www.sunzia.net

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Supplemental Slides

All Routes Considered by the BLM

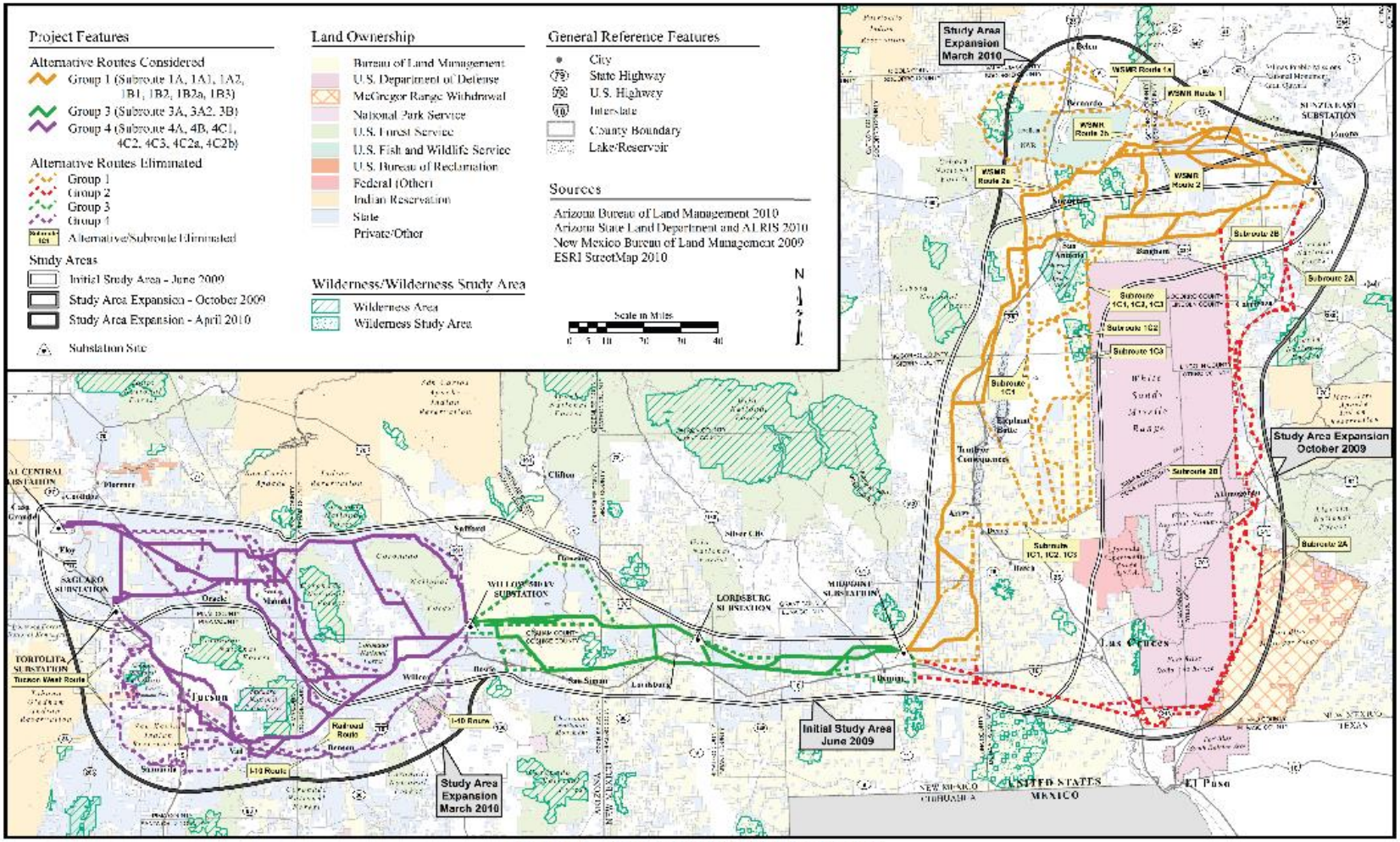


Figure 2-7. Alternatives Considered but Eliminated

Cooperating Agencies in the EIS Process

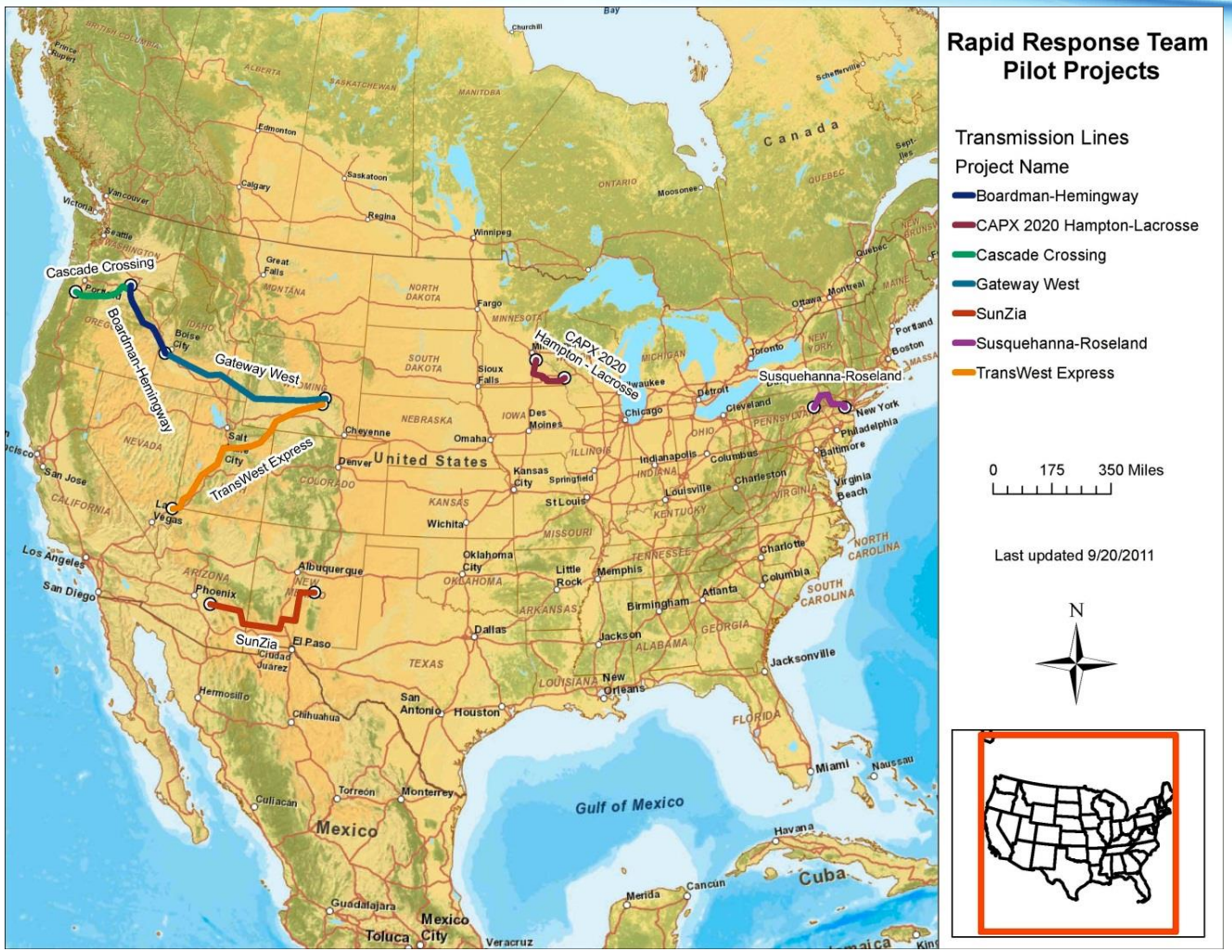
Federal Agencies:

- U.S. Army Corps of Engineers
- Fort Bliss McGregor Range
- Fort Huachuca Army Base
- White Sands Missile Range
- Holloman Air Force Base
- U.S. Fish & Wildlife Service
- National Park Service
- Department of Defense Siting Clearinghouse
- Bureau of Indian Affairs

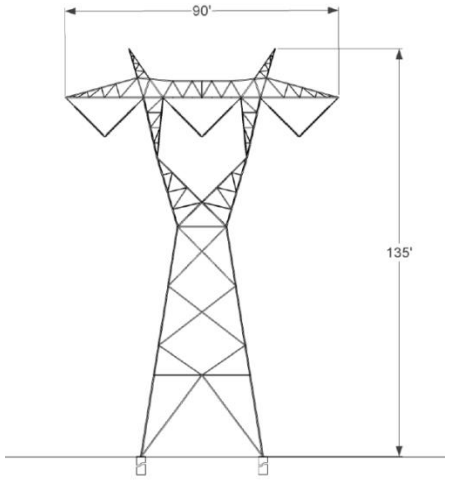
State Agencies:

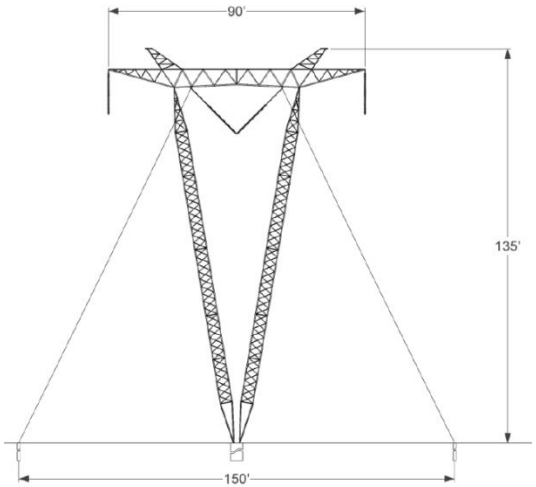
- Arizona State Land Department
- Arizona Game & Fish Department
- Arizona Department of Transportation
- New Mexico State Land Office
- New Mexico Spaceport Authority

RRTT Pilot Projects



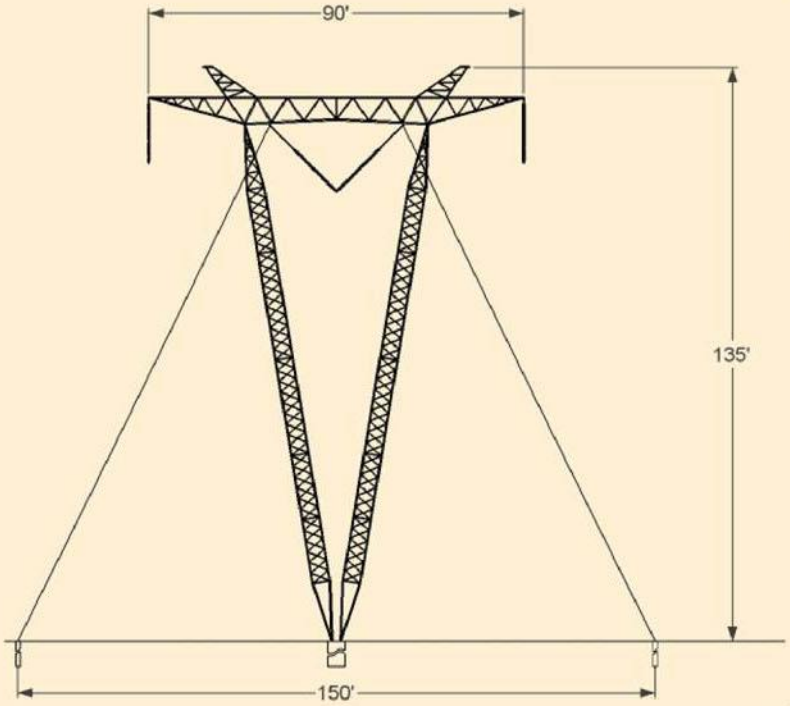
Project Description

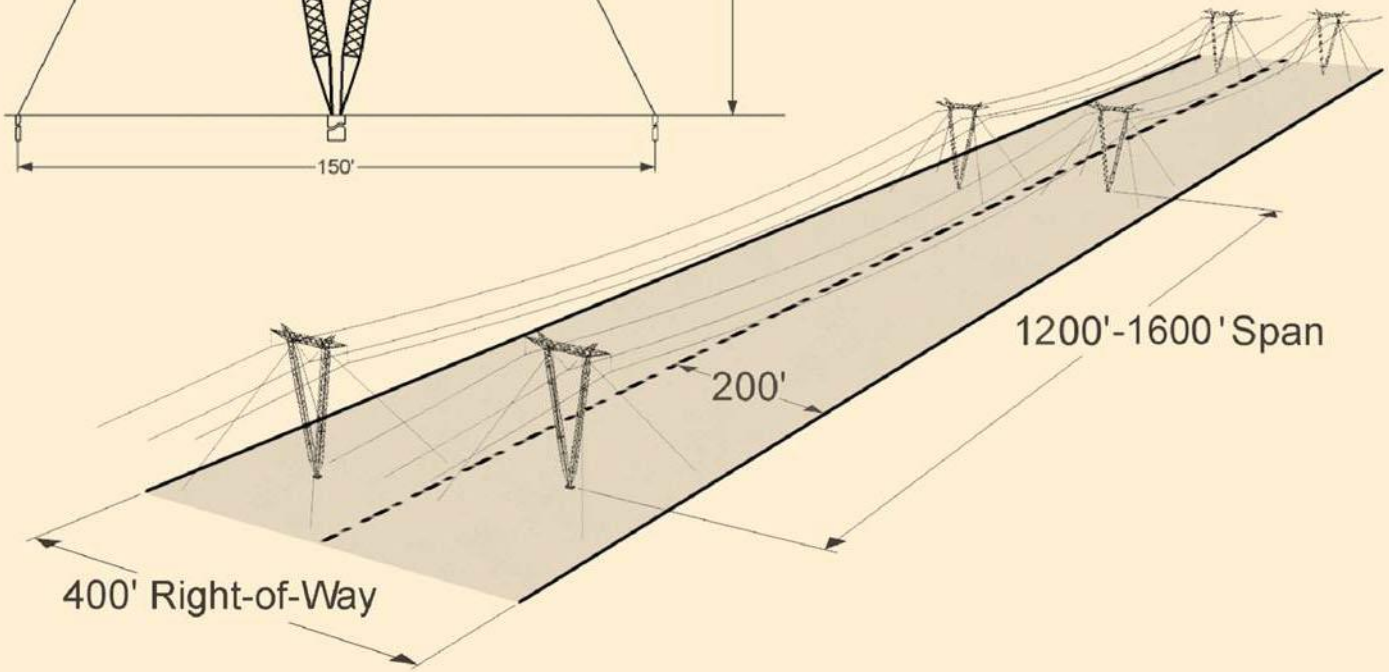




- Typical right-of-way widths for both lines is 400 to 1,000 ft depending on the terrain
- Typical distance between structures is 1,400 to 1,600 ft (3 -4 structures per mile)
- Typical tower heights are 135 ft, depending on distances between structures and terrain

- **Typical right-of-way 400 feet wide for two lines (up to 1,000 feet)**
- **Typical structure height 135 feet (100 to 170 feet)**
- **Typical span 1,400 feet (1,200 to 1,600 feet)**





SouthWestern Power Group

- **Independent developer of utility-scale generation and transmission in the Desert Southwest**
- **Project Manager/Developer of SunZia**
- **Staff of 10, based in Phoenix, in business for 12 years**
- **Major References:**
  - 2,400 MW CCGT Panda Gila River power plant (in operation)
  - 1,000 MW CCGT Bowie Power Station (permitted)
  - 600 MW Lignite CFB Rockdale Power Plant (in operation)
  - 140 MW Solar PV power project (in construction)
- **Owned by MMR Group in Baton Rouge, LA**

MMR Group

- Construction services firm based in Baton Rouge, LA
- 22 offices in USA, Canada & overseas
- In business +25 years; owned by senior management
- Approximately 5,000 employees
- Electrical & Instrumentation specialty
- Industrial markets only: power, oil & gas, process, etc.
- Built over 30,000 MWs of generation