

2024 Sandia Blade Workshop

SunZia Wind & Transmission Public Engagement

September 16, 2024



Pattern Energy



Pattern Energy is a leading developer, operator and owner of renewable energy infrastructure projects and facilities across North America. Our mission is to transition the world to renewable energy through the sustainable development and responsible operation of facilities with respect for the environment, communities, and cultures where we have a presence.

Our approach begins and ends with establishing trust, accountability, and transparency. Our company values of creative spirit, pride of ownership, follow-through, and a team-first attitude drive us to pursue our mission every day. Our culture supports our values by fostering innovative and critical thinking and a deep belief in living up to our promises.

Headquartered in San Francisco, Pattern has a portfolio of power facilities and transmission assets producing and transporting nearly 6,000 MW of power across North America, serving various customers that provide low-cost clean energy to millions of consumers.

Pattern In New Mexico

Pattern has successfully developed and financed
 ~ 1,600MW of wind and transmission projects in New Mexico.

Broadview Wind | Curry NM, Deaf Smith TX

Operating COD: 2017

Grady Wind | Curry County, NM

Operating COD: 2019

TRANSMISSION SERVICING BROADVIEW AND GRADY

35-mile 345kV Developed & constructed by Pattern, owned & operated by Pattern

Western Spirit Wind |

Guadalupe, Lincoln, & Torrance, NM

Operating COD: 2021

TRANSMISSION

155-mile 345kV Developed & constructed by Pattern

SunZia Wind and Transmission

San Miguel, Lincoln, & Torrance, NM

Construction 2023-2026

TRANSMISSION

SunZia Transmission Project; 500+ mile 525kV HVDC

*Combined stats for Broadview and Grady

INSTALLED CAPACITY

324 | N20 W

CAPITAL COST

\$732 million

INSTALLED CAPACITY

1,050 MW

CAPITAL COST

\$2 million

INSTALLED CAPACITY

3,515 MW

CAPITAL COST

\$11 million

PMT. IN LIEU OF TAXES

\$18.9 million

TOTAL ECONOMIC IMPACT

\$2.2 billion

Direct, Indirect & Induced

PMT. IN LIEU OF TAXES

\$88.3 million

TOTAL ECONOMIC IMPACT

\$5.03 billion

Direct, Indirect & Induced

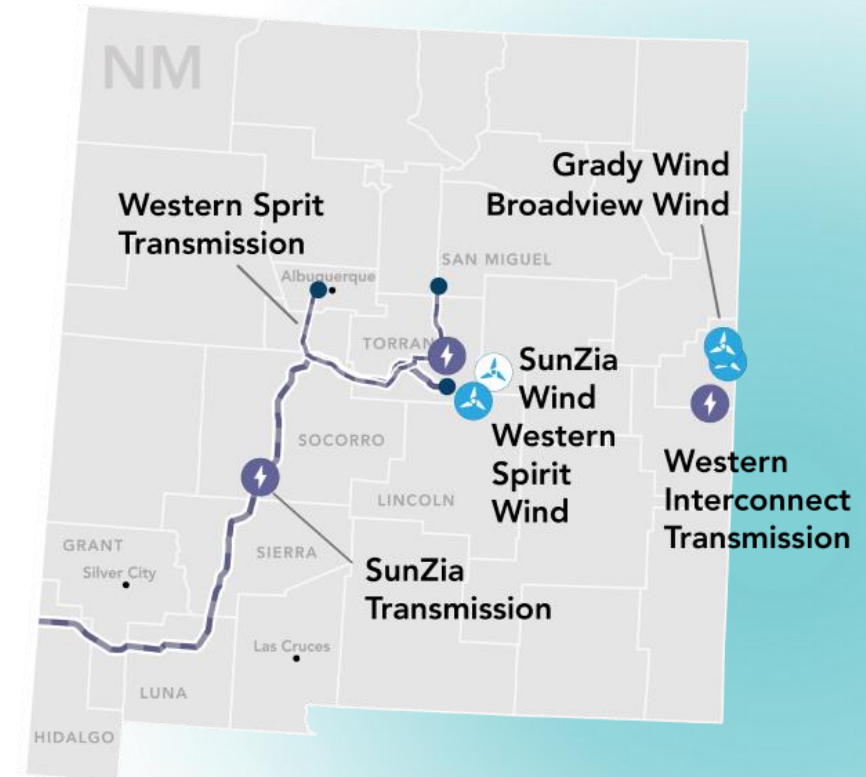
PMT. IN LIEU OF TAXES

\$303million

TOTAL ECONOMIC IMPACT

\$15.9 billion

Direct, Indirect & Induced



SunZia - The Largest Renewable Energy Infrastructure in US history



0.2%

U.S Electricity GHG Reductions

3 million+

Americans' Electricity Needs Served

2,000

Construction Jobs

\$11 billion

Total Investment

\$1 billion

Economic Benefits

to governments, schools, communities, private landowners across Arizona and New Mexico

550-mile

Transmission Line Infrastructure

±525 kV high-voltage direct current (HVDC)

3,515

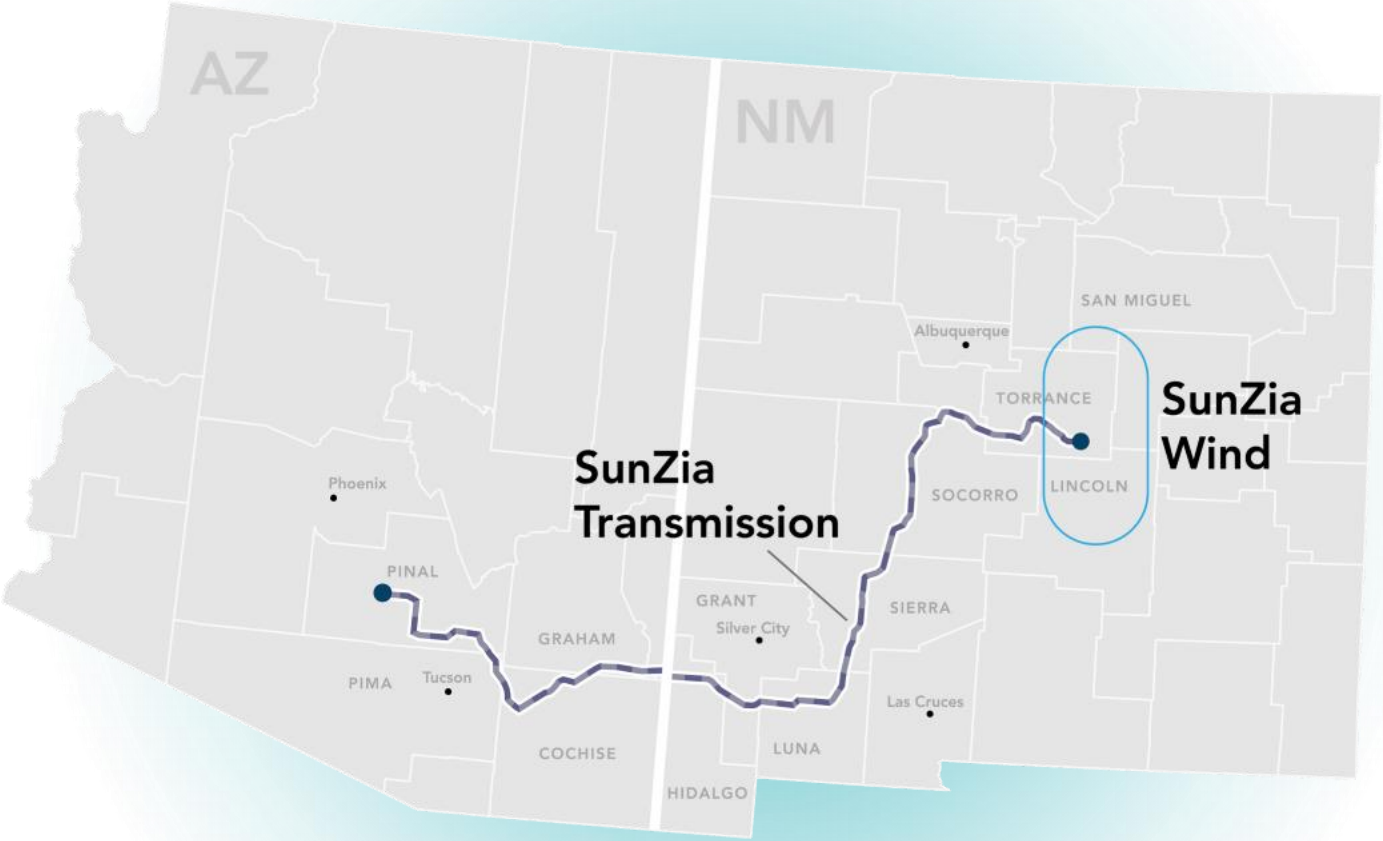
Megawatts of Clean Energy

SunZia Transmission Land

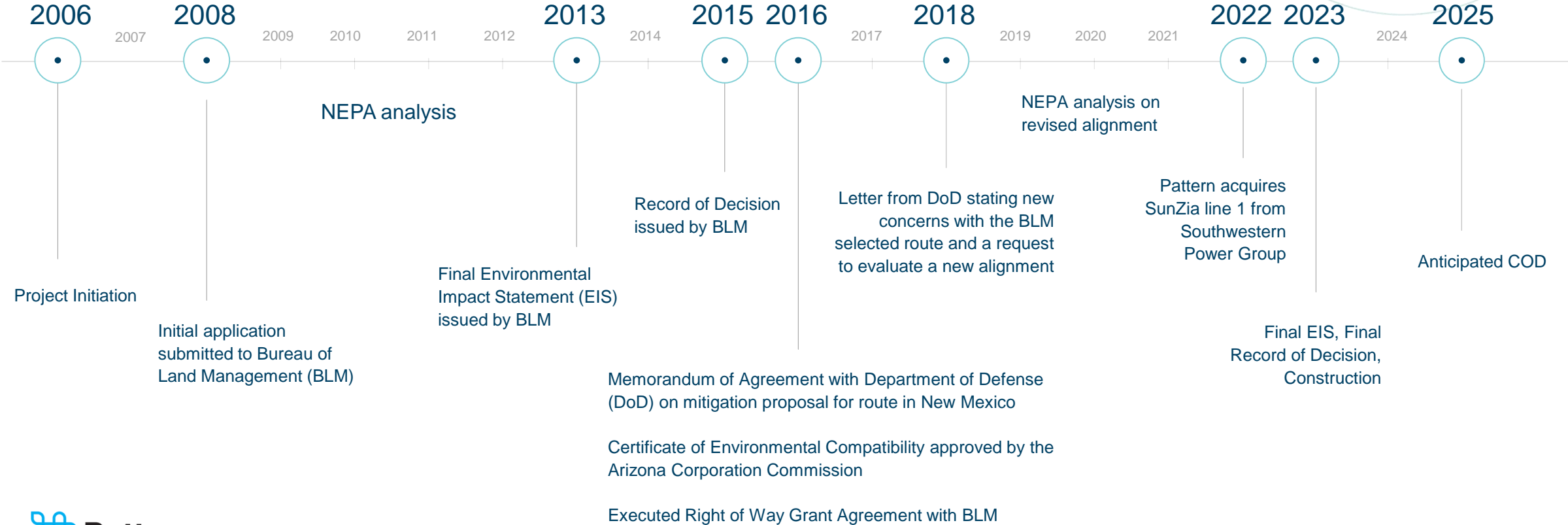
Land	Miles	%
BLM	173.5	31.4%
BUREAU OF RECLAMATION	0.4	0.1%
USFWS	11.4	2.1%
TOTAL FEDERAL	185.3	33.5%
AZ STATE LAND	134.1	24.2%
NM STATE LAND	93.0	16.8%
PRIVATE LANDOWNERS	140.6	25.4%
TOTAL LAND	553	100.0%

Materials

LATTICE STRUCTURE COUNT	1991
MONOPOLE STRUCTURE COUNT	171



SunZia Transmission Timeline



SunZia Wind Metrics by Project Area

SunZia North

San Miguel, Lincoln Counties, NM

# OF TURBINES INSTALLED	242
NAMEPLATE, MW	1,089 MW
TURBINE MODEL	V163 - 4.5 MW
Roads and Cables	
ACCESS ROADS	210 miles
34.5 kV CABLE	615 miles
TRENCHING	205 miles
OVERHEAD COLLECTION	27 miles
345kV GEN-TIE	61 miles
Land Ownership	
PRIVATE LANDS	70,606 acres
STATE LANDS	113,890 acres
TOTAL LAND	184,496 acres

SunZia South

Torrance, Lincoln Counties, NM

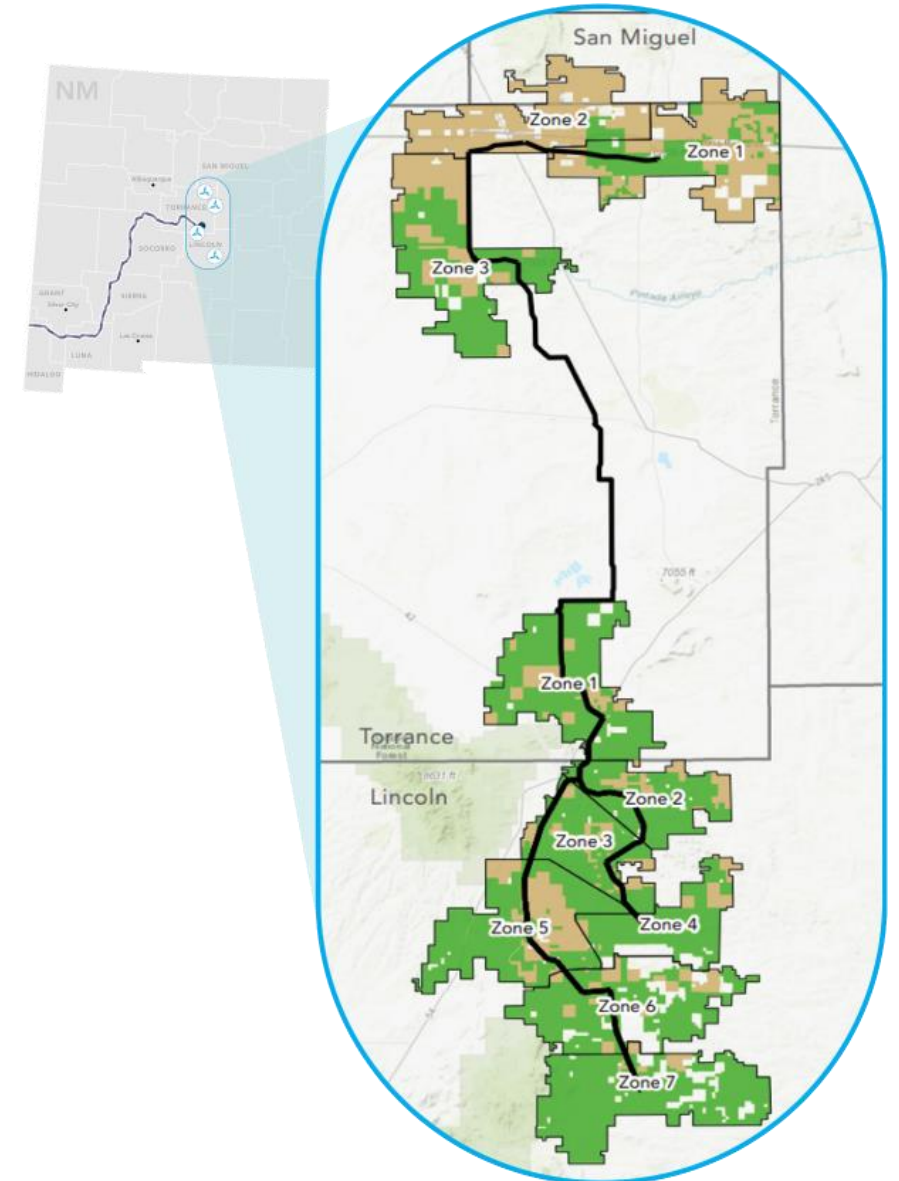
# OF TURBINES INSTALLED	674
NAMEPLATE, MW	2,426 MW
TURBINE MODEL	GE - 3.6 MW
Roads and Cables	
ACCESS ROADS	442 miles
34.5 kV CABLE	1,617 miles
TRENCHING	523 miles
OVERHEAD COLLECTION	74 miles
345kV GEN-TIE	74 miles
Land Ownership	
PRIVATE LANDS	285,606 acres
STATE LANDS	57,922 acres
TOTAL LAND	343,528 acres

SunZia Wind Totals

North & South combined

# OF TURBINES INSTALLED	916 turbines
NAMEPLATE, MW	3,515 MW
Roads and Cables	
ACCESS ROADS	652 miles
34.5 kV CABLE	2,232 miles
TRENCHING	728 miles
OVERHEAD COLLECTION	101 miles
345kV GEN-TIE	135 miles

Land Ownership	
PRIVATE LANDS	356,212 acres
STATE LANDS	171,812 acres
TOTAL LAND	528,024 acres



Public Engagement Goals and Objectives

Goal

De-risk projects by increasing public acceptance and building support to achieve right to build.

Objectives

Identify and prioritize stakeholder groups based on their level of interest, influence, and potential impact on the project's success to focus engagement efforts allocate resources effectively.

Develop an engagement plan that outlines how the project will engage with stakeholders throughout the project development process. The plan should be tailored to the specific needs of each project and should include clear objectives, timelines, and communication strategies.

Communicate project benefits and impacts. Provide clear and accurate information about the benefits and impacts of the renewable energy project. This can include information about job creation, economic benefits, environmental impacts, and other relevant information.

Communicate project milestones and progress in a timely and transparent manner. This can help to build trust and confidence in the project and ensure that stakeholders are aware of key developments that may affect their interests.

Solicit feedback to help identify concerns, gain valuable insights, and refine project plans to ensure that they align with stakeholder needs and priorities.

Address concerns. This can include making changes to project design or addressing specific concerns related to environmental impacts or other issues.

Build positive relationships and community support. This can include engaging with community leaders and local organizations, providing information about the project's benefits, and working to address any concerns or issues that may arise. This will help to create a foundation of trust and cooperation that can be leveraged throughout the project development process.

Monitor perceptions and adjust engagement strategy as needed. Assess stakeholder attitudes, project needs, and timeframes, and adjust strategies based on feedback.

Public Engagement

Informing the community, gathering feedback, building trust and fostering transparency.

Identifying and mitigating potential issues, promoting community benefits.

Measuring and reporting our impacts to build credibility and comply with lender and offtaker obligations.

Activities:

- Began holding community bbq events in 2017 in the wind project area
 - Have continued this process into construction – most recent event had over 250 community members
- Fielding inquiries and working with Construction to incorporate feedback into turbine component delivery plan
- Meetings with County & City Managers, Board of Supervisors, Mayors & Village Councilors
- Workforce Development
- Housing

Outcomes and Action Items:

- Reduced opposition due to clear communication about expectations
- De-escalation of landowner and community concerns
- Providing alignment with Environmental and Social Assessment Procedure obligations
- Local Field Manager
- Tribal Engagement Lead

Local Giving - Wind and Transmisson

Building positive relationships and local support.

Ensuring benefits of the project are materialized and long-lasting.

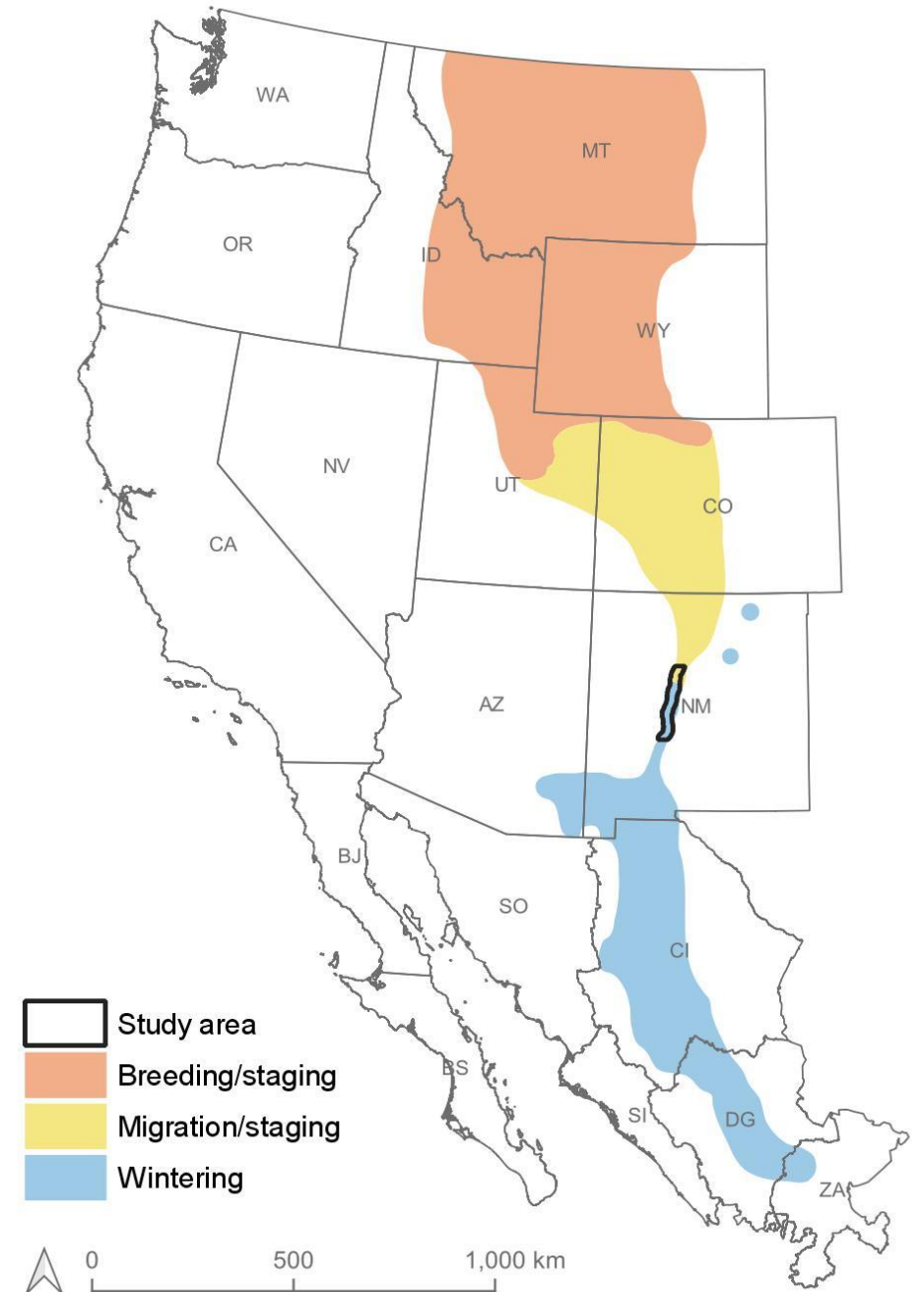
- **AZ County Fairs:** Pinal, Greenlee
- **NM County Fairs:** Valencia, Hidalgo, Grant, Sierra, Socorro, San Miguel
- **Regional Fairs:**
 - SE AZ Livestock Expo
 - Southwestern NM State Fair
 - Eastern NM State Fair
 - NM State Fair
- **Rodeos:**
 - Mountain Gymkhana Rodeo, Corona Days
- **Other:**
 - NM FFA, NMSU State 4-H, Ag in the Classroom, Carrizozo Heritage Museum (NM), and Rex Allen Cowboy Museum (AZ)
 - AZ Boys & Girls Clubs: Sun Corridor Branch & Mountain Branch
 - Grant County Community Foundation Give Grandly Day
 - AAUW-NM Tech Trek STEM Camp
 - Community Foundation of Lincoln County Ruidoso Fire Relief



Key issue: SunZia Transmission had to cross the Rio Grande at a bottleneck in the Sandhill Crane migratory corridor

- New Mexico regularly provides winter roosting and feeding
- Significant environmental stakeholder concerns around project impacts to major sandhill crane populations
- Previous river crossing close to roosting and feeding habitat, considered “worst possible crossing” with advocacy focused on undergrounding at Rio Grande
- Significant trust issues between project proponent and environmental community when Pattern Energy got involved circa 2017, with limited data available to stakeholders

****lesson learned: not all backyards are created equal from a natural resource perspective***



Regular, sustained engagement and increased transparency and trust building

- Began visiting with stakeholders directly
- Established an eNGO working group that met approximately once per month
- Established a larger environmental stakeholder group that met approximately once per quarter with specific subject focuses (research results, overhead-underground crossing analysis)
- Provided early access to material based on stated concerns; focuses responses on stated concerns

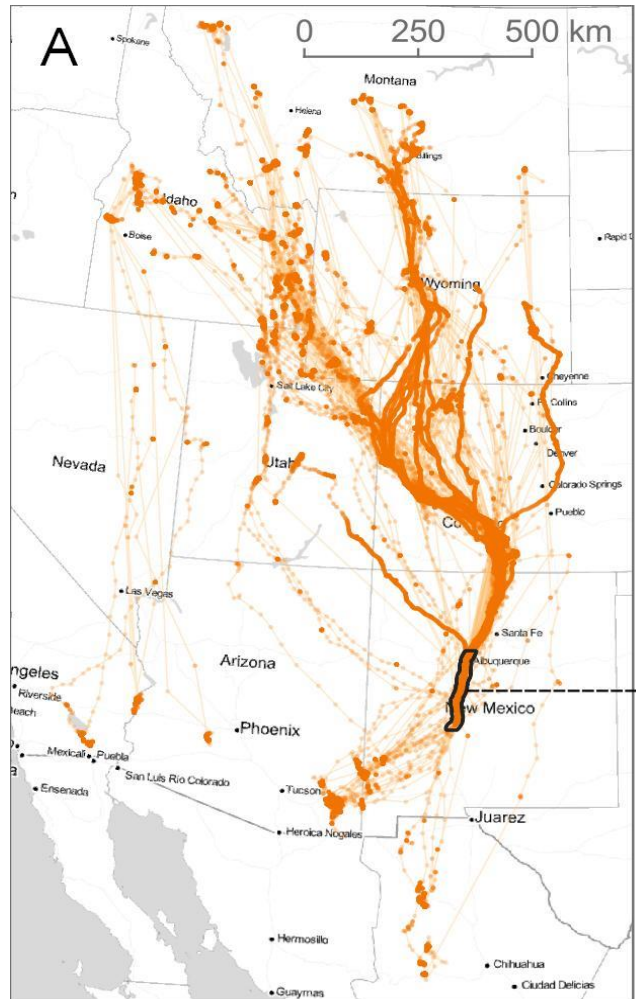


Bring science to bear to address concerns and using science to evaluate project design and mitigation

- Partnered with USFWS on sandhill crane telemetry study, allowing for assessment of relative collision risk and resulting in peer reviewed literature
- Provided funding to extend research into emerging Avian Collision Avoidance System (ACAS) UV lighting technology at Audubon Rowe Sanctuary
- Developed an environmental analysis of relative impacts of undergrounding vs. overhead Rio Grande crossing
- Evaluating river crossings and structure design based on results and identify preferred crossing



Sandhill Cranes in the Middle Rio Grande

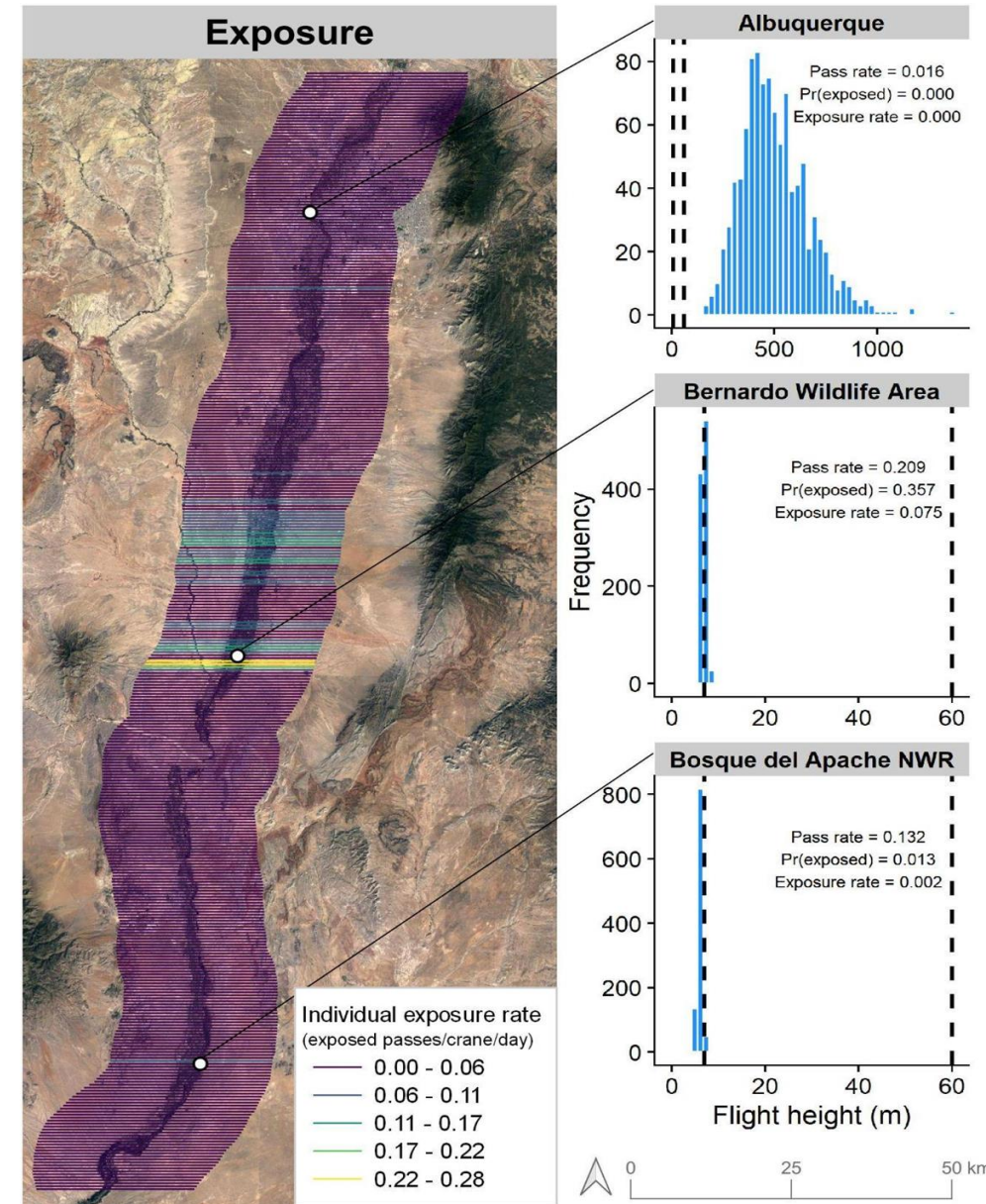


Research Article

Spatially Explicit Assessment of Sandhill Crane Exposure to Potential Transmission Line Collision Risk

Quentin R. Hays , Andrew T. Tredennick, Jason D. Carlisle, Daniel P. Collins, Scott A. Carleton

First published: 20 July 2021 | <https://doi.org/10.1002/jwmg.22100>



Develop minimization and mitigation in partnership with environmental stakeholders and incorporated directly into the NEPA public record

- River crossing selected had both lower collision risk and paralleled existing infrastructure
- Solicited stakeholder input for minimization (crossing locations, use of ACAS technology, bird flight diverter locations) and mitigation (land acquisition and habitat conversion)
- Ensured that stakeholder recommendations and concerns were documented in NEPA public comment process
- Ensured that NEPA record shows project commitment to stakeholder recommendations

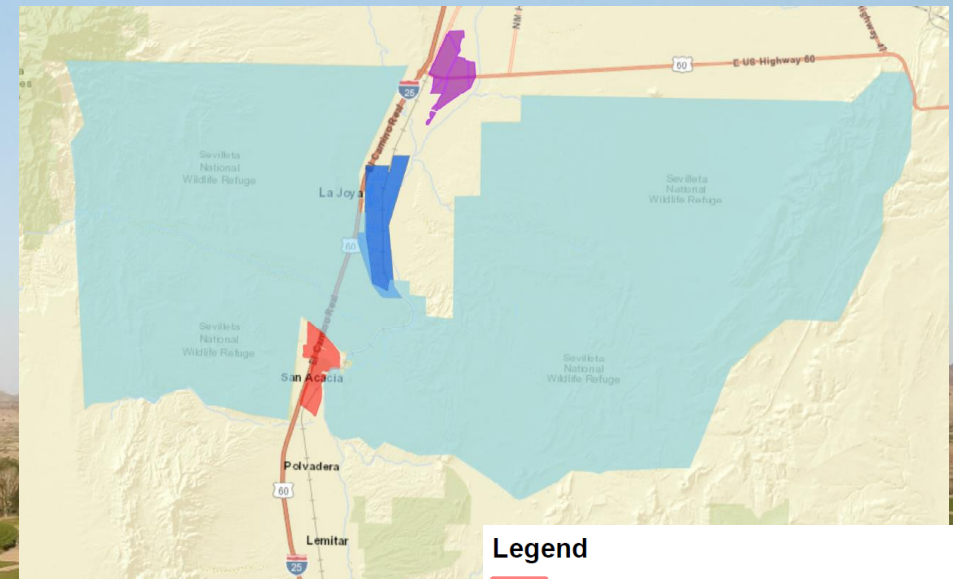


Expanding the Sevilleta National Wildlife Refuge



Indian Hill Farms

- 1,226-acre alfalfa farm with senior water rights
- Located along the Rio Grande adjacent to the Sevilleta National Wildlife Refuge (NWR)
- Convert to functional wildlife habitat managed primarily for wintering waterbirds; eventually incorporate into Sevilleta NWR





Construction Process

Reclamation



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