Appendix F Comments in Entirety

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

epc
DATE RECEIVED
5/3/10

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Doris Felts
ADDRESS: 11843 Lake Wildwood Dr
CITY: Penn Valley
STATE: CA
ZIP: 95946

Organization (if applicable): Windmill Ranchos

Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☐ Yes ☑ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

As an owner of parcel 130, Windmill Ranchos, I submit the following

New Mexico development is crucial to the economy. Developers promote investments in properties such as Windmill Ranchos and are in turn boost the overall economy.

Please protect such projects for our individual properties and the New Mexico growth.

Doris Felts

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAME: Mark Apel
ADDRESS: PO Box 513
CITY: Bisbee, STATE: AZ ZIP: 85603

Organization (if applicable)
Add to mailing list ☐ Yes ☑ No
Withhold personal information* ☐ Yes ☑ No
Receive notification of EIS availability? ☐ Yes ☑ No

COMMENTS:

As a former resident of Cascabel as well as a former preserve manager of The Muleshoe Ranch, I oppose the proposed routes for the transmission lines through the greater Cascabel area. This area is a rich Sonoran Desert ecosystem with desert tortoises, bighorn sheep and a variety of other wildlife that would be impacted by this project. Please use existing, disturbed corridors for the location of this project.

epg
APR 29 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAI

Organization (if applicable)

Add to mailing list	☐ Yes	☒ No
Withhold personal information*	☒ Yes	☐ No
Receive notification of EIS availability?	☒ Yes	☐ No

COMMENTS:

SunZia lines should be kept out of the San Pedro Valley. New power transmission corridors should instead be placed along already established rail + highway corridors.

The construction + maintainance of the proposed SunZia transmission lines would impact water + wildlife resources in SE arizona, already under stress, and undermine property values + eco-tourism opportunities in the area.

epg
APR 29 2010

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eng
APR 27 2010

Route E110 along the S border of Seuilleta NWR - seems to run directly down San Lorenzo Canyon. Any Route in this area needs to be farther south a bit to save this scenic canyon.

Steven Durand

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

epg
APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Lonnie Murguia
ADDRESS: 1301 Leyo Drive
CITY: Socorro, STATE: NM ZIP: 87801

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:
How does this project create jobs or economic opportunities for the areas affected by the route?

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
APR 27 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

Leigh Ann Vradenburg
NAME
101 Bosquecito Rd.
ADDRESS
San Antonio NM 87832
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I do not believe the new proposals address the issues of a river crossing between Bosque del Apache and Belen. Any crossing must be underground to preserve the integrity of the daily flight paths of sandhill cranes and migratory routes for other birds. Routes adjacent to Belen still mar the landscape/viewscape as they come past Socorro and San Antonio. Any new lines between San Antonio and Belen will damage our already struggling farmers and our tourism base that is inherently tied to our open spaces and beautiful scenery. The only acceptable routes remain those that run along the borders of White Sands and cross the river south of Bosque del Apache.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 20

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Mark Sultemeier
ADDRESS: Box 286
CITY: Corona STATE: NM ZIP: 8838

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS: The line thru Bingham is the best for (CLA) Corona Landowner Assoc., but if need be go thru & between the Sevilleta NWR & the Bosque. This needs to happen for the Whole USA

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Barbara Zeltemeier
ADDRESS: Box 286
CITY: Corona STATE: NM ZIP: 88318

Organization (if applicable): CLA
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

S/Bon list

Corona Landowner Assoc.

We are very much in favor of the line thru Bingham but it need be go between the Sevilleta & the Bosque Del Apache

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

epg
APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: MATTHEW MITCHELL
ADDRESS: P.O. BOX 338
CITY: SAN ANTONIO STATE: NM ZIP: 87832

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

THE PROPOSED ROUTE RUNNING N↔S JUST WEST OF BOSQUECITO RD IS TOTALLY UNACCEPTABLE TO ME - IT WOULD MY VIEWSCAPE AND LOWER MY PROPERTY VALUE

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

EPG
APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAME: MATTHEW MITCHELL FOR RIO GRANDE AGRICULTURAL LAND TRUST

ADDRESS: SAN ANTONIO

CITY: STATE: NM ZIP: 87832

Organization (if applicable): RGALT

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

THE RIO GRANDE AGRICULTURAL LAND TRUST (RGALT) HOLDS CONSERVATION EASEMENTS ON NEARLY 400 ACRES OF FARMLAND AND RIPARIAN HABITAT IN THE MIDDLE RIO GRANDE.

PROJECT MANAGERS NEED TO KNOW WHERE OUR EASEMENTS ARE!! WE ARE LEGALLY BOUND TO TAKE LEGAL ACTION AGAINST ~~THESE~~ PROJECTS LIKE THE POWER LINE.

WE WILL PROVIDE INFORMATION TO MICKEY SIEGEL

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAM

ADDI

CITY STATE ZIP

WINDMILL RANCHES
HOME OWNERS ASSOCIATION
Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

I AM ENCOURAGED THAT THE ROUTES WILL NOT DISSECT WINDMILL RANCHES (326 LOTS), AS PREVIOUSLY PROPOSED.

PLEASE CONSIDER ROUTE E10 OR E80, NOT D10. E10 OR E80 WILL MAKE MANY LAND OWNERS VERY HAPPY.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

APR 27 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

CITY STATE ZIP

WINDMILL RANCHES
HOME OWNERS ASSOCIATION
Organization (if applicable)

Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☒ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

VERY INFORMATIVE... AWESOME STORY BOARDS AND INFORMATIVE SPEAKERS.

AS A RESIDENT OF WINDMILL RANCHES, PLEASE CONSIDER THE ROUTE OF E10 OR E80. I KNOW THAT THE OTHER 325 LOT OWNERS WOULD FEEL THE SAME.

PLEASE DO NOT CONSIDER D10 WHICH IS EXTREMELY CLOSE TO A MAJOR RESIDENTIAL AREA.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

N/

AI

CITY STATE ZIP

NM Solar Station, LLC
Organization (if applicable)

Add to mailing list ☑ Yes ☐ No

Withhold personal information* ☑ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Very Helpful. Agent was very knowledgeable.
cleared up many question I had before
I hope this project will complete asap.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Dawn Weaver

ADDRESS: 496 Jones Rd.

CITY: Bingham STATE: NM ZIP: 87832

Cases-Weaver Ranch
Organization (if applicable)

Add to mailing list	☑ Yes	☐ No
Withhold personal information*	☐ Yes	☑ No
Receive notification of EIS availability?	☑ Yes	☐ No

COMMENTS:

Regarding sections A60, A90 & A80. These proposed lines are within 3 miles of our headquarters / home. My children are the 5th generation in my family to live on this ranch. We have approx. 1,200 acres of deeded land + I will not consider any easements or right of ways on my property. We border an environmental study area, so I see the reason to avoid that area. Frequently, Air Force jets + helicopters flip over the ranch, sometimes at about 40-50 ft altitude. We do have desert tort. on the ranch. Not sure what catagory they fall into. PLEASE CONSIDER RUNNING LINES EAST OF MISSLE RANGE!

Thank you.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 22nd Street, Suite 102 | Phoenix, AZ 85016

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Robert Merkel
ADDRESS: 601 Western Ave.
CITY: Socorro STATE: NM ZIP: 87801-4449

Organization (if applicable): Friends of Bosque del Apache
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

1. If the SunZia lines cross the Rio Grande where cranes, geese, etc. fly up and down daily in the winter it should be buried.

2. Please look at possible overhead Rio Grande crossing ~14-15 miles SE of Hatch where the river is in a narrow canyon with NO agriculture. The lines could cross overhead there from mesa to mesa.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

epg
APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: DAN LORIMER
ADDRESS: 300 N DOWNTOWN MALL 2ND FL
CITY: LAS CRUCES STATE: NM ZIP: 88001

Organization (if applicable): SIERRA CLUB
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

ALL CHOICES INVOLVE ENVIRONMENTAL COSTS - THE TRICK IS TO FIND THE LEAST ENVIRONMENTALLY DETRIMENTAL OPTION AND CHOOSE IT!

SEND COMMENTS TO:

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Bill Tafoya
NAME

400 Chaparral Dr
ADDRESS

Socorro NM 87801
CITY STATE ZIP

Casa de Piedras
Organization (if applicable)

Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

In regards to Proposed Route A90 + A60
This proposed route runs Just (approximately) 1.5 miles south of my Ranch. This route is also in the Northern FIX evacuation Range of WSMR.

These routes would greatly affect the value of my ranch not to Mention the hazard to Animals + Airplanes. WSMR flies night missions and day light at very low Altitude. These are Bad enough without ~~the~~ the added hazard of these power lines.

I propose you run the line down D 800 or the E 80 - E 100 ~~or~~ routes. Also E10 ~~is~~ follows hwy 60 which is flatter and a better route.

Thanks Bill Tafoya

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Terry V Babcock
NAME
PO Box 250 33 Tarryall Farm Rd
ADDRESS
San Antonio, NM 87832
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

A-130 + A-140 Route's run right by my house and farm. This power line would be eye soure & devalue property value and make it difficult to sell.

This power line would disturbe all forms of wild life that includes endargered species. ie- (Silvery Minnow, Fly Catcher, Golden Eagles plus migatory birds)

The power company should bury the line. The Ballon Festival would present hasards for people, running into the Power lines.

Terry V Babcock

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Susan Chisum
NAME

33 Tarryall Farm Road
ADDRESS

San Antonio NM 87832
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

We own a 40-acre farm in San Antonio - along the A-130 & A140 proposed route. We built a two-story Victorian house — and running those horrible power lines near my home will definately destroy the view. We put the propane tank in back and buried the electric lines to keep the Victorian house looking aged and in that period. We have animals, chickens, quail, dogs, horses etc. that won't be delighted with power lines. San Antonio is a tiny town and it is inconceivable to me why with all the open space in NM — you would select to run these lines through our town. And I do not believe it will lower costs of electricity - but it will lower the value of my farm.

SEND COMMENTS TO:

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: CHRISTINA CARNAGEY

ADDRESS: P.O. Box 903

CITY: SOCORRO STATE: NM ZIP: 87801

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Conservation easements along the Rio Grande need to be protected.

Migratory Birds need to be protected.

These lines destroy what we have protected for decades

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 27 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

KALE BATSELL
NAME
PO Box 434
ADDRESS
San Antonio NM 87832
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

Socorro County is the second poorest county in NM. It's primary source of income (beside employees at Stallion) is generated by ecotourism. People come here to enjoy the vast scenic vistas. This project has the potential to destroy a major source of income as well as impact a major migratory fly way. I am opposed to the concept of destroying our vistas, impacting our wildlife to benefit Az + CA I see all the "could be" potential. But bottom line is NM will lose a way of life we all treasure to benefit some ones pockets. This concept is a travesty!

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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APR 27 2010 0900

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAME
ADDRESS
CITY STATE ZIP

Beef/landowner
Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☑ Yes ☐ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS: I do NOT WANT THIS powerline to pass through A80/A60 area Bingham to San Antonio, NM route. First of all New Mexico residents receive no benefit by allowing SunZia SW to install 200ft. per line, 1000 ft for 2 lines, 130 ft/160 feet high 1300-1500 feet between structures on BLM, wildlife refuge, private deeded land north or south of Hwy 380 or RC 525 to Stallion Range Center WSMR in order to provide urban/suburban areas of Phoenix, AZ with power to fuel their energy demands. As a private landowner I resist the implication of installation of these powerlines on wildlife, ranchers, Indian artifacts, WSMR air space, scenic beauty, disruption of the eco system in the fragile desert climate to hawks, antelope, cattle, jackrabbits, snakes etc. as a landowner I don't want the ugly humming and sight of powerlines on my open spaces. Open spaces are becoming increasingly rare. Also, I don't want the impact of lower land values in this rural isolated area.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

I DO NOT WANT POWERLINES ON THE Bingham Hwy 380/RC 525 north or south of Stallion Range WSMR installed AT ALL.

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APR 27 2010 0901

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Joseph Coursey
NAME

1217 Calle Del Lago
ADDRESS

Socorro NM 87801
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☑ Yes ☐ No

Withhold personal information* ☐ Yes ☑ No

Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

Keep lines as far North as possible and coming South as far West as possible.
This would protect the most of the different interests.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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APR 27 2010 0902

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAME

ADDRES

CITY STATE ZIP

NM Military Base Planning Commission
Organization (if applicable)

Add to mailing list ☑ Yes ☐ No

Withhold personal information* ☑ Yes ☐ No

Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

I APPRECIATE that BLM considered a 3rd Scoping meeting to REVIEW the transmission route put forthe by the MILITARY, BLM & FISH & Wildlife. this additional northern route reduces the impact of the transmission line for the mission of the Regional Military Installations (WSMR, Kirtland, CANNON AFB, & Holloman AFB and Ft. BLISS). This Northern route should allow for the testing and training that is currently taking place (and that is being planned for this area) to continue on TRACK. The Economic activity of this work is vital, not only to the state of NM, but also to the communities that serve these military bases. Those missions are vital to the NATION and we are constantly reminded that encroachment to the bases could have a negative impact on future missions. The Northern route minimizes the encroachment impact from all the other alternatives.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

APR 27 2010 0903

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Danny Monette
NAME
71 Midway Rd
ADDRESS
Lemitar NM 87823
CITY STATE ZIP

Socorro County Commissioner
Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:
Anything That Runs Through our Valley Should Be UnderGround!

Socorro County Commissioner

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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APR 27 2010

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Jana Svobodova, Jim Platt
ADDRESS: 311 Farm Market Rd, P.O. Box 458
CITY: San Antonio STATE: NM ZIP: 87832

Organization (if applicable)
Add to mailing list ☐ Yes ☒ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

Prefered route ~~the~~ East side of White Sands via Carri 2020

SEND COMMENTS TO:

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APR 27 2010

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: KALE BABELL
ADDRESS: P O BOX 434
CITY: San Antonio STATE: N M ZIP: 87832

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

ABSOLUTELY OPPOSED TO
A 30 A 40 A 80 A 111 A 130
This is NOT ACCEPTABLE

EAST OF RIO GRANDE + SOUTH OF REFUGE
ACCEPTABLE

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
APR 29 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

Albert V. Lannon
NAME
13141 W. Cmo. de Conejo
ADDRESS
Tucson AZ 85743
CITY STATE ZIP

Citizens For Picture Rocks
Organization (if applicable)

Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

No one has answered a basic question — my community (Picture Rocks) has a blue line going through it. What blue line goes through the middle of your community?

The Avra Valley is chockfull of archeological sites, many of them unique, + wildlife. The Tucson Mitigation Corridor, Saguaro National Park, + Tucson Mountain Park would all be severely impacted by the Avra Valley Routes

A caution: Some misguided bureaucrats decided to build a freeway through part of Golden Gate Park

(over)

SEND COMMENTS TO:

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when I lived in San Francisco. We sat down in front of the bulldozers + stopped it. We know how to do that.

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FROM

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Phoenix, AZ 85018

SunZia Southwest
TRANSMISSION PROJECT

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APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

CHUCK SMALLHOUSE
NAME
POB 1540
ADDRESS
ORACLE AZ 85623
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

THE ONLY EFFECIENT METHOD OF GENERATION OF RENEWABLE ENGERY AT PRESENT TIME IS BY WINDPOWER (OR NUCLEAR). SOLAR GENERATION IS WAY TOO INEFFECIENT (15%) & EXPENSIVE.

THE VISUAL AFFECTS OF WIND POWER WILL EVENTUALLY PRE-CLUDE ITS ACCEPTANCE & EXPANSION. POINT OF ISSUE IS THE ~~CONCERN~~ CONCERN OF THE CITIZENS OF MASS. ABOUT THE OFFSHORE WIND FARMS - 8-14 MILES FROM THE NEAREST SHORE.

RENEWABLE ENGERY SOURCES AVAILABLE IN THE NEAR FUTURE DO NOT JUSTIFY A 500KV LINE, LET ALONE TWO. RUNNING ACROSS NM & AZ TO SUPPLY POWER TO SO CA.
THE SOUTHERN ROUTE PARALLEL TO I-10 IS THE ONLY ROUTE THAT IS FEASABLE TO THE CONCERNED PUBLIC. (OUR)

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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CONSIDERATION TO CROSSING THE TOHONO-O'DHAM LANDS SHOULD BE GIVEN & EVEN GOING ONLY ACCROSS, OR WEST, OF THE IRONWOOD MONUMENT.

THE INDIANS (WHO ARE UNDER THE DEPT OF THE INTERIOR) IT CERTAIN WOULD BE AMINABLE TO LEASING A RIGHT-A-WAY. THIS WOULD PROBABLY BRING IN MORE MONEY TO THEM THAN TWO CASINOS - AT NO EXPENSE TO THEM!

FOLD HERE

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Phoenix, AZ 85018

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NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
APR 29 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Chris Eastoe
ADDRESS: 1240 E Seneca St
CITY: Tucson STATE: AZ ZIP: 85719

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS: Specific comments on segment C276.
Proposed segment C276 would deface the central scenic focus of the Cascabel community — the set of cliffs along the west side of the San Pedro river. The cliffs have the following significance:

(1) Unique spectacular scenery — unique in the San Pedro Valley; riddled with attractive slot canyons.

(2) Geology — the cliffs ~~are~~ exist because of the interaction of ancient hot spring systems with basin-fill sediments. The sediments have been re-cemented and hardened by the hot water.

(3) Biology: the micro environments at the foot of the cliffs host a set of species not seen elsewhere at similar altitude.

~~(4) Community~~ The cliffs provide nesting habitat.

(4) Community importance: the cliffs are a central focus

(continued over)

SEND COMMENTS TO:
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point for the Cascabel community. In addition, the more spectacular slot canyons are of spiritual significance to many residents.

I do not understand why areas of "visual ~~sig~~ resource" significance are shown north of C276. The segment cuts right through the areas that are visually significant to the Cascabel community.

This and other segments need to be designed with a view to the sensitivity of local communities.

I will support these comments with a set of photographs that I will send to Adrian Garcia at the BLM.

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4141 North 32nd Street, Suite 102
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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

APR 29 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME
ADDRESS
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☑ No
Withhold personal information* ☑ Yes ☐ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

I am a conservation land owner in the San Pedro River Valley. The Cultural, Environmental and Eco-Economic resources of the San Pedro far out weigh any value. 2 500 KV lines might provide the area, or the State. Irreplaceable Archeology would be lost. A Wilderness area from Sutter Springs Valley to Tucson, Benson to San Manuel. would be fractured by Roads, and thus. Numerous washes / Watersheds subjected to Erosion, and extended ORV use. The San Pedro is a Critical Fly way for Migratory Birds, over half of Bird species are in strong decline due in part to increased collisions with Power lines & towers. The Middle San Pedro River Valley must be considered as a whole, in tact Ecologically

(over)

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integral system. dividing it into it's constituent parts to study the impact of these lines, denies its true value as an irreplaceable Eco system - one of the few remaining in sensitive desert areas of the South West.

Please consider the region as a whole in the EIS. No routes through the length of the SPRV meet any reasonable measure of acceptable impact in trade for Transmission lines.

URBAN Routes should be moved to the top of the list for consideration. 1) Construction in already disturbed/environmentally compromised Areas. 2) Bring Power to Power users.

I found the format of the meeting frustrating and inappropriate for collecting information from the public. There was No Presentation, No opportunity to know who was here - who they represent or what role ~~was~~ they play in the process other than "Bumping into" and Discovering through my own curiosity their Role. Not having a time for public questions & Answers seems like avoidance of Accountability of difficult issues and limits the amount of information citizens can share & glean from each other. This format does a disservice both to the Public (by limiting voice into exchange as well as SunZia — you will know less/glean less information from the process than might have been gained by entertaining questions & Answering in a public Transparent, democratic way. Please include public info sharing - comments, questions & Answers in future meetings,

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

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APR 29 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Jerry D. Mullins
ADDRESS: 5401 E. Placita Deblada
CITY: Tucson, ~~AZ~~ STATE: Az ZIP: 85718

Organization (if applicable): N/A
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

You probably have more "help" than you need. However, the San Pedro Valley appears to be an optimum choice for that region. The valley at one time did have farming & ranching, but water resources have essentially taken care of those industries. Sites are abandon with old irrigation pipe in many areas. The cattle that I see are ~~[illegible]~~ near starving. I am surprised that the Agriculture Dept has not gotten on their case.

Ignore the comments, if you can, of the county Administrator. He is really opposed to any development anywhere for any purpose.

Good luck!

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

APR 29 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

CITY STATE ZIP

HC Human Hiking Club
Organization (if applicable)

Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☑ Yes ☐ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

Representative helpful in explaining maps - however it would have been helpful if maps could have been obtained at presentation! - I'd be very interested on your study results if proposed and evaluated new blue lines - (Blue) in Cochise and Santa Cruz counties!

Thank You!

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Dale Keyes
ADDRESS: 1949 E. Elm St
CITY: Tucson STATE: AZ ZIP: 85719

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

As several other commentators have noted I support the development of facilities which make feasible the connection of renewal fuel-generated electricity to the electric network. However, transmission lines have many adverse impacts. Thus the proposed line should be located in areas of least environmental, cultural impact; in particular, avoid San Pedro Valley. It seems common-sensical to focus on those corridors already disturbed by transportation & industrial development. Specifically, avoid C273, C276, C441 and other northern alignments which encroach on San Pedro Valley and focus on C260/F40 and alignments south of Tucson along I-10 and then following I-10 into Pinal County.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NA

AD

CITY | STATE ZIP

FREEPORT SIERRITA INC.
Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

NO COMMENT AT THIS TIME.

GREAT PRESENTATION ON THE PROJECT

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

APR 29 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

HAZEL Cox
NAME
315 E Elm St
ADDRESS
TUCSON ~~AZ~~ AZ 85705
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

I know this project will have a lot of 'Not In My Backyard!' reaction. However, as a Tucson resident, I would rather have a pylon actually in my backyard than anywhere in the San Pedro River valley. Why the San Pedro would even be considered is beyond me - one of the last undammed rivers, with only a small dirt road going through some of the last undamaged desert areas in the Southwest. It is especially confusing when the already damaged I-10 corridor goes to the exact place the lines are trying to reach. I am so glad that Tucson Route is now being considered! I understand there are difficulties with land ownership and the like, but the damage to pretty much any site in Tucson is already done; power lines through the San Pedro valley would cause damage that potentially would not be healed in our lifetimes - if ever. When you talk about putting the lines through Tucson and meet resistance, PLEASE tell those people about the area you are preserving.

Thank you.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Dean Jones
NAME
P.O. Box 438
ADDRESS
Mammoth AZ 85618
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☒ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

The San Pedro river valley is a major migration corridor for many species of birds and animals. Disturbing this area would be shameful and an insult to future generations. Following I-10 and other developed areas will have more legal issues obviously but much less environmental and political issues.

The Galiuro wilderness in combination with the San Pedro creates such a beautiful valley that to touch it would be such a shame. We need areas to get away from the works of man and get back to nature. Continual development and projects such as this are a major threat to that!

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
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NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010
APR 29 2

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: JUDITH MALEN
ADDRESS: 11680 W. TORTOISE TRAIL
CITY: TUCSON STATE: AZ ZIP: 85743

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Do not go through the Avra Valley, Saguaro National Park, and Tucson Mountain Park. This is a unique possession for Arizona's which cannot be destroyed. It is my understanding that not only is this area a protected Migratory Route, but also a high lightening impact area - a really great area for huge metal poles. This area brings in tourism dollars that we desperately need, this will drives those dollars away. Please reconsider and eliminate any route near these irreplaceable resources. Thank You

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
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NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME
ADDRESS
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☒ No
Withhold personal information* ☒ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

Should not be C 830 environmentally
C 620 sensitive
C 690 Archeological Sites
C 201 wildlife
C 273 beauty
C 170 people
C 450 children
etc homes

I-10 Corridor is better.

SEND COMMENTS TO:
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SunZia Southwest
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NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Laura Lupsy
ADDRESS: 8530 E Green Acres
CITY: Tucson STATE: Az ZIP: 85715

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I have commented to the Bureau about my opposition to using the San Pedro area as a route for this project, which has a direct negative impact on environmental, current ranching lifestyle and animal behavior.
It would seem to me that this project is better suited to use an existing thoroughfare such as I 10 than creating havoc in a pristine area.
On another note, I feel if Phoenix area needs to generate energy then they should promote more solar possibilities to live up to what the politicians are promoting as the "solar" state.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

TOM WAGNER
NAME

4140 N. 44TH ST. #102
ADDRESS

PHOENIX AZ 85018
CITY STATE ZIP

APOA
Organization (if applicable)

Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

USING THE EXISTING I 10 ROW SEEMS THE MOST FEASIBLE AND LEAST COSTLY OF ANY. AND YES IT IS UNSIGHTY - BUT SPEND MONEY TO DEAL WITH THAT RATHER THAN THE HUGE EXPENSE OF BUILDING ROADS OVER DIFFICULT TERRAIN AND VERY ENVIRONMENTALLY SENSITIVE AREAS. FURTHER STUDY TIEING INTO EXISTING GRIDS & ONLY BUILD WHAT IS NEEDED. -

ALL THE ROADS REQ'D TO INSTALL & MAINTAIN THE ROUTES OVERLAND WILL BE A WONDERFUL DRAW FOR ALL THE ATV'ERS WHO WILL FURTHER TEAR UP & DEGRADE THE LANDSCAPE.

SEND COMMENTS TO:
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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

While it is necessary to have powerlines to transmit electricity from any source, including renewable energy, I must express my concern over any route that follows the CAP canal or that bisects or skirts the Tucson Mitigation Corridor. There is already too much going on in the Avra Valley that negatively impacts the ability of wildlife to cross from the Tucson Mts to the mountain ranges further west, specifically the CAP canal & the CAP Recharge Ponds. Besides the sensitivity regarding wildlife migration, there is the concern over the damage to the landscape (both visual as well as physical.) There are too many beautiful parks in the Avra Valley that would suffer from the construction of a 1000 ft corridor & all the huge, unsightly towers. Why not construct more substations, using smaller lines, or using existing corridors.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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0921

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAME: Jacquie Dale
ADDRESS: 6270 N. Cielo Azul
CITY: Bensen STATE: AZ ZIP: 85602

Organization (if applicable):
Add to mailing list ☐ Yes ☒ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

Thank you very much for opening up the scoping process & for adding Tucson routes into the project area as potential routes.

I would urge you to seriously consider running such a transmission line through Tucson rather than the San Pedro River Valley. The San Pedro is a fragile & irreplaceable ecosystem. It also has an unfragmented & well preserved cultural history. There is an irreplaceable archaeological landscape in the valley. A power line would cause both direct & indirect effects on those features. Tucson's cultural sites & ecosystem are already fragmented. If there must be a line, put it through Tucson

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

*Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

0922

APR 2 9 2011

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Shirley Dunne
NAME

P.O. Box 1548
ADDRESS

Arizona City, AZ 85123
CITY STATE ZIP

Eureka Springs POA
Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

The Northern Route through the Aravipa would be a huge mistake. The area is pristine supporting natural plant & wildlife. 500 high voltage lines through this area would open roads in areas that when it rains would destroy all the area around the disturbed ground. with erosion.

There are ranches in that area that have kept the area intact, and all the wildlife & plant life undisturbed. Opening access roads encourage ATV's etc.

My suggestion is to follow lines already in place. Why re-invent the wheel.

I have a home out there because it is pristine! Keep it that way.

SEND COMMENTS TO:

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME

ADDRESS

CITY

Organization (if applicable)

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

My concern would be for the habitat of all animal life as well as the utilization of roads for A.T.V. travel and further deterioration of the prairie environment. Once scared this fragile soil will permanently erode and cause washing and major erosion. Finally, as a landowner property owner on Kendrick road / Kirtland Springs Property there would be the concern for reception around 2 parallel 500KV HOVERT TRANSMISSION lines. Should we need emergency assistance or require reception for other electronic equipment. My suggestion: follow the current power line address without adding anything.

Thank you.

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SunZia Southwest
TRANSMISSION PROJECT

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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☒ No
Withhold personal information* ☒ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

Please, please do not destroy our open areas, wildlife, enviromentally sensitive areas such as the San Pedro, Arayaipa, natural environments. Following I-10 makes the most sense. Arizona is one of the most beautiful and special areas in the world. Please let's not destroy it further.

Thank you.

SEND COMMENTS TO:

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SunZia Southwest
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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Aeyn Edwards
NAME
3347 E. Seneca No. 4
ADDRESS
Tucson AZ 85716
CITY STATE ZIP

N/A
Organization (if applicable)

Add to mailing list	☒ Yes	☐ No
Withhold personal information*	☐ Yes	☒ No
Receive notification of EIS availability?	☒ Yes	☐ No

COMMENTS:

I have two overarching thoughts:

① It makes the Most sense for a new power station to be built Directly between Tucson and Phoenix, NOT ~500 Miles away. Period.

② If this is to be built near Albuquerque, then it should use existing corridors, (Die I-10) Not the San Pedro River.

If Tucson & Phoenix need more power, they should accept the visual, psychological, & environmental consequences of that need. It's Ethical.

SEND COMMENTS TO:

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SunZia Southwest
TRANSMISSION PROJECT

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APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Mike Gray
NAME
2852 W. Gamez Rd
ADDRESS
Benson AZ 85602
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☒ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

One of the big advantages of renewable energy is that it can be created cleanly - so it can be done close to home. Transmission projects that carry power over long distances, hopefully, will soon be obsolete along with large generating plants. I think this project is not what we want ~~as~~ for a cleaner, more practical approach to energy generation.

I think that if it is necessary to move power over a long distance (if!) then it should only be put on a route already agreed upon, such as an interstate where few people are impacted — take this up I-25 or I-40.

SEND COMMENTS TO:

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

RICHARD X. CONNORS
NAME

5630 W. LONE STAR DR
ADDRESS

TUCSON, AZ 85713
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Re: alternative routes proposed for the Sun Zia SWTP in Southern AZ should follow routes that have been already compromised by infrastructure. It is inconceivable that a route is being considered that invades two well-visited National Parks, i.e.: as in F100 F104 F350, F410, F400. Additionally the nationally recognized Desert museum is the (after the Grand Canyon) second most visited ~~sto~~ spot in AZ. Its view shed will be destroyed as will be the view from Gates Pass. It is also clear that the SW area heavily populated with poor + elderly populations will be highly impacted!

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☒ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

Regarding the ~~Alten~~ proposed Alternate route through the Arauaipa valley. My family has been there since 1920s. Beyond the sentimental reasons, the logic for considering this area does not exist. If we are talking impacts to a rich and diverse natural area.

Other more viable routes exist, such as the I-10 corridor. It is already an environmentaly and visually disturbed area.

Thx.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: JAmes FLOOD

ADDRESS: 6025 N. CASCABEL RD.

CITY: BENSON STATE: AZ ZIP: 85602

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I Didn't Like the format of this Sopeing meeting. There should be A Platform for Ques + ANSWERS. The INformation Presented. Was well oncn satreghted. AND could be helped. By specicic Qustions.

J. Flood

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Project Mgr.
Adriana Garcia

SunZia Southwest Transmission Project
Environmental Impact Statement

CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☒ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

* for the benefit of folks who couldn't attend the public meeting

I would like to have the resource maps put on the
* website - including the following:
Aerial Photo
Land Ownership and Jurisdiction
Environmental Sensitivity and Opportunity Summary sensitivity levels
Cultural & Paleontological Resources
Cultural & Paleontological Opportunities & Constraints
Biological Resources
Biological Opportunities & Constraints
Land Use
Land Use Opportunites and Constraints
Visual and Recreational Resources
Visual and Recreational Opportunities and Constraints
Slope

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

Re: Segments F100, F104, F350, F410, F400, F360, F330 F340, F420, F430, F450, F440, F432

I object to the siting of any proposed transmission lines relating to the SunZia Southwest project through the 13 above-listed areas. I live in the area that would be impacted. It is the most ecologically unique and rare Saguaro forest in the world. There is no sane or rational reason that I can imagine that would warrant siting such a project in this sensitive area. Existing infrastructure on the east side of the Tucson Mountains makes much more sense as a location for the lines (along the I-10 corridor). Low income, and elderly, and Native populations would be disproportionately impacted if the project was sited along the above-listed segments.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

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NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Gail Loveland

ADDRESS: 6025 N. Cascabel Rd

CITY: Benson STATE: AZ ZIP: 85602

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I want a Route that utilizes existing utility corridors. It is important that we preserve our Natural & Cultural Resources - this means No Route through the San Pedro Valley.
I want you to think "outside the box" - there are existing routes through Tucson and also along Route 40. How about working with other "power", I've been told collaboration is difficult. But it probably can be the long RUN - Bigger Picture Approach. At least start talking with TEP (Tucson Electric Power). I thank you for taking my concerns.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NA

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

I am opposed to the proposed transmission routes that go through the San Pedro River Valley. This area is the last undammed river in Arizona and an important migratory corridor for birds another to the Western United States. The roads that will be added along with the power lines will have severe ecological effects on the wildlife in this region. The additional developement will negatively change the flow of water and disrupt the habitats of numerous endangered species.

I much prefer the new routes that pass by I-10 / Tucson and appreciate the efforts of BLM to incorporate the opinions of the community in developing these routes. The newly proposed corridors will have less impact on the surrounding environment without putting an undue burden on the engineering of the project.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

0934

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Karen McKelvey

ADDRESS: 932 N 6th Ave

CITY: Tucson STATE: AZ ZIP: 85705

Organization (if applicable): Cascabel Hermitage Assoc

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☐ Yes ☒ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS: Cascabel Working Group

The CWG has done a great job of bringing to the attention of SunZia + involved parties the myriad reasons why a San Pedro Valley route would be a terrible degradation to what is one of Arizona's precious ecological areas. Please add my voice to those who oppose any San Pedro Valley route.

As a hospice nurse in Tucson I use this peaceful, beautiful valley with it's magnificent vistas to restore my spirit, in order to do the difficult work of companioning the dying. There are few places left anywhere that contain the solitude present there. Let the noise + towers follow the highways if even at greater monetary expense.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: BETTY WAGNER

ADDRESS: 4140 N. 44th ST #102

CITY: PHX STATE: AZ ZIP: 85018

Organization (if applicable): (APOA) ARAVAIPA PROPERTY OWNERS ASSOCIATION

Add to mailing list: ☑ Yes ☐ No

Withhold personal information*: ☐ Yes ☑ No

Receive notification of EIS availability?: ☑ Yes ☐ No

COMMENTS:

IF THIS IS TRULY A GREEN STORY FOR "GREEN POWER" THAN CHOOSE A "GREEN ROUTE" ONE THAT DOES NOT DENEGRATE THE WILDERNESS EXPERIENCE FOR ARIZONA RESIDENTS NOW AND FOR A LIFETIME.

NO ROUTES THRU THE SAN PEDRO
" " NEAR ARAVAIPA WILDERNESS
UTILIZE I-10 ROUTE!

THANK YOU
BETTY W

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

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COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☑ Yes ☐ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

STAY OUT OF THE SAN PEDRO VALLEY!!!

You have an existing highway system, probably one that has already been considered ugly by many standards. USE THAT!!!

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

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APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

FRANCES MEYER
NAME
P.O. BOX 714
ADDRESS
WINKELMAN, AZ 85192
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

This powerline should completely avoid all the routes north of the Catalina Mts. Those routes would adversely impact the ecological and cultural resources in that area. Not only would it cause environmental damage associated with the San Pedro Valley, but those routes would fragment a large block of State Forest and private lands + therefore harm the ranches in that area. This project is touted as a "green" project. If it is too expensive to avoid environmentally sensitive areas, then do not build the line. Otherwise, we recommend your utilizing the I-10 corridor or similar southern route.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Chester F. Phillips

ADDRESS: 924 N. 6th Avenue

CITY: Tucson STATE: AZ ZIP: 85705

Organization (if applicable): Cascabel Working Group

Add to mailing list: ☑ Yes ☐ No

Withhold personal information*: ☐ Yes ☑ No

Receive notification of EIS availability?: ☑ Yes ☐ No

COMMENTS:

Under no circumstances should any SunZia lines pass through the San Pedro Watershed! The San Pedro Watershed shelters numbers of birds, fish, mammals, and other species virtually unparalleled in the United States. The San Pedro is one of the most important migratory bird corridors in North America, while collision or electrocution by power lines is the second greatest human-related killer of birds each year in the U.S. The list of threatened, endangered and candidate species in the San Pedro Valley is long, and many of them would be adversely impacted by habitat fragmentation, erosion, stream sedimentation, spread of invasive species along access roads, etc. I will be providing more extensive, and scientifically documented comments in May, but priority for this, and all, new transmission project should be given to routes following I-10 or through other disturbed areas. The route following the Gila & Hassayampa washes east & north through Tucson seems especially promising. You might also look again at a northern AZ route that would pass through the Apache Reservation. The lower San Pedro Watershed should be a candidate for landscape scale conservation, not for fragmentation by SunZia lines. We will never stop fighting to keep these lines out of the San Pedro.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Jodi Wert
ADDRESS: 924 N. 6th Ave.
CITY: Tucson, STATE: AZ ZIP: 85705

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☑ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I oppose the proposed routes for the SunZia Southwest Transmission Project in Southern Arizona through the San Pedro River valley, or in any other area that would be irrepairibly impacted environmentally, ecologically, + culturally.

The BLM holds a conservation easement on several properties to protect its ecological and cultural values. As a land owner in Cascabel (130 acres at the mouth of Hot Springs Canyon) (w/conservation easement), I am concerned that running a 1,000 ft. utility corridor through the area is inconsistent with the BLM's own stated conservation goals in the San Pedro River Valley. New roads, development, and infrastructure would cause irrepairable damage to this fragile area. Jodi Wert

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

June 10th.

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

CITY STATE ZIP

Southern AZ Hiking Club
Cochise Trails Association
Organization (if applicable)

Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☒ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

As a member of two user groups of BLM land (recreation), I am in need of two copies of maps detailing proposed routes. I need hard copy, large maps. Maps on a web site cannot be used for discussion and comment. I discussed this with Paul Trenter. These are needed in time to provide comments by June 10th. The following maps are needed.

Visual and Recreational Opportunities & Constraints
Visual and Recreational Resources
Tucson Area Land Use Constraints
Land Use Opportunities & Constraints
Land Ownership & Jurisdiction
Project Study Area AZ & NM

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

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APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Richard + Helen Henderson

ADDRESS: 5707 E. 6th St

CITY: Tucson STATE: AZ ZIP: 85711

Organization (if applicable): Saguaro Juniper Chap.

Add to mailing list: ☒ Yes ☐ No

Withhold personal information*: ☒ Yes ☒ No

Receive notification of EIS availability?: ☒ Yes ☐ No

ignore mistake

COMMENTS:

Building this operation along the San Pedro River valley would be an ecological disaster of the worst order. For further details concerning the ecological qualities of the area, see this website:
http://www.sanpedroriervalley.org
— focus on the "New, Expanded version"

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

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NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

MICHELLE FERMAN
NAME

2710 N. BAXTER AVE
ADDRESS

TUCSON AZ 85716
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

HONESTLY, I WOULD PREFER AN ENERGY SHORTAGE IN MY HOME TO THE DAMAGE THAT COULD BE DONE TO THE SAN PEDRO RIVER VALLEY. I REALIZE THE POSSIBLE BENEFITS THAT COULD COME FROM CONNECTIONS TO RENEWABLE ENERGY SOURCES YET I CANNOT COMPREHEND HOW THOSE BENEFITS COULD OUTWEIGH THE COSTS FROM THE DEVESTATION OF A FRAGILE ECOSYSTEM. ONCE THE PYLONS WOULD BE PUT IN PLACE THERE WOULD BE NO RESTORATION. OUR DESERT HAS ALREADY BEEN DAMAGED ENOUGH. I WOULD PREFER TO PRESERVE THE LITLE PIECES WE HAVE LEFT. IN TODAYS WORLD THERE IS VERY LITTLE LEFT TO NATURE. THE SAN PEDRO IS A KEY HABITAT FOR MANY SPECIES THAT NOW HAVE NO WHERE ELSE TO GO. WITH SUCH A FRAGILE ECOSYSTEM, EVEN IF NO ONE WERE TO USE THE ACCESS ROADS AND MAINTAIN THE PYLONS THE DESERT WOULD NOT RECOVER WITHIN MY LIFE TIME. PLEASE FIND ANOTHER ROUTE THAT WOULD HAVE LESS DEVESTATING CONSEQUENCES.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

0943

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

KIRSTIN NEFF
NAME

1733 E WAVERLY ST
ADDRESS

TUCSON AZ 85719
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☑ No

Withhold personal information* ☐ Yes ☑ No

Receive notification of EIS availability? ☐ Yes ☑ No

COMMENTS:

After having reviewed the information about the project presented here today, I believe it makes the most sense to choose one of the alternatives that closely follows the existing I-10 corridor and skirts Tucson to the south. This would minimize the impact on important natural resources in Southern Arizona, including the San Pedro Valley and Aravaipa Valley & Canyon. Constructing the transmission line through these sensitive natural areas would unnecessarily expose them to habitat degredation and future development, forever damaging them and diminishing their value as pristine refuges from the city.

SEND COMMENTS TO:

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

WE LIVE IN A SUBDIVISION ABOUT 4 MILES FROM ROUTES 620 AND 690 AND THE POWER LINES WOULD BE EASILY VISIBLE FROM OUR HOUSE. (WE LIVE IN SEC 1 TWS 9S RANGE 12E - PINAL COUNTY.)

BOTH ROUTES ALSO CROSS DEEDED LAND OWNED BY WILLOW SPRINGS PROPERTIES, LLC (6400 ACRES)

RUN THE LINES ALONG HWY 79 OR I-10

THANK YOU.

SEND COMMENTS TO:

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

0945

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Monica Stephens
ADDRESS: 924 N. 6th Ave
CITY: Tucson STATE: AZ ZIP: 85705

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Please avoid any route through the San Pedro. Both the environmental and social impact of a route through the San Pedro would be devistating. If a route is approved please ensure it is along the I-10 corridor. I personally prefer no transmission route accross Southern Arizona as I believe we can produce our own energy and do not need to rely on Power from New Mexico. This project does not seem worth the environmental devistation it will cause, there are better and more beneficial uses of our public lands.

Thank you,

– Monica Stephens

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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944p

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

0946

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Jakelynn

ADDRESS: 929 N. 6th Ave.

CITY: Tucson, AZ 85705 STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

~~I think~~ If you put up power lines in cascabel it will make more places erode, ~~and~~ kill alot of birds and let invasive spisies in. Cascabel wont be cascabel if you put your power lines up in it.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

0947

epg

APR 29 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Please use existing corridors as they have been disturbed already. The San Pedro River valley should be avoided at all cost.

Thanks-

Jim Flood

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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948

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: NORM JOHNSON
ADDRESS: 590 WINDMILL RANCH RD
CITY: ANCHO STATE: NM ZIP: 88301

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

We much prefer the routing through the northern route E10 and E80
The route disturbs fewer people

epg
MAY 05 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

EPG
MAY 05 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME

ADDRE

CITY STATE ZIP

property owner
Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☑ Yes ☐ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

Power transmission lines may be necessary for future but it would be better to run power lines along existing roadways instead of ruining pristine landscapes or natural habitats and archeological interests.

i.e. would think the power lines should go along existing utility easements & power transmission lines at a minimum impact on the environment. The "F-20" path along the railroad or "F-30" along the highway seem to be most logical

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Brian Powell
NAME
539 E. Roger Rd.
ADDRESS
Tucson AZ 85705
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☐ Yes ☑ No
Receive notification of EIS availability? ☐ Yes ☑ No

COMMENTS:

I oppose the proposed routes through the Sand Pedro Reva Valley. The San Pedro is a national treasure that must not be the location of this project. As one of the last undammed rivers and home to hundreds of species of wildlife, the proposed routes would further threaten this jewel of an area. Instead, I urge support of the route along existing rights-of-way near to Tucson, where I live.

EPG
MAY 06 2010

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☑ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Routes E10 and E80 are most favorable for me.
Route A30 is less desireable for me.
Route D10 is also less desireable for me.

MAY 10 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Thomas V. Orum/Nancy Ferguson
NAME

2018 W. Los Reales Rd
ADDRESS

Tucson AZ 85746
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☐ Yes ☒ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

See Comments Attached

epg
MAY 11 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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epg
MAY 1 1 2010

Comments on the SunZia Southwest Transmission Project
Environmental Impact Statement
May 8th, 2010

Thomas V. Orum & Nancy Ferguson
2018 W. Los Reales Rd.
Tucson, AZ 85746

We attended the scoping meeting regarding the SunZia Transmission Project held on April 29th at the Holiday Inn on Palo Verde Rd in Tucson, AZ. Saguaro Juniper Corporation has donated conservation easements on its deeded land in the San Pedro Valley to The Nature Conservancy because of the land's environmental importance. Apparently to avoid lands with conservation easements, the new proposed SunZia routes go around the deeded land in Sections 7 and 8 T13S R20E either to the north and east or to the south and west – staying on Arizona State Land (Routes C301-C331, C310-C311-C331, C275-C321-C341). This ignores the fact that the state land is as important environmentally as the adjacent private land with conservation easements. In particular, route C301 crosses directly over Willow Spring (which is not on the topo map, but is an important water for wildlife). Willow Spring is in Sierra Blanca Wash just downstream from Hackberry Spring and Sierra Blanca Spring, both of which are shown on the Soza Mesa 7.5 min Quad. Together the three springs form very important riparian habitat and make Sierra Blanca Wash an important wildlife corridor. After crossing Sierra Blanca Wash the line would go through a beautiful and unique basin which we call either the Notch Basin or Henderson Basin. This basin drains through an unusual geological feature we call the Notch into Pool Wash. C301 apparently would go either right through or adjacent to the notch. There are two other intermittent springs, not shown on the topo map (Cottonwood Spring and Muleshoe Spring) that enrich the entire area biologically. Essentially the entire area traversed by C301, C311, and C331 around Sierra Blanca Peak from Sierra Blanca Wash to Hot Springs Canyon is complicated geologically and rich biologically. It should be avoided in route selection. From there C331 crosses Hot Springs Canyon above the Yellow Cliffs in an area known as a nesting area for Black Hawks, a species which the BLM recognizes as a species of concern. So, clearly the proposed route on the state land north and east of the Section 8 conservation easement land is unacceptable environmentally.

The route south and west of the Section 8 land C321-C341 is also problematic. It too would have to cross Sierra Blanca Wash and then Hot Springs Wash. It then threads its way through the west side of Section 7 in a narrow strip of state land (1/4 mile wide) between the Saguaro Juniper land which has a conservation easement on it and the Cascabel Hermitage land which has a conservation easement on it. The state land is clearly no less important biologically than the adjacent private land. C275 and C310 converge on Sierra Blanca Wash at a point where the slopes are steep and the impact of the riparian area immediately upstream is still strong. Along the C321-C341 route is a strip of state land where we have a 10-acre saguaro study plot in which we have mapped and measured saguaros. We have found that it contains an exceptionally large number of small saguaros. In addition, the proposed route south and west of the Section 7 and 8 lands crosses an archeological site.

Not only will the towers and lines cause an adverse environmental impact, but also the access roads for construction and maintenance will multiply the damage. Further, the access roads will attract off road vehicle use that will damage the land and increase erosion. Note that the state lease lands in the Hot Springs Canyon/Paige Canyon corridor from the Muleshoe to the Rincon Mountain, which all of the proposed SunZia lines through the San Pedro Valley cross, are proposed for conservation status on the State Trust Land Reform map (see http://www.land.state.az.us/alris/transfers/Conservation09 /SE.pdf) that will likely go before voters in November 2010. The selection of these lands underscores their biological importance. Power corridors through such lands are not appropriate.

These small examples are representative of a larger theme which is that it is very important that the state lease land in the San Pedro Valley not be undervalued. There is a tendency to say such land is "only" state land and is inexpensive. Since economics is one of the factors in the route consideration I would like to emphasize my concern that the state land in the San Pedro Valley may be systematically undervalued economically and the urban and semi-urban land elsewhere systematically overvalued – especially if looked upon in the long term taking into account ecosystem services and environmental connections. It is crucial that the environmental impact statement not undervalue the long-term economic importance of the state lands in the San Pedro Valley and the unique services they provide.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

MAY 13 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NA
AD
CITY STATE ZIP

WINDMILL RANCH HOMEOWNERS ASSOC.
Organization (if applicable)
Add to mailing list ☒Yes ☐No
Withhold personal information* ☒Yes ☐No
Receive notification of EIS availability? ☒Yes ☐No

COMMENTS:

AS OWNERS OF PROPERTY AT WINDMILL RANCH, WE WOULD LIKE TO EXPRESS OUR PREFERENCE FOR ALTERNATE ROUTE E10 AND E80 FOR THE SUN ZIA PROPOSED TRANSMISSION LINES.

WE STRONGLY OBJECT TO ROUTE D10 AND A30

ROUTES REFERENCED ARE PER LATEST MAPS OF PROPOSED ROUTES DATED APRIL 22, 2010.

Thank You

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
MAY 17 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME ALLAN JACKSON
ADDRESS 11581 N TORTOISE TR
CITY TUCSON STATE AZ ZIP 85743

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

My wife and I are very concerned that the Transmission line will be pushed through because $$$ talk.

Talking of which, to destroy the beauty of the Sonaron Desert in this region is a sacrilidge.

Desert Museum - Tucson Studios
Saguaro Nat Park - Tucson Mt Park
are just a few of the things that make this are special and the choice of millions of visitors per yr. Not to see Power Lines. AJ

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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COMMENT: My name is Chris Eastoe, C-h-r-i-s, E-a-s-t-o-e. So I'm a resident of Tucson, but my partner and I have property in Casterville (phonetic). And I have a really specific thing I want to address, that is the Segment No. C276 which cuts across the San Pedro River right in the Casterville community. The proposed route for that is very problematic to me and other people in the community because it carves up one of the principal scenic focuses of the community.

There's a set of rather spectacular cliffs that the river has cut into the basin filled sediments, west side of the river and east side. The sediment goes straight up the cliffs, so they put a road up the cliffs. It's what you see as sort of the principal identifying feature of that area as you drive through Casterville.

Scenically, it's unique through the San Pedro River. There are very few places where the river cuts high cliffs like that into the valley sediments.

Biologically, it's a highly special place because there are micro environments at the foot of the cliffs and then in the slot canyons that cut into the cliffs. The slot canyons, by the way, are also part of the scenic value.

Geologically, it's very interesting because those cliffs are in places where there's been ancient hot

spring activity that's hardened the sediments up.

And then culturally, apart from just being a scenic focus, there are many people who regard those slot canyons as sort of spiritual places.

So this is a very, very special area to the community, not just to me, but to the community as a whole. And I very badly do not wish to see that carved up or disfigured by having a tower up on it. If they do put a tower up on top of the cliffs, they will no doubt build a road up the cliffs so that they can service the line as it goes over.

(The meeting concluded on April 29th, 2010, at 8:00 p.m.)

From: Karen Christensen
To: NMSunZiaProject@blm.gov
Subject: Opposition to Avra Valley Routs
Date: 04/21/2010 08:29 PM

Dear sir/madam:

I live in the Avra Valley and operate a vacation rental on 10 acres of beautiful desert. I have heard that there are plans to put a power line up the Avra Valley. This is a very troubling proposal and I am totally opposed to it. Not only would it be a major disruption to our views, but it would have a damaging impact on my rental property business. Guests constantly remark on the sunset views to the west, the sunrise over the Tucson Mountains and the general sense of quiet beauty on the western slopes of the Tucson Mountains. The Arizona Sonora Desert Museum is located here for a reason -- the unspoiled beauty of this area.
Please do not destroy this unique desert habitat Use existing routes for power transmission, don't spoil more desert.
Thank you.

--
Karen Christensen
1400 N. Camino del Sapo
Tucson, AZ 85743
520-908-3170
www.tucsonsunsetcasa.com

From: Joyce Gates
To: NMSunZiaProject@blm.gov; Joyce Gates; Lisa Ellis; B J GATES
Subject: our comment
Date: 04/19/2010 08:51 PM

We have lots 88 and 89 in Windmill Ranches. Our son has lot 87 and our daughter owns lot 86. Our son plans on retiring there in a few years. We do NOT want this transmission line any where near our property. It will totally ruin our views, be a nuisance, etc. Please do not put it any where close to our land.

Sincerely,
Bill and Joyce Gates
1013 Utah Street
Clovis, NM 88101
575-762-5022
575-799-4615

From: Joyce Gates
To: NMSunZiaProject@blm.gov; B J GATES; Lisa Ellis
Subject: Transmission lines
Date: 04/18/2010 09:40 PM

We are totally against having this go any where our property at Windmill Ranches. We and our children own lots, 86,87,88 and 89. We wanted to attend this meeting but will be unable to do so. Please do not put this line where people are planning on retiring in the future. It will totally ruin our property.
Sincerely,
Bill and Joyce Gates
1013 Utah Street
Clovis, NM 88101
joyceg@plateautel.net
575-762-5022
575-799-4615

From: MIchael Scofield
To: NMSunZiaProject@blm.gov
Cc: 'Friends of the Bosque'
Subject:
Date: 04/17/2010 11:06 AM

Hello, NM SunZia Power Lines Project Workers,

All of our friends in Socorro, San Antonio, and at the Bosque favor locating the mile-wide transmission corridor at the southern end of the White Sands Missile Range. They say it's the least populated alternative, minimizing the effect on inhabitants (people and wildlife), as well as on tourists.

So that's what we're in favor of, too.

Cordially,

Michael & Noreen Scofield
Friends of the Bosque del Apache NWR

From: logan@bookwish.org
To: NMSunZiaProject@blm.gov
Subject: Socorro scoping meeting
Date: 04/16/2010 03:25 PM

Dear BLM,

Will it be possible to obtain or purchase video, audio, or written transcripts of the Apr. 27 Socorro scoping meeting for the SunZia Southwest Transmission Project? I am currently in the D.C. area and unsure whether I will be able to attend, but am interested in the discussion.

Thank you very much and best regards,

Logan Kleinwaks

From: Jim Cook
To: B LM Adrian
Subject: Sun Zia Project
Date: 04/16/2010 02:49 PM

Dear Adrian Garcia:

We are writing concerning the project of yours that is proposed to go right thru the center of Windmill Ranch.
When we bought our property 7 years ago we thought we were buying a place that was quiet, natural and would be conserved for all to enjoy.

If your company puts a huge power line thru the property all of that beauty will be gone. We do not understand how a company would want to do that. We realize that at the moment the ranch just looks like pretty much vacant land but there are many property owners and your plan will change the entire ranch forever. Could you please not do this.

Nobody would want to live by or under those lines and nobody wants to look at them everyday.

Sincerely, Pam and Jim Cook

From: Stantonmail@aol.com
To: NMSunZiaProject@blm.gov
Subject: Public comment
Date: 04/15/2010 07:15 PM

To Whom It May Concern:

My wife and I have been visiting the Bosque del Apache for years. We love this place, and we're very concerned to hear about the possible erection of huge transmission lines for the NMSunZiaProject. Our concerns are two-fold: the effect of this project on the tens of thousands of birds and other wildlife that use the Bosque as their refuge; and the potential adverse impact of the project and its visual blight on tourism and, thus, the economy. We understand the need for energy transmission, but we are opposed to the placement of transmission lines through or adjacent to the Bosque.

Thank you for considering our comments.

Bill Stanton
Mitigation Specialist
PO Box 10154
Santa Fe NM 87504-6154
(505) 955-0909

From: Rick/Susan Barclay
To: NMSunZiaProject@blm.gov
Subject: expansion area corridors
Date: 04/15/2010 10:49 AM

Dear BLM,

I live on Valley Loop Road in Polvadera, Socorro County. How can I find out (prior to the Apr 27 scoping meeting) whether my home and neighborhood might be affected by the SunZia SW Transmission Project, and if affected, how so?

I don't want to go to that meeting without sufficient preparation, and the map presented in the 4/14 El Defensor Chieftain is not much help. Specifically, I need to know whether transmission lines (or whatever) might be placed near my home and affect property values in my area.

Thank you.

Regards,
Rick Barclay

From: KENMCCOOL@aol.com
To: NMSunZiaProject@blm.gov
Subject: Request for more specific map - SunZia newly proposed route through Arizona
Date: 04/13/2010 06:49 PM

Please provide or point us in the direction of a better map illustrating the newly proposed route through Arizona. Due to scale of posted map, it is difficult to determine proximity of considered route to sensitive areas that would be highly impacted with such construction.

Mary McCool, Chair
Community Watershed Alliance
Benson, Arizona, 85602
watergroup@aol.com
520-609-2738

From: alan solomon
To: NMSunZiaProject@blm.gov
Subject: PLEASE Do Not Mess With The Birds coming to the Bosque Del Apache!
Date: 04/09/2010 02:27 PM

Place the power lines away from the bird traveling corridors PLEASE!
New Mexico has plenty of OTHER LAND.
Run it across some of the millions of acres of empty military lands
BUT Please Don't Mess With The Bird Flight Corridors.
It's time for the BLM to think about other things besides Money!
Sincerely,
Alan & Olivia Solomon
2217 Bright Star Ave.
Las Cruces, NM 88011
e-mail: solomonpix@aol.com

From: Chester F Phillips
To: Adrian Garcia; Adrian Garcia; NM_FOIA@blm.gov
Cc: Pearl Mast and David Omick; Jesse Juen; Robin Silver
Subject: Continuing BLM-SUnZia meeting minutes request
Date: 04/06/2010 11:01 AM

Dear Adrian,
Following upon my request made January 22, 2010, for the minutes of all meetings the BLM has participated in related to the SunZia Southwest Transmission Project since January 12, 2010, which is the date of the last meeting for which we have received the minutes. In addition, I would like to request that I be mailed or emailed the minutes of all SunZia related meetings the BLM participates in subsequent to this request. This last step should make gathering the meeting minutes significantly easier for you and your staff as well as for the Cascabel Working Group. You could simply add us to any email and/or mailing list to which meeting minutes are already sent out.

On behalf of the Cascabel Working Group, I would also like to thank you for the previous minutes you sent us. We very much appreciate your openness in sharing relevant information. Please do let me know that you received this email and whether there is anything else I can do to facilitate this request. Feel free to email or call me at the number below. -Best Regards, Chet Phillips

--
Chester F. Phillips
Co-Chair, Cascabel Working Group
Ph. D. Student/ Research Assistant
Arid Lands Resource Sciences
cfp@email.arizona.edu
(520) 235-2020

From: Stephen Pociask
Reply To: Stephen Pociask
To: NMSunZiaProject@blm.gov
Subject: SunZia
Date: 03/22/2010 07:01 AM

Has there been any estimate of the cost (investment) of the SunZia tranmission project? I am looking for a rough estimate of: 1) the capital investment to put everything in working order. Do you know or can you refer me to a document with this information. I am doing a study on various transmission projects and would like to show the relative economic value of these projects.
Thank you,
Steve Pociask
President
The American Consumer Institute
Center for Citizen Research
1701 Pennsylvania Ave., NW, Suite 300
Washington, DC 20006
(703) 471-3954 direct line
(703) 282-9400 cell
steve@theamericanconsumer.org

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This email may be privileged and/or confidential, and the sender does not waive any related rights and obligations. Any distribution, use or copying of this e-mail or the information it contains by other than an intended recipient is unauthorized. If you received this e-mail in error, please advise me (by return e-mail or otherwise) immediately.

From: Henry Robert Paul
To: NMSunZiaProject@blm.gov
Subject: Windmill Ranches
Date: 03/10/2010 10:08 PM

Adrian,

A few of us from Windmill Ranches went to the meeting held last Oct. 27, 2009 in Alamogordo, NM. Everything was still up in the air then, and nothing definitive was decided as to where the transmission lines would be erected (in relation to Windmill Ranches). I was just touching bases to see if there have been any new developments yet. At the meeting last October it was suggested that we (Directors and Residents of Windmill Ranches) could have a meeting with some representatives of the Sun Zia project at the Town Hall in Carrizozo to discuss any new developments or decisions that have been made in the Spring. Let me know if any thing has changed or if there have been enough developments or decisions that would affect our area. If there has, and anyone would like to discuss the developments with us, then let me know and I will reserve the Town Hall preferably on a Saturday during any month you choose. If not, let me know so that I can inform everyone in our newsletter, that no new developments have been made.

Thank you,

Paul Henry
Director
W.M.R.H.O.A.

From: abowers@tiedesline.com
To: NMSunZiaProject@blm.gov
Subject:
Date: 03/03/2010 04:22 PM

Adrian,

I have reviewed information concerning the SunZia Transmission Project as proposed. I am interested in learning more about the construction of the transmission lines and how or who will do the construction. Will it be put out for bid/ or notifications to only approved contractors / vendors. Please advise how I can get more information concerning this project. I am a High Voltage Electrical Contractor and interested in the project.

Thank you,

Amy Bowers
Tiede's Line Construction
440-281-0861
abowers@tiedesline.com

From: Tony Williams
To: NMSunZiaProject@blm.gov
Subject: Route maps
Date: 02/22/2010 11:19 AM

Dear Mr. Garcia:

I am a researching the proposed routes for the transmission line in where it crosses the Rio Grande Valley near San Antonio. Do you have any maps available on a smaller scale that would give me more precise detail about where the line is proposed to cross the valley? Thank you.

Anthony J. Williams, Attorney at Law
3211 University Blvd SE A
Albuquerque, NM 87106
505-242-7707 (Office)
505-242-6472 (Fax)
505-228-7131 (Cell)
tony@williamsadr.com

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From: Craig Mollard
To: NMSunZiaProject@blm.gov
Subject: SunZia Transmission Line Project
Date: 02/19/2010 02:46 PM

Ms. Garcia,
My name is Craig Mollard and I'm with Geo-Marine, Inc. here in El Paso, TX.

I am very much interested in getting some information on the SunZia Transmission Line Project. I have been on the website and have read and/or looked at the various articles, but what I'm really trying to find out is how we may get involved with this project to support/supply you with archaeological and cultural resource services.

As an aside, we are recent awardees of the BLM IDIQ contract for archaeological and cultural resources, don't know if that helps either one of us, but just an FYI.

Thank you for your time, and look forward to hearing back from you.

Craig Mollard
Operations Manager
Geo-Marine, Inc.
A Subsidiary of Applied Research Associates, Inc.

Ph-(915) 585-0168
Fax-(915) 585-2153
cmollard@geo-marine.com

From: Aldeming@aol.com
To: NMSunZiaProject@blm.gov
Subject: Protect San Pedro
Date: 02/19/2010 07:04 AM

Please find a less environmentally sensitive area for the power line. The San Pedro and proposed area for the power line will do irreparable damage to our last haven for many many species and our last hope in the region for demonstrating that we value the beauty of the Earth as much as we do our lightbulbs.
Alison Deming

Acting Head, Department of English
Professor, Creative Writing
Department of English
University of Arizona
Tucson, AZ 85721
520 626-0799
www.alisonhawthornedeming.com

From: Carrol Teel
To: NMSunZiaProject@blm.gov
Subject: Project Status
Date: 02/18/2010 04:05 PM
Attachments: teel.vcf

Adrian, I live on Bosquecito Road in Socorro County in the proposed path of the SunZia transmission lines. I had not heard about the project until recently. Having searched the internet for info on the project, I cannot find the current status. Please let me know or point me to a source of current info.

Thanks.

From: Babs Soto
To: NMSunZiaProject@blm.gov
Subject: SunZia project location opposition
Date: 02/14/2010 07:06 PM

It would be a travesty to run the lines through the San Pedro Valley. We need to protect our environment for our water and our wildlife. When is enough for man to make money, and at who's expense....our natural desert beauty and our endangered species along this corridor. We have setup laws to protect this area...but it seems making money for this company is all that matters, and to heck with our water sheds, wildlife and maintaining our desert habitat.

PLEASE DO NOT LET THEM DO THIS PROJECT THERE. PLEASE DO NOT DEFACE OUR DESERT LANDSCAPE WITH UGLY TOWERS.

THANK YOU.
Barbara Soto

Live, Love and Laugh...each moment to the fullest.
Cause life is short!

1 MS. LEARD: My name is Skeeter Leard. I am
2 on the mailing list. You spell the last name
3 L-E-A-R-D.
4 For every reason, it would be hard for me to
5 be more opposed to something than I am to this. "A,"
6 it's not green. If you build a power plant in Eastern,
7 New Mexico, to send power to Arizona, the middle of
8 Arizona at that, it's automatically not green.
9 The wind blows in Arizona, and the sun shines
10 there. If they want to have a power plant, they can
11 have one, but not over here where it is going to cross
12 Bosque Del Apache, the flyway which is used by tens of
13 thousands of migratory birds every year for about the
14 last 60,000 years.
15 The government spent a lot of money, and the
16 rest of us spent a lot of volunteer time making sure
17 that that's a good place for them. Obviously, we can't
18 do without energy, but we can do without energy
19 traveling 600 miles for no good reason.
20 Furthermore, a meeting at suppertime is
21 enough to make people who are already cranky even
22 crankier.
23 What would this do to me personally? Run
24 about 250 yards from my house, through the house of one
25 of my very best friends, and the travel path where all

these birds that I've moved to this part of the country to live close to.

MS. SCOTT: Frances Scott from Windmill Ranches. Looking at the maps today of the two new projected routes, E80 and E10, either one them is acceptable. E10 is the preferred route, as far as we're concerned. We're residents on Windmill Ranches. The original route went right through the residences.

MS. MORAN: Susan Moran.

I would like someone from either the Sun Zia or the Bureau of Land Management to come and visit our board of directors and talk to them about the proposed route and any kind of environmental impact it may have. I'm going to leave this map with you. This is -- one the proposed routes, E30 to E20, fall within the Tierra Grande area. And one of the proposed routes comes the east side of highway 47. It won't make our owners happy.

If they wanted to go to the west side of 47 and follow the railroad tracks, we wouldn't have any trouble with that.

But our owners are curious. Our owners want to know firsthand what's going on, and so I was recommended that either Martin Bailey or a Mark Everman could come and talk to us.

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1 I'm going to leave this map with you so that
2 maybe they can get an idea what I'm talking about. We
3 own -- we oversee up to the Sevelitta,
4 S-E-V-E-L-I-T-T-A, and then we also own up to the
5 Seminole National Forest.
6 So if -- I just would like someone to come
7 and talk to us, and then we can make a better informed
8 decision.
9 We feel that if they ran the power lines
10 along the railroad tracks, it might have -- help the
11 railroad in the future become an electric train, and so
12 it would be beneficial environmentally and cost
13 effectively better for both entities.
14 MR. BISHOP: Bob Bishop. The way it is
15 planned right now, there is route A161 that will, the
16 way it's located now, be right over our house, and that
17 should be moved at least a mile to the west. It's
18 following the present power line that's out there. And
19 we're about 300 yards east of that -- or west of the
20 previous power line, and they've got that on the map as
21 being right over the top of our property.
22 And there's nothing to the west of us. It
23 could go west at least a mile, and that would make a it
24 a lot more palatable. I don't want it over my house.
25 MS. BISHOP: Either that or follow the

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Interstate down, either one. You have to get on one side or the other.

We need to mention that if it goes where it presently shows that it will -- they'll have to buy our property.

MR. BISHOP: It would totally devaluate our property. We've got 160 acres, and right now the power line splits about 100 on one side, the side of the house is, and about 60 on the other side.

We've got pasture, and so we're utilizing underneath for pasture. But if this line goes on the west side, it will totally be over for the rest of property and the house.

MS. LUCENA: Margie Lucena, L-U-C-E-N-A. And I live probably less than a quarter mile or about a quarter mile north of one of the proposed lines just north of San Antonio. It cuts right across. Someone went with them when they were showing the proposed line exactly where it would go through, called and told me, "That's like right out your windows," south of the hay barn by my house, one thing of the many things I'm concerned about.

Well, the most obvious is the horrific ugly monstrosity looking things that go marching throughout the valley. I understand that these carcinogenic -- I

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21 barn by my house, one thing of the many things I'm
22 concerned about.
23 Well, the most obvious is the horrific ugly
24 monstrosity looking things that go marching throughout
25 the valley. I understand that these carcinogenic -- I

1 don't know what you would call it -- the sound,
2 unhealthy, the health issues. I understand that living
3 under these wires or near them, it can cause -- the
4 signals or whatever can cause cancer or other health
5 problems.
6 It's right in the fly path, right in the fly
7 path of migrating birds to the Bosque Del Apache.
8 Those birds have been doing this for thousands and
9 thousands of years. They aren't going to know to take
10 another route, and we've spent millions trying to
11 protect them and build this environment for them to
12 enhance their environment. And we have this happen?
13 Arizona has its own wind. Let them, you
14 know, produce their own wind energy. It's not green
15 when you've got to march it cross the states. I'm just
16 upset about it. I don't want to see it happen.
17 The atrocious look of the landscape, once
18 beautiful landscape, in Arizona is all anybody needs
19 see, with these horrible looking structures
20 crisscrossing the country over there. It's -- there's
21 nothing good about it, and it's not going benefit our
22 state. It's just going to scar it in many ways.
23 I don't know what else to say. Maybe it's
24 going to make a lot of money. Big companies. It's not
25 going to be New Mexico. It's on something they already

have. They have sun. They have wind. It doesn't make any sense to me that they have to create this energy thousands of miles from where it's going to go, when they have the same resources there. I don't want it. I don't want any of it.

MR. SIMPSON: Robert Simpson, S-I-M-P-S-O-N. The two routes we saw that we really like are E10 and E80. And E10 is the most preferable. There's one route that could be quite detrimental to the views for where we live, and that is D10, David-10. Other than that....

MS. SIMPSON: And thank you for taking out the one that went right through the subdivision at Windmill Ranches currently. That's a positive.

MR. SIMPSON: I think that pretty much covers our comments.

MS. SIMPSON: It's a very good process. They are looking at what we say, and we appreciate it. We think the scoping meetings are very informative. It's too bad that a lot more people don't come.

MS. DURAN: I don't think we're going to have too much control over where the line crosses, but I am very concerned about destroying wildlife habitat. And I understand there is the option to bury the lines whenever it encroaches the flyway of the migratory

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1 birds up and down the river. That's my comment, that
2 it needs to be -- or, you know, if it gets into heavily
3 populated areas that's going to destroy the culture of
4 the area. If at all possible, the line needs to be
5 buried. Francie Duran. I'm a small farmer in the
6 area.
7 MR. AND MRS. LEE: Cathy and Oliver Lee,
8 L-E-E, and we live on the -- we're on the north end of
9 the area for the White Sands Missile Range northern
10 area, and we're on County Road 121. And by looking at
11 these maps, the proposed line at E80 would come
12 right -- it's E80 100 turns, it goes right between our
13 house and the optic site, or right close to the optic
14 site that we have a contract with the Army for the
15 optics for L94, LC94, which is the proposed -- well,
16 it's the launching pad for the missile.
17 And then we have the optic site. They're on
18 two sites so they can get triangulation. So we would
19 like to see that thing -- if they are going propose, it
20 put it in that area, we understand; but we would like
21 to see it go north of the LC optic and and north of our
22 house and north of John Sais, S-A-I-S.
23 Because talking to the Army people, if we run
24 it farther south that will become unusable to the Army.
25 So we'd lose or contract with them, and

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1 that's quite a bit of money. But if they could put it
2 north, that would be fine.
3 MR. SMOKOVICH: Nick Smokovich,
4 S-M-O-K-O-V-I-C-H.
5 Basically, my comment would be to, wherever
6 the transmission lines are located, that there be
7 flexibility in the servicing to allow for smaller
8 substations. That would allow for the input of other
9 renewable resources along the way, instead of just
10 transmitting from one set point across lines. Other
11 resources become available, geothermal, you know,
12 things like that.
13 And my specific instance is wood biomasses
14 utilization where that power source could also be
15 incorporated into renewable energy transmission, that
16 its built to allow the those inputs along the line
17 corridor.
18 And probably one that you've heard before is
19 the visual wall of the line with possible --
20 especially, if the alternative turned out to be along
21 the Rio Grande corridor -- if the transmission line
22 could be at ground legal or below grade, that would be
23 preferable to an aerial line, just because of visual
24 impacts.
25 MR. BELL: My name a Mack Bell, M-A-C-K,

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25 MR. BELL: My name a Mack Bell, M-A-C-K,

1 B-E-L-L. I'm from Corona, New Mexico, and I just want
2 to register my support for the Sun Zia project. And I
3 strongly encourage the BLM to approve the route A90,
4 which is -- would be the most cost-effective route to
5 make this project happen.
6 MS. LEARD: I don't understand why they're
7 pushing so hard to transport the electricity 500 miles.
8 Why aren't they generating it in Arizona? They have
9 area there that they could put their collection system
10 in, and they wouldn't have to transmit it more than 30
11 or 40 miles. I don't understand. The only thing I can
12 figure is somebody owns the land or has an option on it
13 over here, and they're thinking to make a killing on
14 it. I'm not in favor of their project, but I don't
15 have a whole lot of reams of facts and figures to back
16 me up. My name is L-A-N-E, Leard, L-E-A-R-D. I live
17 here in San Antonio.
18 MR. HANLEY: Mike Hanley, H-A-N-L-E-Y. And I
19 am a candidate for a wind farm in Lincoln County. And
20 I am 100 percent in favor of this Sun Zia wind project
21 because I think that the United States needs to gets
22 off the foreign oil, and every little effort that we do
23 is beneficial. I think that Lincoln County could use
24 the jobs. I don't see anything derogatory to this
25 project at all. I think it's a plus, plus. I think if

1 B-E-L-L. I'm from Corona, New Mexico, and I just want
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15 have a whole lot of reams of facts and figures to back
16 me up. My name is L-A-N-E, Leard, L-E-A-R-D. I live
17 here in San Antonio.
18 MR. HANLEY: Mike Hanley, H-A-N-L-E-Y. And I
19 am a candidate for a wind farm in Lincoln County. And
20 I am 100 percent in favor of this Sun Zia wind project
21 because I think that the United States needs to gets
22 off the foreign oil, and every little effort that we do
23 is beneficial. I think that Lincoln County could use
24 the jobs. I don't see anything derogatory to this
25 project at all. I think it's a plus, plus. I think if

1 B-E-L-L. I'm from Corona, New Mexico, and I just want
2 to register my support for the Sun Zia project. And I
3 strongly encourage the BLM to approve the route A90,
4 which is -- would be the most cost-effective route to
5 make this project happen.
6 MS. LEARD: I don't understand why they're
7 pushing so hard to transport the electricity 500 miles.
8 Why aren't they generating it in Arizona? They have
9 area there that they could put their collection system
10 in, and they wouldn't have to transmit it more than 30
11 or 40 miles. I don't understand. The only thing I can
12 figure is somebody owns the land or has an option on it
13 over here, and they're thinking to make a killing on
14 it. I'm not in favor of their project, but I don't
15 have a whole lot of reams of facts and figures to back
16 me up. My name is L-A-N-E, Leard, L-E-A-R-D. I live
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24 the jobs. I don't see anything derogatory to this
25 project at all. I think it's a plus, plus. I think if

all the environmental work is done properly, I just can't see how it's not a benefit to the whole Lincoln County -- and ajoining areas, really. I don't have anything more to say than that. I just think it's a win, win.

MR. MERKEL: Robert Merkel, M-E-R-K-E-L, 601 Western Avenue, Socorro. I am an officer of the Friends of Bosque Del Apache, the wildlife refuge that's at issue. And I think I'm already on the mailing list.

Anyway, I have two comments. One of them is that if the line eventually crosses the Rio Grande where birds are using it up and down the river all winter, I feel it should go underground.

The other comment is that there is an area of the Rio Grande south of Hatch where there's a narrow canyon, agricultural fields on either side the river and mesas on both east and west of the river where there could be an overhead crossing. And I don't know whether anybody has considered that possibility, but it's about 14 to 15 miles southeast of Hatch, right along the river.

And there's a stretch -- I don't know -- two or three miles where there's no agriculture because it's a narrow canyon, and that is a possible place

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1 where the crossing could be done overhead without
2 risking a lot for the birds that might use the river,
3 because there should be minimal use of the river by the
4 birds since there's no fields there. So that's, I
5 guess, what I have in mind.
6 (Proceedings concluded, 8:15 p.m.)
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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable):

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

Not in my backyard – please! I am especially concerned about wildlife – the bird flyways that will be affected. We have "lost" the whooping cranes to man's "needs" for erecting wires – let's not lose any more birds. I'm also concerned about the effects on the health of people who live under/near these powerlines. Surely the proposal to follow the White Sands western fence line makes more sense related to the impact on people and animals.

JUN 03 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAM

ADD

CITY

Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

As landowners at Windmill Ranches we favor the E10 and E80 routes of transmission lines.

JUN 04 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

epg
JUN 04 2010

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAME: GEORGE LEYS
ADDRESS: BOX 61
CITY: MORAN STATE: WY. ZIP: 83013

Organization (if applicable):
Add to mailing list: ☒ Yes ☐ No
Withhold personal information*: ☐ Yes ☒ No
Receive notification of EIS availability?: ☒ Yes ☐ No

COMMENTS:

It's unsound practice to create new corridors of development when existing routes will accomodate added infrastructure. The proposals to direct these transmission lines over the Gallierro Mtns. and/or through the San Pedro valley should be dismissed out-of-hand for their complete disregard for the natural and social values of the landscapes they would trample. What is the reason that such unwarranted despoilation can even be considered? For the convenience of private individuals' desire for profit, are we to allow areas of natural and agricultural abundance to be degraded, compromised, industrialized, when there already exists in the I-10 corridor every manor of transportation? The discrimination we require of our public representatives in the BLM is that they use their sound judgement to protect the resources we as a nation hold jointly - not to become beguiled by the passing frenzy of entrepreneurs who share no interest at all in the long-term protection of the land.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed high-power transmission route through Arizona's wilderness areas, including both Aravaipa and San Pedro. Our wilderness areas should not be sacrificed in order to provide an energy source for other states. Arizona residents will benefit minimally from this plan, while bearing the brunt of the environmental impact.

SunZia needs to abandon any plan to construct transmission lines through the Aravaipa (or any other Arizona wilderness area). Routes through Tucson using existing infrastructure corridors are available and would have far less impact on the environment. It is an outrage that a so-called "green" energy project would destroy millions of acres of pristine Arizona wilderness.

Angela Sanchez 6-7-10

Signature Date

epg

JUN 09 2010

Name & City:

Angela Sanchez
309 E 4th St.
San Manuel, AZ 85631

995

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Alicia L. Bristow — June 6-10

Signature — Date

epg JUN 09 2010

Name & City: Alicia Bristow
Oracle, Az.

To Whom It May Concern:

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Bud Bristow June 6-10

Signature Date

epg

Name & City: Bud Bristow
Oracle, Az.

JUN 09 2010

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Rose Mary Marquez 6-7-2010

Signature Date

Name & City: ROSE MARY MARQUEZ
MAMMOTH, AZ 85618

epg JUN 08 2010

998

To Whom It May Concern:

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Deborah Garza 6-7-10

Signature Date

Name & City: Deborah GARZA
SAN MANUEL, AZ

JUN 08 2010

999

To Whom It May Concern:

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Brenda Uribe 6-7-10

Signature Date

JUN 08 2010

Name & City: Brenda Uribe
San Manuel, AZ

1000

To Whom it May Concern:

I am writing to voice my opposition to SunZia's proposed high-power transmission route through Arizona's wilderness areas, including both Aravaipa and San Pedro. Our wilderness areas should not be sacrificed in order to provide an energy source for other states. Arizona residents will benefit minimally from this plan, while bearing the brunt of the environmental impact.

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Anna Esquivel 6/7/10

Signature Date

Name & City: Anna Esquivel
Mammoth, AZ
85618

JUN 08 2010

1001

To Whom It May Concern:

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Janette McClintock June 7, 2010

Signature Date

Name & City: JANETTE McCLINTOCK
ORACLE, AZ 85623

JUN 08 2010

LaMerle Boyd & Associates

ATTORNEYS AT LAW

LaMerle Boyd
Phone and fax 505.986.1805
Lboyd1958@msn.com

Timothy John Vigil
Phone 505.946.2950
Fax 505.946.2964
Timv@sftitles.com

EPG
JUN 14 2010

June 9, 2010

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

Re: Study Routes E-80 and E-10 in Socorro and Torrance Counties

Dear Sir or Madam:

This firm represents Boyd Ranch, LLC, a New Mexico limited liability company. Attached are the Comments to the proposed transmission lines and their location and the damages that will be suffered by Boyd Ranch if these routes cross the Boyd Ranch New Mexico state grazing leases.

Yours truly,

LaMerle Boyd

Cc: Curt and Susan L. Boyd, Managing Members of Boyd Ranch, LLC

P. O. Box 645, Santa Fe, New Mexico 87504

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

JUN 14 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Curt Boyd and Susan L. Boyd, Managing Members
Boyd Ranch, LLC
ADDRESS: HC 66, Box 612
CITY: Mountainair, New Mexico 87036 STATE ZIP

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

The E-80 route on the proposed SunZia Transmission Project crosses our New Mexico Grazing Leases GM 3065, GO 1550, and GO 1191 and comes very close to our house and the ranch headquarters on fee simple land. That route will significantly affect our ranch and our way of life in the following ways:

DEVALUATION OF OUR RANCH: Our ranch, like many other independent ranches in New Mexico is made up of a few hundred acres of fee simple land and three New Mexico state grazing leases. The grazing leases are considered and valued when ranches are being bought and sold or appraised for refinancing. Even though the transmission lines (E-80 and E-10) being studied for location are on state land, it will devalue our ranch (and others) without any compensation to us for our losses.

1. We will lose part of our grazing land. During construction there will be considerable loss of grass due to the traffic and construction equipment. We may be unable to use the pastures where the construction is occurring.

2. Even after construction the presence of the lines may interfere with the use. The pristine natural beauty and unspoiled nature and unencumbered views of the ranch were a point of appeal for us when we bought it and were expected to be a

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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JUN 14 2010

point of appeal in the event we were to offer the ranch for sale. The presence of those lines (and the expectation of more to be built) will lower appraisals for refinancing or for a sale transaction. The new ranch house was built with view to the pristine virgin land that was expected never to be developed because it was state trust land. The lines will ruin our view shed because they will run about a quarter of a mile from the house and the ranch headquarters on a very visible ridge.

3. One of the best markets for small ranches in New Mexico now is for subdivision into ranchettes with common wildlands. This is occurring on nearby lands. Having the transmission lines just on the edge of our fee simple property will totally spoil it for a sale of that nature.

4. For 55 years there have been White Sands Missile Range Contracts and Evacuation Contracts on the land that now comprises Boyd Ranch (and others). It has been important to our national defense program and we have been proud to be a part of that. In addition the consideration for the contract made dry land ranching possible and is a factor considered when buying and selling ranches in this area and was a consideration in our purchasing the ranch. Because of the lines, White Sands will remove this northern part from the contracts which will be costly to us (around $25,000 a year), and it is a loss for which we will not be compensated. It is not a resource a potential buyer can consider.

5. The nuisance of the noise from the humming of the lines will affect us and that, together with the general fear of health issues and safety, will be a real deterrent to prospective buyers.

6. The study area is one mile wide with a view to future development. In other words, the intention is to add more and more lines to this corridor. All of the issues mentioned above will be exponentially magnified as "future development" occurs. This factor will be a major deterrent to a future buyer of the ranch. It devalues our ranch.

DISREGARD OF THE AESTHETIC, NATURAL AND CULTURAL: SunZia initially said that it would strive to place the transmission lines where there power lines rights of way, roads and other intrusions into the land already exist. **Route E-80 through our ranch is the route being studied that crosses more virgin unspoiled pristine public lands than any other route.** The southern route along Interstate 10 is the logical place to locate the lines. It should go along outside the east boundary of the White Sands Missile Range and then follow Interstate 10. In the alternative the route along highway 340 is preferred. Even route E-10 is near a pipeline and other improvements. Placing the lines along E-80 shows no regard to the aesthetic, natural or cultural condition of the land:

JUN 14 2010

1. Indian ruins, petroglyphs and complete pueblos will be crossed by routes E-80 and E-10;

2. There are several Spanish sheepherder ruins along the routes in E-80 and E-10;

3. There are natural springs near route E-80 which provide water for wildlife and for livestock and provide an oasis for wildlife. A family of owls' nest and raise their young in the brush near that spring every year (and probably many other animals and birds we have not identified.). When the natural conditions around them change, especially construction activity, there is a danger of losing this beautiful and historic spring which provided water to the many Native Americans who inhabited and hunted in this area, to the Spanish sheepherders and still to wildlife, livestock and hunters with a year round water supply in the desert;

4. Route E-80 comes near to the historic Spanish village of Chupadero (of which our ranch is a part) where the ruin of the Catholic Church still stands;

5. The independent dry land rancher has been important to the culture of New Mexico. We ranchers struggle to make it and we help one another to keep an important way of life going for the future. These locations at E-80 and E-10 for these transmission lines have disregarded these ranches and this part of New Mexico's culture. With 100's of sections of lands available, the proposed transmission lines at E-80 and E-10 go within ½ mile of seven ranch headquarters/houses. The lines go over one of our windmills and one of our sets of corrals. This is inexcusable. These are improvements we own on our state grazing leases for which we apparently will not be compensated.

6. The Boyd Ranch and others nearby in this large undeveloped area are rich with wildlife because of the absence of roads, highways, housing developments, transmission lines and people. On our ranch we have deer, antelope, elk, coyotes, mountain lions, bear, Oryx, bobcats, rabbits of course, fox, and various other small animals and a rich population of birds including great blue heron, various ducks, Scott's oriole, owls, golden eagles, wild turkeys, quail, doves, swallows and many more common birds. Without being declared, it is a wildlife refuge which can not be replaced once it is sullied.

HEALTH ISSUES: Whether these lines and the electromagnetic fields around them are harmful to health is not yet known. Some research has shown that there may be an increase in leukemia in children and some research has shown that they may increase the number of miscarriages in women. Apparently no research has been done on the number of miscarriages that may be caused in livestock. With casual contact, they may not be harmful, but it is not known what effect they may have on the fertility of cattle that may graze daily under and around the lines and may visit often or linger around springs, windmills and watering facilities. Not many years ago it was thought asbestos exposure was inconsequential, and we had no idea of the devastation that would come from exposure to uranium and radioactivity. The research being done on electromagnetic

fields is being paid for by the large corporations that want to build these transmission lines and sell the power and the rights to use the rights of way and the lines. They have every interest in finding that they are totally safe. They may be safe (The World Health Organization has launched a large multi-disciplinary research effort.) but just the concern and worry of the public about the safety and the ruination of the beautiful views there will deter buyers and will cause the ranch to be devalued.

FALSE ECONOMY: The environmental advantage of alternative forms of power is most effective when it is generated closest to the point of use. It is false economy to spoil New Mexico where population is sparse and land is cheap (but beautiful) to keep the lights going along the Las Vegas Strip and to support the extravagant usage of California. All this is at a time the Public Service Company of New Mexico is asking the Public Regulation Commission for unprecedented increases in its rates when the rates have already been increasing. Why are we shipping our wind power to California and ruining our state? SunZia is a large conglomeration of companies that intend to make a huge profit from "owning" this corridor and selling rights to other energy entities both for using these structures and transmission lines, for adding lines and from selling power. It is a commercial enterprise and not a philanthropic or public enterprise existing just for the good of the environment or the public. Its purpose is to make money for its stockholders and that is fine. It is rational and fair, however, that SunZia invest the resources required not to cause aesthetic, environmental and cultural damages (or specific damages to ranchers – for which they do not compensate the rancher because it does not cross the fee simple land) in New Mexico. New Mexico deserves this.

RECOMMENDATION;

1. Preferred Solution: Keep New Mexico's wind power energy in New Mexico.

2. We doubt this is going to happen so our number two preference: Build the lines along the east boundary of White Sands Missile Range and then follow Interstate 10;

3. Third best – Build the lines along highway 340. It is the logical location if it does not go to the South. But place the lines underground to cross the Rio Grande and to avoid interfering with the wildbird migration routes and for view preservation for aesthetic reasons, and they should place it underground to preserve the integrity of the traditional and picturesque village of San Antonio. This should just be the cost of building the lines across our beautiful state;

4. If none of the above alternatives occur, then we believe that it should go along the pipeline which already exists near E-10, but it should be re-routed to avoid coming near the houses/ranch headquarters and improvements of the Sean Cain Ranch.

JUN 14 2010

CORPORATE RESPONSIBILITY: The unfortunate situation that now exists in the Gulf of Mexico is a clear and horrible example of the environmental spoilation that can occur when we allow corporations to do the expedient thing and to ignore environmental concerns. If the transmission lines MUST be run across the most beautiful and pristine areas of New Mexico, the corporation must take upon itself the overhead of placing lines underground when they interfere and they must go around areas that will cause considerable harm. It should be SunZia's cost of doing business and our governmental entities should hold them to that and not become too eager to make the dollar and allow harm to come to those who have the least voice and those who will be damaged with no compensation for the taking.

We respectfully request that our concerns be addressed,

Curt Boyd, Managing Member of
Boyd Ranch, LLC

Susan L. Boyd, Managing Member of
Boyd Ranch, LLC

Juan & Daisy Sanchez
HC 66 Box 606
Mountainair, NM 87036

epg
JUN 14 2010

ATT: SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

Addressing the issue of the newly proposed "Expansion Study Area, April 2010".
500-kilovolt interstate transmission project
The proposed routes E10, E80 and (A50-60-90 in the original study area)

To Whom it May Concern:

On the surface there seems to be a strong indication of a consorted effort on the behalf of all the entities involved and there regulatory branches, to have deceptively kept the general public from being informed and educated as to the scope and impact of these proposals. This project appears to be both politically and monetarily charged from the highest branches of the United States Government down to the Governor of New Mexico. In the past New Mexico has been stripped and robbed of her natural resources for the advancement of other states and the gain of a very few companies and individuals. Now with our government's new policies in place to develop and pursue alternative energy sources New Mexico is being viewed as an area to be exploited. It is our feeling that these resources should be developed and kept within our state for the advancement and development of New Mexico and her citizens.

The impact of these proposed transmission routes will have major long term effects on the State of New Mexico and its population for generations to come. This leaves many unanswered questions and issues that need to be addressed before an undertaking of this magnitude begins.

Areas impacted and issues of concern that need to be addressed and answered, What are the short and long term effects on these items?

Cultural impact on communities
Ranching
Farming
Quality of life
Archaeological sites
National Monuments and prehistoric sites not limited to (Gran Quivera , Abo, Connell Ruins and Tinniabo)
View shed
Visual degradation
Noise
Environmental impact
Endangered species
Endangered plant s
Wild life migration and movement
Reproductive cycles of people
Reproductive cycles of domestic livestock and wild life
Impact on Sevilleta wild Life Refuge
Effects on domestic animals
Health effect long and short term
Cancer
Stress factor
Mental health
Long term financial effect on property
Tourism
Safety
Electro magnetic field effect
Financial impact on alternative incomes
Long term human and animal behavior
Will there be a guarantee for restitution associated with future environmental and health issues
Will there be a guarantee to bare all legal expenses incurred to enforce restitution and liability
Will there be a clause to rectify any unforeseen future conflicts environmentally or health related

Due to the lack of notice given to both respond and research this proposal we strongly recommend that you extend your time table for input and discussion. And you take the necessary steps to inform the general population of New Mexico of your intentions before you proceed any further. Until all our concerns are addressed and satisfied we are strongly opposed to any route SunZia chooses.

Sincerely,

Juan Sanchez

Daisy Sanchez

CC:
Mr. Adrian Garcia
BLM New Mexico State Office
SunZia SW Transmission Project
P.O. Box 27115
Santa Fe, NM 87502

(3)

epg
JUN 14 2010

Ernest & Ronda Thompson
HC 66 Box 613
Mountainair, NM 87036

ATT: SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

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Reproductive cycles of people
Reproductive cycles of domestic livestock and wild life
Impact on Sevilleta wild Life Refuge
Effects on domestic animals
Health effect long and short term
Cancer
Stress factor
Mental health
Long term financial effect on property
Tourism
Safety
Electro magnetic field effect
Financial impact on alternative incomes
Long term human and animal behavior
Will there be a guarantee for restitution associated with future environmental and health issues
Will there be a guarantee to bare all legal expenses incurred to enforce restitution and liability
Will there be a clause to rectify any unforeseen future conflicts environmentally or health related

(2)

Due to the lack of notice given to both respond and research this proposal we strongly recommend that you extend your time table for input and discussion. And you take the necessary steps to inform the general population of New Mexico of your intentions before you proceed any further. Until all our concerns are addressed and satisfied we are strongly opposed to any route SunZia chooses.

Sincerely,

Ernest Thompson
Email: thompson.ranch@yahoo.com

Ronda Thompson

CC:
Mr. Adrian Garcia
BLM New Mexico State Office
SunZia SW Transmission Project
P.O. Box 27115
Santa Fe, NM 87502

(3)

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
DATE RECEIVED
6/10/10

SunZia Southwest Transmission Project
Environmental Impact Statement

Socorro Soil & Water Conservation District
NAME
103 Francisco de Avondo
ADDRESS
Socorro, NM 87801
CITY STATE ZIP

Socorro SWCD
Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

The Socorro Soil and Water Conservation District (SSWCD) wishes to voice its concern regarding the proposed routes of the SunZia Transmission Line. While the proposed renewable energy project has benefits that are sustainable, construction of this type of transmission line will have a tremendous negative impact on surrounding property values, thereby reducing our mill levy contributions, and, in turn, our operating budget. This will reduce our capacity to carry out local conservation projects that benefit stakeholders in New Mexico. The tangible benefits for county and state stakeholders are not obvious with the SunZia Transmission Line and need further investigation.

The construction of the transmission route is certain to disrupt the ecosystem, displacing and destroying the habitat of many native plants and animals, including endangered species. Routing these lines through National Wildlife Refuges (Sevilleta NWR and Bosque del Apache NWR) is negligent in protecting these historic flyways and will cause harm to habitat, as well as to the economic gains that are received from recreation and tourism revenues. Our district, in cooperation with the USFWS, has dedicated numerous resources to help restore the Sevilleta to its natural pristine state.

We suggest a route that exercises better judgment in providing reasonable routes for the SunZia Transmission Line. The proposed routes closest to the Rio Grande will have the greatest impact on the migratory bird flyway and will have the strongest negative impact to local economy.

We feel that the preferable choice of the proposed route should run on the east side of the Rio Grande and of the White Sands Missile Range, along the alternative transmission line route that runs south until Interstate 10, avoiding densely populated areas.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

**Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such*

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
JUN 10 2010

SunZia Southwest Transmission Project Environmental Impact Statement

NAME: LINDA CARSON

ADDRESS: HC 66 BOX 611

CITY: MOUNTAINAIR STATE: NM ZIP: 87036-9419

Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☐ Yes ☒ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

-SEE ATTACHED-

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

**Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such*

June 6, 2010 1006

Linda Carson
HC66 Box 611
Mountainair, NM 87036-9419

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

To Whom It May Concern:

I am writing to express my grave concerns regarding one of the proposed routes for the SunZia Southwest Transmission project, specifically the route labeled E10, one of the "alternative routes subject to feasibility study" in the New Mexico Study Area Expansion of April 2010.

I am one of eleven households that are located in the vicinity of alternative route E10. We all live along County Road A-125, which runs south of U.S. Highway 60 at mile marker 191. Your route E10 crosses A-125 approximately three miles south of Highway 60. I have drawn County Road A-125 on your map entitled "Resource NM Ownership" for your reference and included it on the next page.

As you consider alternative route E10 for your transmission line, please be aware of the following:

1. The northernmost portion of A-125 is a one-lane bridge that crosses Abo Arroyo. This bridge has been condemned by the New Mexico Department of Transportation. While it remains open to local residents, it is not safe for commercial vehicles or other heavy equipment.

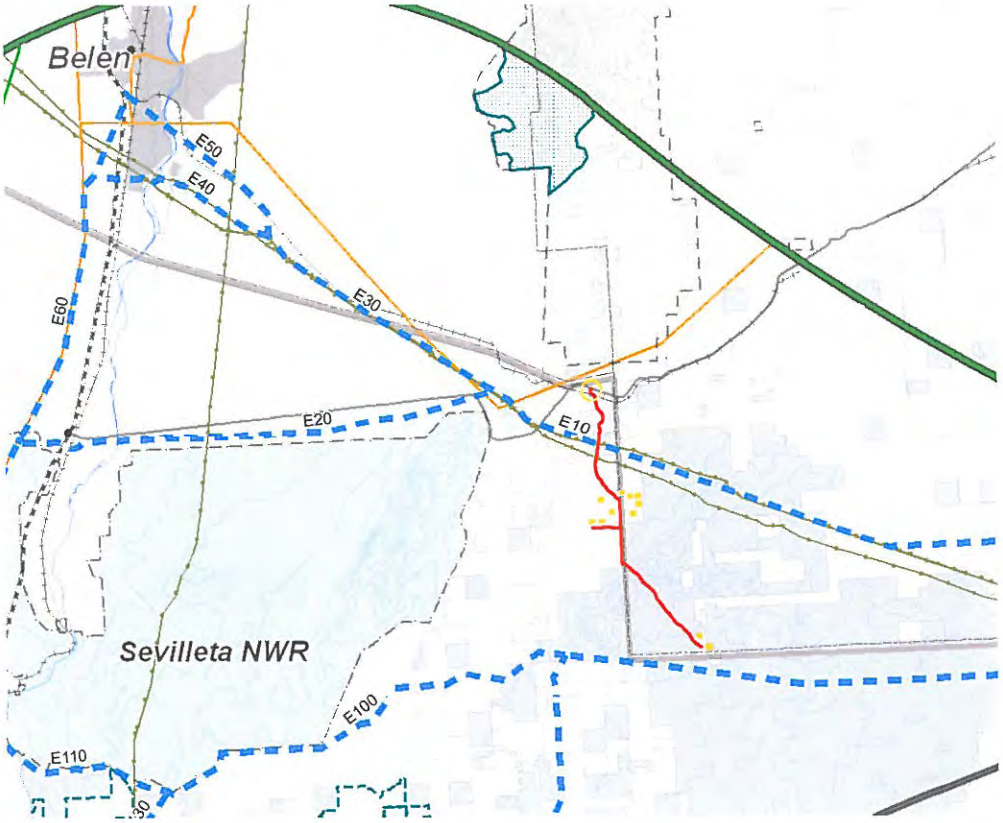
2. A-125 is a one-lane dirt road that winds through a rugged canyon and across many arroyos, but it is our most direct access to Highway 60, and our only access to Highway 60 when mud renders our only other access road, B-127, impassable. In essence, it is our lifeline, and it cannot be jeopardized by increased usage from transmission line construction and maintenance activities, nor can it be closed at any time during construction of a transmission line without jeopardizing the livelihoods and safety of the local residents.

3. All of the residents in the vicinity of your route E10 rely on individual wells for their water - we have no other option for water services. Residents living approximately two miles north of the your proposed route E10 have, within the past year, suffered from the collapse of their wells due to drilling and blasting associated with the construction of the Burlington Northern Santa Fe railroad track in Abo Canyon, northwest of the area. Any drilling and blasting associated with the construction of a transmission line in the area must not and cannot jeopardize the aquifer or infrastructures which provide local residents their sole source of water.

In light of the significant negative impacts a transmission line along route E10 would have on area residents, I strongly urge you to remove this route from consideration.

Sincerely,

Linda Carson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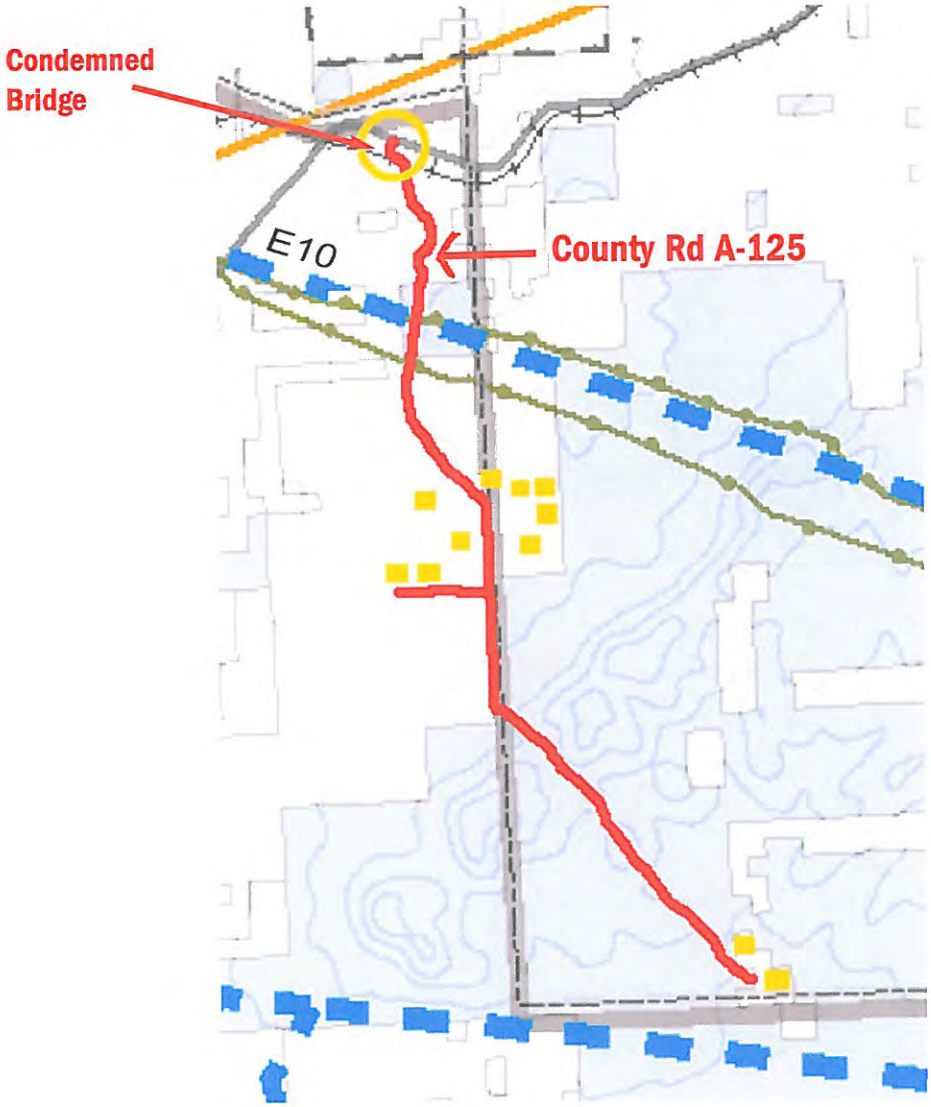
Condemned
Bridge
E10
County Rd A-125

JUN 10 2010

To: Mr. Adrian Gracia, Project Manager, Bureau of Land Management, New Mexico State Office, PO Box 27115, Santa Fe, NM 87502

From: Keith Banks and Donna Jameson, Ranchers in Socorro County, NM, PO Box 369, San Antonio, NM 87832, kbanks@plateautel.net

Subject: Comments on the proposed SunZia Southwest Transmission Project, June 8, 2010

We are ranchers that live on the path of the proposed E90 route, running south off routes E80 and E100. We own and operate this 30 section ranch and it provides our major source of income. The headquarters is at 34.4'50.8''N, 106.30'33.6''W. The E90 route is shown to run through our front yard, as well as through our BLM and NM State land leases. Our comments apply specifically to our holdings but are also applicable to the effects of this proposal on our whole valley.

First, ranchers in this valley have contracts with the US Army for their use of our airspace. Our area is called the Northern Extension of White Sands Missile Range. Our agreement with the Army is to evacuate our ranch when there is a missile firing, which gives the army a clear field for their operations, such as missile reentry. The proposed lines through the Northern Extension place at risk these contracts which provide a critical service to the Department of Defense.

It seems contradictory to place an electric power line through these airspaces that would be at risk of interruption by the Army's activities, when we are required by contract to leave our homes for these same activities.

Second, these power lines are environmentally objectionable because they will disrupt Native American home sites going back several hundred years, the homestead sites of the early pioneers who first came to this valley in the late 1800's and the activates of the current ranchers who have invested their time and resources into preserving and improving these grasslands while producing wholesome food.

Environmental degradation comes from noise, electromagnetic radiation, erosion, wild fires, increased traffic (air and surface), collisions by migratory birds and fragmentation of habitat. All these threaten the multiple raptor species, doves, quail, cactus wren, pronghorn antelope, oryx, mule deer, coyote, gray fox, cottontail and jack rabbits, owls, ravens, bats, and many other kinds of wildlife that live in this pristine valley.

In addition, our ranch's western, leased BLM land is part of the Stallion WSA, a preserve in the Sierra Larga Hills. Placing power lines just a short walk from this WSA, with all their hazards, is unacceptable because it would destroy those attributes that are the reasons the land was preserved in the first place.

Third, the power lines would be costly to our ranch operation because of decreased property values and interruption of our ranching operation. Our ranch is the result of a lifetime of hard work and saving, and these power lines degrade the home we have worked to build.

Our recommendations are: First, it be established with certainty that electricity generated from wind in New Mexico is the best way to meet the electricity needs of Phoenix and/or Los Angeles. Second, that transmission lines not be placed in pristine, undisturbed areas but along corridors that we accept as necessary intrusions on our landscape such as highways, railroads and pipelines.

Our mission, as is one of the BLM's, is to preserve our ranching communities, so we can continue to take care of our fading high desert grasslands.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
JUN 10 2010

SunZia Southwest Transmission Project Environmental Impact Statement

NAME: Keith and Sue Waid
ADDRESS: HC 66 Box 608
CITY: Mountainair, STATE: NM ZIP: 87036

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:
See attached letter dated June 7, 2010

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

June 7, 2010

Keith & Sue Waid
HC 66 Box 608
Mountainair, NM 87036

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

To Whom It May Concern:

With deep concern we are responding to the "Notice of Intent to Prepare an Environmental Impact Statement and Resource Management Plan Amendments for the SunZia Southwest Transmission Project In Arizona and New Mexico" updated April 2010. As permanent residents and ranchers of New Mexico in the Scholle and Chupadera areas (approximately 5-25 miles south of Rt. 60 and 10-25 miles west of Mountainair) we are absolutely opposed to the "Study Area Expansion April 2010". Referencing your maps dated April 23,2010, from the proposed SunZia-East Substation to the San Antonio area turning-point-south, we request that both northerly proposed routes known as "E10" and "E80" (in the expansion study) and route "A50-60-90" (in the original study) be removed from further consideration.

While we believe the best pathway for this entire 460 miles of 500kv transmission line, fair and suitable to the people and wildlife of New Mexico, is simply underground, we do recognize this as cost prohibitive. However, portions of this transmission line must go underground: especially all or portions of the originally proposed "A30-40-80" lines from SunZia-East Substation continuing west to San Antonio along Route 380. The following resources serve as a list of impacts and reasons for the removal of the "E" lines from further consideration as well as for the proposed "A 30-40-80" lines being installed underground:

<u>Natural Environment</u>
Wildlife
- Migratory birds (Bosque Del Apache Refuge)
- Endangered and threatened wildlife (Sevilleta Refuge)

Ranchland/grazing land
- Cattle, horses, wild horses, antelope, birds of prey, small mammals and reptiles

<u>Human Environment</u>
Land Use
- Ranching
- Water/wells (for existing human and animal consumption)
- Wilderness areas
- National Monuments and parks-recreation

Military Lands (White Sands Missile Area)
Military Air Space (Holloman and Kirtland AFB training flight zones)
Visual degradation
Electric magnetic field
Noise pollution
Environmental Justice

Cultural Environment
Archaeology
Prehistoric sites and petro glyphs
Historic Resources (Gran Quivera and Abo Ruins)
Native American Sites
Historic Trails

After some research, we are fully aware of the financial commitment to an underground system. However, in urban and more congested environments as well as in national parks, underground transmission systems are well at work. Since the year 2000, in places such as Massachusetts, New York, California, and Puerto Rico, Burns and McDonnell, a prominent U.S. based electrical engineering consultant and construction firm, has successfully finished miles and miles of underground transmission lines to improve the lives of the respective area residents and lessen the impact on local environments. If 25 miles of transmission line can be buried in San Juan, Puerto Rico, then 50 miles across the northern borders of White Sands Missile Range and Bosque Del Apache is also very possible.

Finally, since the people of New Mexico are not the beneficiaries of this transmission line is it even conceivable that we should bear the sight of it? While a few of our people may benefit from jobs as a result of solar and wind farms, most of our people do not benefit at all—not even from the right and availability to purchase the end product. To ruin our environment with transmission lines (with many more to come in the future) seems a true injustice to our people, wildlife, and especially our children. To go to the "green" extent to save our environment by installing renewable energy farms is extraordinary. But to destroy so much of our New Mexico land for transmission lines is environmentally irresponsible and negligent. Let us do it right the first time. Minimize the impact on our lands permanently. Go underground more often than not.

Respectfully Yours,

Keith & Sue Waid

Cc:
Mr. Adrian Garcia
BLM New Mexico State Office
SunZia SW Transmission Project
P.O. Box 27115 (87502)/301 Dinosaur Trail (87508)
Santa Fe, NM 87502

June 7, 2010

Keith & Sue Waid
HC 66 Box 608
Mountainair, NM 87036

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

To Whom It May Concern:

In addition to commentary in our letter dated June 7, 2010, we have some questions that require your response. Please reply at your earliest convenience:

1) What is the effect of an electric magnetic field of a 2-line, 500kv each transmission system on the health of humans, animals, and plant life in its vicinity? In close proximity, can EMF's cause cancer? Are reproductive cycles of cattle grazing nearby, for instance, negatively impacted?

2) Is this SunZia SW Transmission Line (2-lines, 500kv each) the entire project? Will there be future lines added to handle the transmission of additional solar and wind farms? If so, will these lines be in the same easement?

3) How will the people of New Mexico benefit from this transmission line?

Thank you for your attention to these questions.

Respectfully yours,

Sue Waid

Keith and Sue Waid

SunZia Southwest
TRANSMISSION PROJECT

1009

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

EPG
JUN 10 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAI

ADI

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

I WOULD NOT WANT THESE HIGH VOLTAGE TOWERS ROUTED THROUGH OUR TOWN OF RESCAL OR J-6. THESE TOWERS WILL MAKE OUR NEIGHBORHOOD LOOK LIKE AN INDUSTRIAL ZONE AND WILL HURT RESIDENTIAL PROPERTY VALUES.

I SUGGEST AN ALTERNATE ROUTE ALONG HIWAY 40 OR ALONG REMOTE RAILROAD TRACKS, BUT NOT THROUGH AZ TOWNS OR CITIES.

SINCE AZ RESIDENTS WILL NOT BENEFIT FROM THIS TRANSFER OF ELECTRICITY, NEITHER SHOULD RESIDENTS HAVE TO SUFFER BY HAVING THESE UGLY TOWERS IN OUR BACKYARDS.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

1010

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

JUN 10 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAI

ADI

CITY

Organization (if applicable)

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

I have two alternate route suggestions:
(1) follow Interstate 40, from northern New Mexico through Arizona to California.
(2) follow the railroad tracks from New Mexico to California.
If the transmission lines follow the I-10 corridor they will go right through the small residential area of Mescal. The towers are unsightly enough especially when they're so close to homes.
As a resident of the Mescal area, we receive no benefits from the electric power generated in New Mexico and sold to California

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

epg

JUN 10 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Thomas and Dian Tymes
NAME

181 N Tequila Trail
ADDRESS

Benson AZ 85602
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☑ Yes ☐ No

Withhold personal information* ☐ Yes ☑ No

Receive notification of EIS availability? ☑ Yes ☐ No

June 9, 2010

COMMENTS:

My husband and I were just recently made aware of the proposed towers that may go thru the J6-mescal area. And may go right thru our propert, where the present power lines are. We just recently built a new home and feel that this would drasticaly reduce the value of our property. More importantly we are concerned about health issues that may arise from the extra electrical power going across our property. Visualy this would be very upsetting to have right in our back yard. We chose to live in the J6-mescal area because of the beauty and never imagined something like this would ever be considered in an established and growing residential area.

Thank you for considering our concerns. Thomas and Dian Tymes

Dian Tymes

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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1012

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

EPG
JUN 10 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☑ Yes ☐ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

No We dont want power lines running north of Mescal because it will ruin our view of the mountians and our property values. A few years ago they ran gas lines under ground through Mescal it dosent disturb anything but the ground. High power lines can cause cancer.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

JUN 10 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: MARY RUFF
ADDRESS: 1212 NORTH DRIVE
CITY: SOCORRO STATE: NM ZIP: 87801

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I would like to go on record as opposing the proposed study area expansion of the power transmission corridor. The Middle Rio Grande valley is a rural area that is, as yet, unmarred by massive power lines. We are fortunate to still have an environment that is conducive to migratory birds and other wildlife. There is no benefit to local landowners.

I understand that there are some steps that could be taken to mitagate the destruction of wildlife and to our way of life, but that they are not included in SunZia's amended evaluation.

I strongly oppose this power transmission corridor in its present form.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

**Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.*

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

N

A

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

THESE TOWERS ARE ugly AND will RUIN THE SCENIC BEAUTY WE HAVE IN THIS AREA. I do NOT WISH TO LOOK AT THE PROPOSED TOWERS ON A DAILY BASIS.

JUN 10 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

KIRK G. STITT
NAME
3963 LA HACIENDA DR
ADDRESS
SAN BERNARDINO, CA 92404
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

MY WIFE + I PURCHASED PROPERTY IN DEER CANYON NEAR MOUNTAIN, N.M. THIS PROJECT APPEARS TO INVADE THAT AREA. WE NEVER WOULD HAVE PURCHASED IF THIS PROJECT WAS KNOWN IT WILL SUBSTANTIALLY DECREASE OUR PROPERTY VALUE. THIS PROJECT APPEARS TO BE CLOSE PROXIMITY TO ABO' AND GRAND QUIVIRA PART OF SALINAS N.M. THE APPEARANCE WILL BE A FURTHER SCAR OF MODERN SOCIETY AND A SIGN OF DIS-RESPECT FOR OUR AMERICAN HERITAGE.

I RESPECTFULLY REQUEST THAT THE EXPANSION AREA AVOID THESE AREAS

epg
JUN 14 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

**Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.*

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

GERARD T. CONRAD
NAME

3277 W. BURRO LN.
ADDRESS

BENSON ARIZ 85602
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

epg
JUN 07 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

**Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.*

The following are the reasons I would oppose the proposed privately-owned power line running from New Mexico to California along the I-10 corridor in southeastern Arizona. i1017

Cochise County has more privately owned land than any other county in Arizona which would consequently force the sale of private lands since the power line would require a 1000-foot easement on each side.

Cochise County is the gateway to southeastern Arizona and the power line would cause visual scars to the landscape of scenic areas and adversely affect tourism thus making an already poor economy worse.

California and New Mexico stand to profit from this privately-owned power line with absolutely no benefit to the citizens of Arizona or Cochise County.

Studies have shown that high-intensity power lines affect the health of people and animals living near them causing disease and death.

It is a well-known fact that illegal aliens use high-tower power lines as landmarks while traveling thus increasing the traffic of illegal aliens and raising crime levels near these power lines.

A possible alternative would be to run the power line through northern Arizona in the vicinity of Springerville, St. Johns and Holbrook over the vast stretches of sparsely populated public land.

And last but not least, people living in the immediate area of these power lines would see their property values plummet further than they already have from this bad economy.

epa
JUN 0 / 2010

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NAME Don Fields

ADDRESS

CITY STATE AZ ZIP 85602

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

1.) Those lines produce radiation - we do not need the health issues. 2.) we moved to cochise County for the views - NOT TOWERS - 3) we do not need a reduction in property values.

Springerville, St. Johns and Holbrook would be a much better route - flater and very sparcely populated.

JUN 07 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

JUN 07 2010

SunZia Southwest Transmission Project Environmental Impact Statement

NA

AI

CITY

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

APPARENTLY THE "PREFERRED" OR "MOST PROBABLE" ROUTE GOES RIGHT THROUGH THE ESTABLISHED COMMUNITY OF MESCAL WHICH HAS MANY ESTABLISHED RESIDENCES AND SEVERAL BUSINESSES. MY WIFE AND I MOVED OUT HERE FOR A QUIET RURAL LIFESTYLE WHERE WE COULD HAVE OUR HORSES AT HAND AND ENJOY OUR APPROACHING RETIREMENT. WE HAVE WORKED HARD SHEDDING BLOOD, SWEAT, AND TEARS BUILDING OUR RETIREMENT HOME AND HORSE FACILITIES AND HAVE NO INTENTION GIVING THEM UP SO SOME CORPORATION CAN MAKE MONEY SELLING INTERSTATE POWER. THIS LINE NEEDS TO BE ROUTED WHERE IT WILL NOT DISRUPT PEOPLE'S HOMES + LIVES. THE BUYOUTS OF RESIDENCES + PROPERTIES WOULD SEEM TOO EXPENSIVE TO BE ECONOMICALLY FEASIBLE ANYWAY AS OPPOSED TO OPEN COUNTRY. I WILL NOT SELL THEM MY PROPERTY AT ANY RATE, AND YOU'LL RUN ME OFF IT OVER MY DEAD BODY!!!!

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

1020

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

JUN 07 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

CITY STATE ZIP

Organization (if applicable)

Add to mailing list	☒ Yes	☐ No
Withhold personal information*	☑ Yes	☐ No
Receive notification of EIS availability?	☐ Yes	☑ No

COMMENTS:

I own property in the Windmill Ranches Subdivision in Ancho, NM. I have been following the discussion of the SunZia transmission lines and note that the currently proposed routes do NOT cut across the Windmill Ranches properties. I do appreciate that SunZia has chosen not to affect our property and property values. Of the routes proposed, obviously the least preferable one is the one that runs along Rt. 54. Also, it would be much appreciated if the substation were NOT located in any that encompasses Windmill Ranches property. Thank you.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

EPG
JUN 09 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Joanne Lawrence
ADDRESS: 3180 W. Citrus Rd
CITY: Benson, STATE: AZ ZIP: 85602

Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☑ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I greatly disapprove of your choice of location for these transmission lines through Southern Arizona going to California.

I live in the community of Mescal just North of I-10 & West of Benson, Arizona. One reason I chose to live here was this area has all utility lines buried underground. The views of the Mountains are very enjoyable.

Upon study of the maps it appears a more direct route for these lines would be Northern Arizona possibly following I-40 route or Valley areas North of Heber and West through less populated areas.

I'd also strongly believe such lines are very hazardous to health over time. They also interfere with A.M. radio reception.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
JUN 09 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Bob + Jo Simpson
ADDRESS: 327 Ranch View Loop
CITY: Ancho STATE: NM ZIP: 88301

Organization (if applicable):
Add to mailing list already on ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

Thank you for eliminating the route through our sub-division of Windmill Ranches! This shows the process works: you asked for concerns, we gave them (along w/ others) and as long as feasible, you adjusted the routes.

Now, we'd ask you do not select D10, as that would be our front view across the mountains. We prefer E10, as it is the farthest away. ~~[illegible]~~

Another concern is the actual substation location. If it can go anywhere within the lined circle, the circle overlaps the sub-division. We understand you are considering an abandoned natural gas site. That would seem a good way to re-claim the area, and avoid private lands. Thank you.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
JUN 09 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

Sarita L. Leuengood
NAME
3173 W. Citrus Rd
ADDRESS
Benson, Az. 85602
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I am very much against this Power line going thru Mesea. It will be unsightly. It will depreciate our property values. my husband and I moved out here from Tucson, when he Retired from the U. of Az. Our 2 daughters live in this area. I sugest it go thru Holbrook, Az. I am prepared to do what I have to do to fight it. It will be dangerous to the invirerment.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Billy E. Levengood
NAME
3173 W. Citrus Rd
ADDRESS
Benson, Az 85602
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I grew up in Tucson, I worked at the U. of Az. for 42 yrs. This is my Retirement home in Mescal, I am very much against this high Power line going thur Mescal – It will be unsightly and Ruin our property Values my two daughters live in the area. It will be dangerous to the impirement I suggest it go thru Holbrook, Az. It will less Costly to run it thru there, as there already are lines thru there.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

JUN 08 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NA

AD

CITY

ZIP

homeowner
Organization (if applicable)

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

I am an AZ native from Tucson, and have recently bought land at High Point Ranch 8 miles south of Klondyke, AZ. There are approx 66 sections of land with No water, electric, gas or phone lines to the properties, and minimal traffic. We do not organize as a homeowner association until June 19, 2010, so you have not heard from approx 66 new land owners about our views on a byway with Tall transmission towers, road construction, possible dense housing for the workers + all of the new business that would follow, just to bring power from

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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New Mexico to Casa Grande to benefit Ca., Utah, Las Vegas, etc. This cheap land is pristine and has always since the 1800's been very sparsly populated & should be for many reasons - for Indian sites, riparian areas, clean air, little crime, dark skies for astronomy. Do Not destroy our heritage to suit your selfish needs.

Leave Az. alone - we don't need more "shortcuts" or power (lines). We have ample wind, water (dams) & sunshine (solar) for our needs - we do not want to add any more short term projects that in the end only benefit SunZia & its shareholders' CEO's.

Thank You

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

Barbara
NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☐ Yes ☒ No

Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

higher property taxes, property value down
ruins view of area, possible health
problems - bad radio & TV recepiation

JUN 08 2010

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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1027

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
JUN 14 2010

SunZia Southwest Transmission Project Environmental Impact Statement

CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☒ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

PREFERRED ROUTES: E10 and E80

UNFAVORABLE ROUTES: D10 and A30

I HAVE PROPERTY IN WINDMILL RANCHES NEAR CARRIZOZO NEW MEXICO.

THANKS.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
JUN 14 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

Robert E. Baker
NAME
276 Desert Sunset Rd.
ADDRESS
Benson AZ 85602
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

It stands to reason that a project such as this be undertaken with as little impact to private property and citizens as possible.

The central state option seems to fit this goal best.

I can think of a few selfish reasons why I would not like this line in my back yard, but the big picture is the least impact to the least number of people.

Thank you
Bob Baker

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
JUN 11 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

Stephen & Connie Woolf
NAME
70 N. Cherokee St.
ADDRESS
Benson Az 85602
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

We reside in J-6 & have our business in Mescal, 9 miles West of Benson. We are strongly opposed to the new lines being run in our area.

We would support the lines being run in the northern portion of the state which is more sparsely populated, and where I understand lines currently exist.

thank you for the opportunity to express our opposition.

Stephen & Connie Woolf

Mescal Bar & Grill LLC

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

**Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such*

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epa
JUN 07 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

SUE + ALAN CONKLIN
NAME
P.O. BOX 274
ADDRESS
SOCORRO NM 87801
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

My husband and I live less than a mile from where Sunzia wants to put a transmission line. We live on the north end of Bosquecito Road (in Socorro) near Quebradas Road. We have experienced how very dangerous these lines are; we have a hundred million dollar lawsuit with 14 other plaintiffs (Gunn Hill vs Los Angeles Dept. of Water and Power.) Attorneys Howarth + Smith. Though the case has yet to be settled, the lawsuit has stopped the building of the 3rd power plant in Delta, Utah.

The Rio Grande River from Cochiti Lake to Elephant Butte is critical habitat for the Silvery Minnow and the Southwest Willow Fly Catcher as well as the Bald Eagle that winters in the Rio Grande area. There is heavy use by horse back riders, hikers, bicyclists, motorcyclists and campers

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018 Cover

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who would be adversely affected by these proposed lines.

Sue and Al Conklin

FOLD HERE

FROM

First Class
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Required

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 North 32nd Street, Suite 102
Phoenix, AZ 85018

1031

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL PUBLIC LANDS

JUN 14 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☒ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☒ No

COMMENTS:

I AM AGAINST BUILDING THESE POWER LINES ACROSS ARIZONA to supply POWER FOR CALIFORNIA. IF THE POWER IS TO BE USED IN CALIFORNIA, BUILD THE GENERATING plants in CALIFORNIA. SAVE THE COST OF CONSTRUCTING THIS POWER LINE. IF THE TRANSMISSION LINES MUST BE CONSTRUCTED, CONSIDER PUTTING THEM UNDERGROUND OR ALONGSIDE EXISTING POWER LINES OF THIS CAPACITY. DO NOT DESTROY THE VIEWS OF A NEW AREA TO CONSTRUCT THIS POWER LINE.

THERE IS MUCH WORK to BE DONE BEFORE WIND AND SOLAR GENERATING plants ARE FEASIBLE ON A COMMERCIAL SCALE. THESE SO CALLED "GREEN" ENERGY plants STILL REQUIRE BACKUP BY CONVENTIONAL GENERATING SYSTEMS. I VOTE NO ON THIS PROJECT!

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epa
JUN 16 2010

SunZia Southwest Transmission Project Environmental Impact Statement

NAME	Don Tripp
ADDRESS	PO Box 1369
CITY	Socorro
STATE	NM
ZIP	87801

State Representative

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

The proposed line to the East of the White Sands Missile Range is the only choice that provides for minimizing the massive negative impact of the project on the critical fly-ways of the Bosque del Apache Wildlife Refuge. The easternmost route is the only option that addresses these environmental issues with an acceptable solution. I strongly urge that this route be adopted to avoid the potential damages to the valley both environmentally and economically. Thank you.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

JUN 16 2010

SunZia Southwest Transmission Project Environmental Impact Statement

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Go the Northern route where there is already a powerline. Why does California have to go to New Mexico when they have land of their own and wind mills already? They always have to get what they need from somewhere else. California has open desert. Remember they boycotted Arizona because of immigration. Told people not to come here. So let them be self sufficient.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

JUN 16 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

California has its own windpowered resources. why should it be supplied by New Mexico? They also have lots of sun for solar power. If they are going green for the global warming trend then they will have to provide for them-selves. Arizona has been bashed by them enough, now they want right of way across Arizona? I think not!! As far as I am concerned they can be self sufficient. They owe Arizona an apology.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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Richard K. Winslow P.O. Box 315 Antrim, N.H. 03440 10/19/10

RECEIVED
BLM MAILROOM
2010 MAY 21 PM 1:29
STATE OFFICE
SANTA FE, NEW MEXICO

Adrian Garcia
Bureau of Land Management
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Mr. Garcia

I've read about the SunZia Transmission Project and offer these thoughts:

1. No route for the Project should be considered except routes already ecologically damaged by extant energy transmission equipment, such as in the I-10 corridor.

2. It seems obvious that installing hundreds of huge transmission towers in the San Pedro Valley – with its attendant bulldozing, tree removal, road construction, etc. -- has to be a profit-driven idea rather than a function of ecological sanity.

3. Leasing public lands to SunZia, while providing only a small financial return, would open up the land to uses – such as by all-terrain vehicles – that create erosion, loss of vegetation and disturbed aquatic habitats

4. We read of poor countries (e.g. Haiti) which, having been deforested, suffer t g grotesquely from such results as mud slides. The U.S. will become a poor country driven to its knees by such things as floods, droughts, tornados, landslides, etc. unless it resists unwise money makers such as a badly-handled SunZia project could be.

Thanks so much for your attention. And good wishes

Richard K. Winslow

Richard K.Winslow

epg
JUN 18 2010

June 18, 2010

epg
JUN 21 2010

SunZia Southwest Transmission Project
% EPG, Inc.
4141 North 32nd Street, Suite 102
Phoenix, AZ 85018

To whom it may concern:

This letter will address the proposed 500 kv power line proposed by SunZia. The E-80-110-120 proposal would cross my land south of Gran Quivira, N.M. I am completely and totally against any power line crossing my property and will never agree to such a thing without a fight. I believe it is a crime for corporations such as SunZia to make these proposals without consulting the landowners. Nothing like this should ever be done without properly informing, consulting, and working with private and public landowners. The way this has been done makes it appear that SunZia was trying to pull the wool over all of the landowners eyes and have it done before the landowners ever found out. This is still America, and, "we the people" still have a few rights left. I'm sure there are attorneys who would love to have a case such as this. This is wrong and should be squelched now. If not, SunZia should be preparing for more lawsuits than they can imagine possible.

Sincerely,

Lola A. Harris

Lola A. Harris
P.O. Box 711
Mountainair, NM 87036

DATE RECEIVED 6/18/10
RECEIVED
B.L.M.-MAILROOM
2010 JUN -8 PM 12: 25
STATE OFFICE
SANTA FE, NEW MEXICO

June 6, 2010

Bureau of Land Management
NM SunZia Transmission
attn. Adrian Garcia
PO Box 27115, Santa Fe,
New Mexico 87502

Dear Lead Agency,

In completing this current Scoping for the renewable energy powerline project, please select the original (2008) "Proposed Route" across New Mexico as "Preferred Alternative" for the eastern portion of the powerline. I specifically recommend Route numbers A181 and A300 (or alternately, A250) as the Proposed Route for the SunZia DEIS.

It is wisest to follow a path cutting diagonally west-southwest from the new sub-station, then skirting past the northwest corner of White Sands Missile Range property just south of Highway 380, and turning immediately south, following the WSMR boundary to the point where the line must head west in order to cross the Rio Grande just south of Arrey, NM.

Here are the reasons I request this route:

- It avoids all NWRs, WSAs, WAs, ACECs, and conservation easements.
- It avoids relatively populated agricultural and scenic areas.
- It avoids the low-altitude migratory avian flyway through Rio *bosques*.
- This eastern-end route is shortest, causing the least land disturbance.

I understand the military is finally ready to accept the proximity of the powerline following outside their west boundary. Thus, let us utilize this opportunity and option.

Sincerely,

Kathryn Albrecht

Kathryn Albrecht,

Board member,

Rio Grande Agricultural Land Trust

BLM NM State Office
SunZia Southwest Transmission Project
P.O. Box 27115 301 Dinosaur Trail
Santa Fe, New Mexico 87502-0115

RECEIVED
B.L.M.-MAILROOM
2010 MAY 10 AM 11:19
STATE OFFICE
SANTA FE, NEW MEXICO

April 24, 2010
540 S. West Rd.#19
Wickenburg AZ 85390
Phone: 505 470-3014
slushymeadows@gmail.com

Dear BLM SUNZIA Manager:

I have lived in the Southwest for 40 years, most of that time in Santa Fe. I moved to Wickenburg this year. I am very familiar with the areas affected by the proposed Sun Zia Line. At first glance it appears that the Study Area Expansion routes did not at all take into account Newsletter #3 stated reasons for further study:public support for using the existing I-10 corridor, impacts on ranching lands and property values, cultural and visual concerns and wildlife corridors.

The Expanded Study location runs right through the beautiful Sonoita/Elgin area and through the valuable farming area of Kansas Settlement. Please, please just use the existing I-10 corridor. When the New Mexico RailRunner recently chose the route of the existing I-25, I was aware of no complaints and the public and landowners breathed a sigh of relief.

The Study Expansion route north to Belen is also a poor choice. The route goes through the Ladron Peak Wilderness Area vicinity and unnecessarily swings out of line to Belen.

My strong vote goes for following I-10 and I-25 corridors as much as possible. I realize that cost has ruled out underground transmission lines. However, if the money allocated for this SunZia project were spent on electric-use conservation (such as super-efficient refrigerators and air-conditioners as well as thermostats and other efforts noted in the accompanying REPUBLIC article) the need for this transmission line could be moved forward a number of years. This time would enable research on superconductors to advance to an affordable option; and superconductors <u>must</u> run underground for efficiency. Los Alamos Labs is working on this; they lack funds.

Finally, these unsightly, dangerous overhead lines would not be needed at all if "distributed" local power generation received the study and planning, and funding, that it deserves. If we do not create renewable power within or near points of use (cities,factories) there will be no end to the number of "waste-land producing" overhead high-voltage towers. Distributed generation is feasible, today. This whole project needs to be delayed, in my view. I suggest partnering with the American Solar Society.

Sincerely, Ron Simmons

Ron Simmons

JUN 18 2010

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV

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GARY R. HOVATTER
BOB BROSCHEID

June 9, 2010

RECEIVED
B.L.M.-MAILROOM
2010 JUN 14 PM 12:58
STATE OFFICE
SANTA FE, NEW MEXICO

Mr. Adrian Garcia
BLM New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115
Santa Fe, NM 87502–0115

Re: Additional Scoping of SunZia Southwest Transmission Project

Dear Mr. Garcia:

The Arizona Game and Fish Department (Department) has reviewed the information provided in the SunZia Southwest Transmission Project Newsletter #3 and at our meeting on May 13, 2010. The Department understands the proposed project activities would involve the construction of up to two 500kV transmission lines with key interconnections to the existing extra high voltage grid in Arizona and New Mexico. The additional scoping period is for the proposed study area expansion to include additional alternate routes.

The Department appreciates the opportunity to provide early, broad comments on the proposed SunZia Southwest Transmission Project routes under evaluation. Our comments (see attachment) focus on proposed routes with the potential to negatively impact wildlife, habitat, and our constituents in Arizona. The Department looks forward to continued coordination with the Bureau of Land Manangement and SunZia's project proponents in the decision making process as an agency cooperator. If you have any questions regarding this letter, please contact me at (623) 236-7606 or John Windes at (520) 628-4442.

Sincerely,

Ginger Ritter

Ginger Ritter
Project Evaluation Specialist

CPD
JUN 18 2010

Attachment

cc: Laura Canaca, Project Evaluation Program Supervisor
John Windes, Habitat Program Manager, Region V

AGFD # M10-04215716

Arizona Game and Fish Department Comments on Proposed and Alternative Routes for SunZia

General Comments

- Permanent or temporary construction/service roads and staging areas, needed to support the proposed transmission line, could have a substantive negative impact on wildlife and habitat. The use of existing roads is preferable over creating new roads. All new roads and staging areas should be kept to a minimum, restored to original condition (e.g., regarded, revegetated) if not needed for future service, and secured (e.g., fenced, gates) to prevent unauthorized traffic. Roads fragment habitat, disrupt wildlife movement patterns, contribute to soil loss through erosion, facilitate the spread of nonnative and invasive species, and provide new access points for off highway vehicle (OHV) traffic into previously undisturbed habitat. Disturbed areas should be reseeded with vegetation native to the site, utilizing seed collected from the project area to maintain the genetic integrity.
- If the proposed project is authorized and some new service roads created, we may advocate for leaving specific roads accessible to sportsmen and outdoor recreationists. Identification of these service roads would require close coordination with the Department.
- The removal or pruning of vegetation during construction and for maintenance purposes should be avoided or minimized. In most cases, pruning is preferable to removable.
- Some of the proposed routes may be acceptable if adequate mitigation is provided. Examples of mitigation might include tower construction via helicopter to avoid the construction on new roads, or compensation to acquire or protect wildlife habitat or hunting opportunities in another location.
- When possible, follow existing utility corridors, roadways, or other previously disturbed areas.
- The EIS should evaluate the transmission line's lure to attract new development and energy projects near the line as a cumulative impact. We believe the presence of the transmission line will attract additional development, such as renewable energy projects.

Route Specific Comments

Our comments on specific proposed routes are grouped into three categories: southern, interconnecting, and northern. We have reference to the proposed route numbers when labeled on the maps available, but sometimes the available maps were incomplete or confusing.

Southern Routes in the Vicinity of Interstate 10

1) Beginning from the Arizona-New Mexico Border, we believe the proposed routes should parallel I-10 (B150 and Alternate 22) as much as possible before diverting north along

JUN 18 2010

highway 191 or further west. We are unclear of the rationalization of the three northern routes (B 160, B 170, Alternate 12 and Proposed 35) that go through the Peloncillo Mountains connecting with highway 191.

2) The proposed route (F10) beginning near Wilcox, then heading south around the playa to Benson, could be detrimental to migratory sandhill cranes and waterfowl.
3) Evaluate the feasibility of a new route following 1-10 from northeast of Wilcox to Benson. In the proximity of the intersection of highway 191 with I-10, consider the feasibility of a route around the north end of the Little Dragoon Mountains.
4) From the Benson area west, the 2 proposed routes closest to I-10 (F20, F31) are preferable to the more northern route near the Coronado National Forest/Rincon Mountains (F 40).
5) The proposed route (F110) passing through the Santa Rita Experimental Range is less desirable than the routes to the north.
6) Route F43, which appears to largely follow a riparian corridor, is less preferable to the routes following 1-10 through Tucson. Further west of Tucson, routes around Tucson Mountain Park that do not cross the Tucson Mitigation Corridor property are preferable.

Interconnecting/Valley Routes

1) The proposed route (C130, 140, 150, 171) through the Sulphur Springs Valley would have an immediate and substantive impact on wildlife and habitat. Additionally, the route could have a cumulative effect of attracting additional power projects or other developments.
2) In general, all the routes through the San Pedro River Valley are problematic, especially those along the river and along the foothills of the Santa Catalina Mountains on the westside. One route, C 500 and C 470, could be feasible with substantive mitigation and siting evaluation. Finally, all routes crossing the San Pedro River (e.g., C 170, C591, and C 620 near the Department's property) are of concern.

Northern Routes

1) Evaluate the feasibility of a new, more northern route (on C 10) to avoid crossing the Department's Cluff Ranch Wildlife Area.
2) Two proposed routes north of C 620 near the terminal point south of Casa Grande, appear less desirable in comparison to nearby alternatives (Proposed 30 and Alternate 13).
3) A section of C 170, where it crosses the northern end of the Galiuro Mountains, would negatively impact a considerable amount of roadless areas and is of particular concern to the Department. A route through this area would require substantive coordination with the Department on siting, construction by helicopter only, and mitigation to compensate for current and future damages to wildlife and habitat.

JUN 10 2010

Lisa Spietsma
PO Box 1288
Benson AZ 85602

May 1, 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY -5 AM 11:31
STATE OFFICE
SANTA FE, NEW MEXICO

To Whom it May Concern ~

Please keep Sun Zia lines out of the San Pedro River Valley. This is incredible untouched, wild, & important land. There isn't much of that left in the U.S. Please do the right thing - leave the river valley alone! If we build power lines & roads everywhere, future generations will know only one thing: how stupid & short-sighted the previous generations!

Please use Tucson, I-10 corridor or SOME OTHER ROUTE that doesn't go through the River Valley!

epg
JUN 18 2010

Thank You.

Lisa K. G. Spietsma

5-29-2010

Received by BLM 6/2/2010

BLM ~ Sun Zia Project

Please respect rural landowners of Polvadera and pursue the alternate route that follows White Sands western fenceline.

Many of us only have our rural lifestyle. It is unconscienable to take this from us.

JUN 18 2010

Grace Maestas
NBU 16
5 Encantada
Polvadera, N.M. 87828

Property/home owner of 15 years.

575-835-9363
grace.porvida@gmail.com

Confluence Mediation & Counseling

PAMELA ANN MARSHALL, LBSW, MA, LPCC #1844

2205 Miguel Chavez Rd. Suite F
Santa Fe, New Mexico 87505
(505) 989-3333 • Fax (505) 989-1442
www.confluencemediationandcounseling.com

Mon, Jun 7, 2010 9:51 PM

Subject: Transmission Line Project
Date: Monday, June 7, 2010 9:51 PM
From: pamela <saltamontes@pecos-nm.com>
To: <NMSunZiaProject@blm.gov>
Conversation: Transmission Line Project

RECEIVED
B.L.M.-MAILROOM
2010 JUN 14 PM 12:56
STATE OFFICE
SANTA FE, NEW MEXICO

June 6, 2010

New Mexico Bureau of Land Management:

Although I support the construction of a new power line to support "green power" I believe this line should run along routes to the east and south and NOT along the Rio Grande Corridor flyway. Routes with valley crossings between Socorro and Belen would pose a great hazard to the seasonal and daily flight patterns of the Sandhill Cranes and Snow Geese as well as the hundreds of thousands of birds that migrate along this route. River crossings and valley transmission lines will kill many avifauna that already suffer from reduced and threatened populations due to habitat loss and climate change relative to global warming.

The route along the eastern boundary of White Sands is the most feasible, I believe. Any route through the Sevilleta National Wildlife Refuge, the Bosque del Apache National Wildlife Refuge and the Rio Grande Corridor is absurd and completely abusive.

Furthermore, it would be eco-smart to color the lines in some fashion that birds may see, even at night.. As for the disruption to the ground regarding pole installation, non-contaminating products and minimal soil disruption should be observed. In other words, don't use a bulldozer if you can use a smaller and more maneuverable machine such as a bobcat.

Sincerely,

Pamela Marshall

Pamela Canyonrivers Marshall
Pecos, New Mexico

epa
JUN 18 2010

ANDREA BLODGETT
79 Duke Lane, Lemitar, NM 87823-9730

14 June 2010

RECEIVED
B.L.M.-MAILROOM
2010 JUN 15 AM 11:55
STATE OFFICE
SANTA FE, NEW MEXICO

Mountain Mail
P. O. Box 62
Socorro, NM 87801

RE: SPECTER OF SUNZIA

Greetings:

BRAVO! County Commissioners Rosie Tripp and Daniel Monette for their "stand" regarding the proposed SunZia transmission line route into our local area.

As I recall there were protests some years back when power lines were run along the Continental Divide to provide electrical service to Arizona. And did I recently read power lines were being run from Arizona to serve New Mexico?

Southwestern Power Group, AKA, SunZia? But just WHO pays and WHO profits? And WHY thru New Mexico?

Our wonderful open vistas have already been invaded by American Tower.

About the ONLY plus to having SunZia invade with power lines would be to serve the area—Socorro Electric Coop might have some rate competition!

"THEY" want New Mexico's wind, sun and water. As my New Jersey refugee husband always said: "It's time to close the borders."

Sincerely,

Andrea Blodgett

JUN 18 2010

COPY: BLM—SunZia Transmission Line Project
P. O. Box 27115
Santa Fe, NM 87502-0115

Sunday, June 13, 2010

To Whom It May Concern:

My name is Heath R. Connell and I have been a lifelong resident of the state of New Mexico. My family purchased our ranch two miles south of Gran Quivira in the early 1900's which has been the heart and soul of our family as well as the personal connection I have to my homeland. As a New Mexico resident proud of my ranching heritage, I feel that it is necessary to express my utter dismay with a proposal from SunZia Power Company for installing high voltage power lines on or near my families' property at Gran Quivira. This proposal, if put into action will destroy and permanently alter the very foundation of New Mexico's heritage, culture, and economic means of production in relation to ranching.

New Mexico is known for its remoteness shrouding history and heritage, breathtaking vistas and incomparable diverse landscapes; all of which have been protected by New Mexico's unrelenting ability to preserve our heritage and lifestyles without sacrificing our values and culture. Another challenge faces the Land of Enchantment, sacrifice of our culture, heritage and resources for the inflammatory promises of economic gain for the state? I ask, is a high voltage power transmission line, which soul purpose is to export our energy to our neighboring states benefiting New Mexico? The answer is no, allowing other states to use our property and resources for their own personal gain seems a little like prostitution in relation to resources. Individuals whom support such seditious plans for our beautiful state obviously are forgetting the long-term impacts of such types of so called "development." Has anyone considered the impact upon current means of production, land values, physical impacts to land as well as humans, or the destruction of New Mexico's heritage?

I would like to also remind everyone that we still live in the United States of America, a nation founded upon life, liberty and the pursuit of happiness. Throughout our nations history we have known that the key to our success is property. Americans take great pride in the private property which we have worked hard to purchase and maintain. I am no different; my families' property is the most important part of our families' life and survival in this great nation. For any entity or individual to make any proposal which will affect my property or any other Americans property is nothing less than idiotic. We are capitalists in America and so believe in a free market and free enterprise. So when a company or government makes proposals which can potentially affect private property or individuals without their knowledge or consent that borders on communism and tyranny. This company and our government on county, state, and federal levels have all neglected to adequately inform the general public about their proposal for energy transmission lines which will directly impact our lives. I would like to completely remove any doubt in the minds of SunZia or our government about my stance which is in complete opposition to the installation of this transmission line. Please fully consider the impact and result of trying to go against the will and wishes of the American public. To date anyone who attempts to accomplish a goal without the support of the public undoubtedly fails due to the fact that we are still a nation of the people, by the people and for the people.

Sincerely,
Heath R. Connell

Heath R. Connell

JUN 18 2010

Board of Supervisors

Patrick G. Call
Chairman
District 1

Ann English
Vice-Chairman
District 2

Richard R. Searle
Supervisor
District 3

Michael J. Ortega
County Administrator

James E. Vlahovich
Deputy County Administrator

Katie A. Howard
Clerk

DATE RECEIVED
6/18/10

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2010 JUN 11 PM 1:37
STATE OFFICE
SANTA FE, NEW MEXICO

June 7, 2010

Adrian Garcia, Project Manager
SunZia Southwest Transmission Project
Bureau of Land Management
PO Box 27115
Santa Fe, New Mexico 87502-01 15

Re: SunZia Southwest Transmission Project

Dear Mr. Garcia,

As the County Supervisor representing District 3 in Cochise County, which covers the entire portion of the proposed Sunzia Transmission Project crossing Northern Cochise County, I would like to share my thoughts on the project. The Sunzia Transmission Line Project appears to be a necessary project and could be beneficial for many areas of Cochise County including the San Simon and the Bowie areas. District 3 also includes a large portion of the San Pedro River Valley and as the representative of that area I would encourage the BLM to keep the Sunzia route to existing transmission or utility corridors that already cross the San Pedro and would oppose any new North/South transmission corridor.

Sincerely,

Richard Searle
Cochise County Supervisor
District 3

Cochise County • 1415 Melody Lane, Building G • Bisbee, Arizona 85603
(520) 432-9200 • FAX (520) 432-5016 • email: board@cochise.az.gov
www.cochise.az.gov

United States Department of the Interior

NATIONAL PARK SERVICE
Saguaro National Park
3693 South Old Spanish Trail
Tucson AZ 85730

IN REPLY REFER TO

RECEIVED
B.L.M.-MAILROOM
2010 APR 30 PM 12:50
STATE OFFICE
SANTA FE, NEW MEXICO

April 16, 2010

Adrian Garcia
BLM Project Manager
SunZia Southwest Transmission
Bureau of Land Management
New Mexico State Office
P.O. Box 27115
Santa Fe, NM 87502-0115

Dear Mr. Garcia,

Thank you for the opportunity to comment on the SunZia Transmission Line Project and Environmental Impact Statement. I was glad to attend the informational meeting with you, the county and other agencies on April 2 to get more information about the project. Although we understand the necessity for providing renewable energy to the southwest, we have some significant concerns with siting of the transmission lines adjacent to Saguaro National Park.

Saguaro National Park (SNP) is comprised of two disjunct units (Rincon Mountain District and Tucson Mountain District) located immediately east and west of the city of Tucson. According to the current updated project area map that you discussed in the April 2 meeting, both districts of the park are within the Study Area for the proposed transmission line routes. Our comments and concerns are related to direct and indirect potential impacts to park values.

The mandate of the National Park Service is to preserve and protect the scenery, and natural and cultural resources of parklands for the enjoyment of the American public, and to leave them unimpaired to be enjoyed by future generations (16 USC 1-4). The "scenery," includes the natural viewshed, as well as the landscape. The scenery of a national park, like air, water or wildlife, is a valuable resource that can easily be degraded or destroyed by surrounding development.

In addition, both districts of the park contain substantial designated Wilderness areas, comprising over 78% of the park's total acreage. According to the Wilderness Act, areas with this designation must be managed in their primitive condition, where "the impact of man's work [is] substantially unnoticeable." Location of the transmission lines adjacent to either unit of the park would have significant negative impacts to both the park's viewshed and its Wilderness Character.

In addition to these potential visitor experience and wilderness impacts, we are concerned about the impacts to local natural resources, particularly the wildlife habitat loss and fragmentation that occurs from such a large linear development. Insularization of the park from other protected

JUN 18 2010

natural areas is a crucial management issue for wildlife. Both districts of the park are increasingly surrounded by urbanization and development. The San Pedro River Valley, on the east side of the Rincon Mountain District of the Park, is an important wildlife corridor and link to other protected natural areas such as the Galisro and Redfield Canyon Wilderness Areas.

Saguaro National Park receives over 700,000 visitors to the park each year from all over the world, generating over $23 million in visitor spending. In combination with the Arizona-Sonora Desert Museum and Pima County's Tucson Mountain Park west of Interstate 10, millions of visitors and citizens rely on these areas for rest, recreation, solace, and education about our unique Sonoran Desert resources. We cannot afford to alter this landscape.

We respectfully request that the potential corridors shown west of the park's west boundary, as well as the potential San Pedro River Valley corridor east of the park's east boundary, be removed from consideration. We support either the No Action alternative, or location of the transmission lines well north of the city of Tucson, bypassing the city altogether.

Saguaro National Park would like to keep apprised of this project. Please add me and Chief of Science and Resource Management, Meg Weesner, to your mailing list. If you have any questions regarding our comments or concerns, please contact me (520.733.5101) or Ms. Weesner (520.733.5170). We appreciate the opportunity to provide these comments.

Sincerely,

Darla Sidles
Superintendent

epa
JUN 18 2010

DATE RECEIVED
6/14/10

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed high-power transmission route through the Aravaipa Valley, or through any other Arizona wilderness area. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. Arizona residents will benefit minimally from this plan, while bearing the brunt of the environmental impact.

SunZia needs to abandon any plans to construct transmission lines through the Aravaipa or the San Pedro. Routes through Tucson using existing infrastructure corridors are available and would have far less impact on the environment. It is an outrage that a so-called "green" energy project would willingly destroy millions of acres of pristine Arizona wilderness.

Peggy M White 6-5-10
Signature Date

Name & City: JEP D. WHITE, GLOBE AZ.
BORN ON ARAVAIPA 3-23-23

Ema Simm
P.O. Box 1057
Benson, AZ 85602
520 586-3262

DATE RECEIVED
4/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115
Santa Fe, NM 87502-0115.

Regarding: Public Commentary on the SunZia Transmission Project in the lower San Pedro River Valley

Dear Sir or Madame,

I am writing in opposition of the SunZia plan to run power lines and high towers through the San Pedro Valley and Southeast Arizona. I believe my reasons could help you prevent the destruction of the economy of this area.

If the long-term is being considered, power lines do not need to be on poles: powerlines can go underground. According to a friend of mine who works for a power company, in just 12 years, the difference between the costs of putting power lines underground versus the costs of stringing wires up on poles is recouped because of lower maintenance costs. Putting in power lines on poles is short-term thinking, and does not take into account the costs to the comunities that they run through.

Advances in technology are going to make the powerlines obsolete. Every year, here and abroad, people get closer to creating technology that allows most energy needs to be met on site, even for private houses. Two examples that have already been shown to work are thorium nuclear reactors that produce negligable waste, and E-Boxes, energy plants already in use that convert just about any form of energy into electricity.

Tourism. People come for the wide open spaces and the views. This is prime, stereotypical Cowboy country. Many local people depend on visitors coming to dude ranches and the wild west atmosphere. Those Huge, 150 foot towers will be seen throughout the valley, from I-10 and Highway 90 to Sierra Vista. They will detract from the atmosphere and do not fit in this landscape. (And were you aware of the local airports?)

Supply and Demand of technology. How can you call the technology green when it destroys environments?

Do not destroy this area for the sake of short-term benefits to California. Who is going to pay to take down the power lines when they are no longer needed?

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:30
STATE OFFICE
SANTA FE, NEW MEXICO

Sincerely,

Ema Simm
U.S. Citizen

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 1:20
STATE OFFICE
SANTA FE, NEW MEXICO

June 7, 2010

Mr. Adrian Garcia

Bureau of Land Management

SunZia Transmission Line Project

301 Dinosaur Trail

Santa Fe, NM 87508

DATE RECEIVED
6/18/10

RE: SunZia Transmission Line Project

Dear Mr. Garcia,

I am writing to express my outrage over the concept of the proposed SunZia transmission lines crossing through the Santa Terresa and Galiuro mountains as proposed on the maps for the project. I can assure you sir that these routes are completely inappropriate for such use and those of us that hold these wild areas precious will fight forever to keep them in their current wild state. That any person would deem it appropriate to foul such an important wildlife corridor with such a project speaks to the complete lack of understanding of the nature and importance of this area. And to destroy such an area in the quest for "green" energy is an even greater insult. In my mind that any person could even consider such a route makes me believe they are not in any way qualified to be working on such a project. It is tantamount to proposing that the project be placed in the Grand Canyon! I can assure you sir, this will not stand! We who live here and those conservation organizations that work here will fight this project with every resource available to us. We will fight this in the courts, we will fight this in the political venues and we will fight this in the arena of public opinion.

When you met with the Winkelman NRCD at the campus of the Central Arizona College, Aravaipa Campus, you assured us that this route would never really be considered as it was so obviously wrong. I am now hearing from other sources that this is actually the preferred route as it will be the cheapest. I doubt that it will prove to be very cheap when all of the lawsuits are completed, if they are ever completed.

I am aware of the new proposed route that uses existing utility corridors in the Tucson area and I believe this is the only viable route. And this route is only viable if it is found that this transmission line is even necessary. I really find it hard to believe that the wind doesn't blow in California and Nevada where this power is destined to be sent. It is far past time that the large urban area users of such power (Los Angeles, Las Vegas) quit trying to burden the rest of us with their needs!

Attached please find comment cards and letters of others opposed to this project. There will be hundreds to follow if necessary.

Sincerely,

Charles W. Allen

Charles W. Allen

Vice President Aravaipa Property Owners Association

Secretary, Oracle Land Trust

cc: Secretary of Interior, Ken Salazar

Received by BLM
on 6-2-2010
AAG

June 1, 2010

Adrian Garcia
BLM
SunZia Transmission Line Project
PO Box 27115
Santa Fe NM 87502-0115

RE: Extension of SunZia Project Comment Period

Dear Mr. Garcia,

This letter is a follow up to an email I sent to you today. That email was a request on behalf of Socorro County and the Board of County Commissioner to extend the comment period beyond the June 10, 2010 deadline. We have heard from several of our constituents and feel that the 45-day period is not sufficient to address the additional proposed routes through our County.

The Board of County Commissioners will send formal comment electronically following our regular meeting on June 8th. However, we respectfully request an extension of the comment period in order to best address the concerns from our community members.

Thank you for your consideration.

Sincerely,

Delilah Walsh
County Manager

Pc: File: SunZia Project
Board of County Commissioners

EPA
JUN 18 2010

Board of County Commissioners

Rosalind F. Tripp
Chair, District I

Daniel P. Monette
Vice Chair, District IV

Rumaldo J. Griego
District II

Phillip Anaya
District III

Juan Jose Gutierrez
District V

PO Box I, Socorro, NM 87801
Phone: 575.835.0589 | Toll free: 800.727.0206
Fax: 575.835.4629
dwalsh@co.socorro.nm.us | www.co.socorro.nm.us

United States Department of the Interior

BUREAU OF RECLAMATION
Phoenix Area Office
6150 West Thunderbird Road
Glendale, Arizona 85306-4001

TAKE PRIDE IN AMERICA

RECEIVED
BLM-MAILROOM
2010 APR 28 AM 11:41
STATE OFFICE
SANTA FE, NEW MEXICO

IN REPLY REFER TO:
PXAO-1500
ENV-7.00

APR 26 2010

MEMORANDUM

To: Mr. Adrian Garcia, Project Manager, SunZia Southwest Transmission Project, Bureau of Land Management, New Mexico State Office, P.O. Box 27115, Santa Fe, New Mexico 87502-0115

From: Carol Lynn Erwin
Area Manager

Subject: Scoping Comments on Expansion of Study Area, SunZia Southwest Transmission Project

In response to your April 2010 Project Update, and expansion of the SunZia Project study area, I am providing comments specific to the Avra Valley corridor. This memorandum supplements my earlier written comments dated February 25, 2010, on the SunZia Project. The Bureau of Reclamation recognizes and supports the need for renewable energy sources.

I appreciated the opportunity for Mr. Bruce Ellis of my staff to meet with you and the project proponent and consultants on April 2 in Tucson. However, the Avra Valley route that was discussed in that meeting would bisect Central Arizona Project's (CAP) Tucson Mitigation Corridor, which serves as a preserve for wildlife and plants and provides an undeveloped corridor for large mammals to move between the Tucson Mountains to the east and the Roskruge Mountains to the west. Reclamation acquired the 4.25-square-mile corridor as partial mitigation for biological impacts resulting from construction and operation of the CAP Tucson Aqueduct. Reclamation signed a cooperative agreement with the Arizona Game and Fish Department and the Pima County Parks and Recreation Department for the management of these lands, including agreement to oppose any further development within the corridor. Reclamation has consistently opposed, and continues to oppose, use of the corridor for any use that could adversely affect plants, wildlife, and wildlife movement for which the corridor was established.

I would also point out that visual impacts from sensitive viewing areas such as the Arizona-Sonora Desert Museum were a major issue during planning for the CAP Aqueduct in this area. The Tucson Mitigation Corridor, by preserving these 4.25 square miles of land from future development, helped to mitigate these impacts as well. Based on commitments we have made to prohibit future development within this mitigation corridor, we cannot support the Avra Valley route and do not believe it is a reasonable alternative that should be considered in the Environmental Impact Statement for the SunZia Project.

If you have any questions, please contact Mr. Bruce Ellis of my staff at 623-773-6250.

JUN 18 2010

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

DATE RECEIVED 6/18/10

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

John E. Martin 6/2/10
Signature & Date JOHN E. MARTIN

4922 WHISPERING PINES
Name & City GLEN ARBOR, MI 49636

PROPERTY OWNER ON ARAVAIPA CREEK.

Received At BLM on 6/7/2010 AAG

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Post Office Box 1306
Albuquerque, New Mexico 87103

RECEIVED
B.L.M.-MAILROOM
2010 MAR 15 AM 10: 59
STATE OFFICE
SANTA FE, NEW MEXICO

In Reply Refer To:
FWS/R2/ES-HC/EC/044238

MAR 11 2010

Memorandum

To: Project Manager, SunZia Project, Bureau of Land Management, Santa Fe, New Mexico

From: ACTING Regional Director, Region 2

Subject: Comments on the Alternative Routes for the SunZia Southwest Transmission Project in Arizona

The U.S. Fish and Wildlife Service (Service) is providing supplemental comments (attached) on the Alternative Routes for the SunZia Southwest Transmission Project (Project) in Arizona. The Service provided comments dated September 14, 2009, during the original scoping period for the preparation of the Environmental Impact Statement for the SunZia Southwest Transmission Project. Our prior memorandum expressed general concerns in sections entitled "Wetlands and Aquatic Resources, Bats, General Project Planning, Concerns, and General Construction and Maintenance Issues." These general concerns also apply for the portion of the project that may be implemented in Arizona.

Our supplemental comments are in response to recent proposals, information, and maps found on the SunZia website dated January 11, 2010.

We appreciate your consideration of our supplemental comments and recommendations. If you have any questions, please contact Dean Watkins, Conservation Planning Coordinator, Ecological Services, Region 2, at 505-248-6666; or Sherry Barrett, Assistant Supervisor, Ecological Services Field Sub-office, at 520-670-6150. We appreciate the opportunity to comment.

JUN 18 2010

Attachment

cc: Associate State Director, Bureau of Land Management, Phoenix, AZ
State Director, Bureau of Land Management, Santa Fe, NM
Regional Chief, National Wildlife Refuge System, Region 2, Albuquerque, NM
Chief, Migratory Birds, Region 2, Albuquerque, NM
Supervisors, Ecological Services Field Office, Phoenix, AZ and Albuquerque, NM
Assistant Supervisor, Ecological Services Sub-Office, Tucson, AZ
Assistant Regional Director, External Affairs, Regional Office, Albuquerque, NM, Attention: Tom Buckley
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Manager, Arizona Game and Fish Department, Tucson, AZ

U.S. Fish and Wildlife Service Comments

On

Arizona Portion of the SunZia Transmission Project

These comments are in response to recent proposals, information, and maps found on the SunZia website and dated January 11, 2010. The original proposed route was an east/west crossing of the San Pedro River Valley. A map dated January 11, 2010, depicted several alternative routes, in more detail than previous presentations, traversing the San Pedro River Valley, generally south to north. The majority of the U.S. Fish and Wildlife Service's (Service) concerns regarding the project and threatened and endangered species are within the San Pedro River Valley.

A second map, dated January 11, 2010, entitled "Arizona Revised Routes" depicted an alternative route labeled "Routes Subject to Feasibility Analysis." This is the first time we have seen this alternative route. We recognize that this alternative and its variations are currently outside the study area for the most part; however, the Service believes this route has the potential to be the least environmentally damaging alternative. We are providing more detailed concerns and recommendations. These are expressed in the following:

Federally Listed Species

We reiterate the guidance provided in our September 14, 2009, memorandum and further note that section 7(a)(1) of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544), as amended, directs Federal agencies to utilize their authorities in the furtherance of the purposes of the ESA by carrying out programs for the conservation and recovery of listed species.

Our primary concerns regarding this project are focused on the numerous threatened and endangered species within the San Pedro River Valley in Cochise, Graham, Pima, and Pinal Counties, Arizona. Our concerns are discussed at a regional scale, due to the proposed numerous transmission routes and their variations being considered.

The habitat associated with the lower San Pedro River is important to the recovery of the endangered southwestern willow flycatcher (flycatcher) (*Empidonax traillii extimus*). The river has supported as many as 164 breeding territories of the species, the largest number of any single study site in Arizona (Ellis *et al.* 2008). The actual numbers are likely appreciably higher as not all breeding habitat is surveyed. The San Pedro River, along with Roosevelt Lake to the north, account for approximately 70 percent of the species' abundance in Arizona and 30 percent range wide (Ellis *et al.* 2008). We consider the protection and maintenance of habitat in these areas to be a priority, because flycatchers in these areas may function as source populations to smaller populations in the region. The relative importance of the lower San Pedro River is likely to become greater as reservoir operations at Roosevelt Lake continue to intermittently inundate habitat. Conservation of flycatchers along the San Pedro River is crucial for the recovery of the species at the recovery unit and range wide scale. The lower San Pedro River contributes to flycatcher abundance within the Recovery Plan's Middle Gila/San Pedro Recovery Management

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Unit to the extent that the unit is already meeting recovery goals (USFWS 2002). Approximately 60 river miles of the San Pedro River between the Hot Springs Canyon confluence and the Gila River and approximately 39 miles of the Gila River from the mouth of the San Pedro River to the Ashurst-Hayden Diversion Dam are critical habitat for the species (USFWS 2005) (see http://criticalhabitat.fws.gov/ for specific information).

Approximately 28 miles of Aravaipa Creek are critical habitat for the threatened loach minnow (*Tiaroga cobitis*). Approximately 28 miles of Aravaipa Creek and 13 miles of the lower San Pedro River are critical habitat for the threatened spikedace (*Meda fulgida*). An additional 39 miles of the Gila River from the San Pedro River confluence to the Ashurst-Hayden Diversion Dam are also critical habitat for the spikedace (USFWS 2007) (see http://criticalhabitat.fws.gov/ for specific information). Aravaipa Creek and its watershed are key locations for the conservation of these and several other species of native fishes, including the endangered Gila topminnow (*Poeciliopsis occidentalis occidentalis*) and endangered desert pupfish (*Cyprinodon macularis*). The site currently supports the largest diversity of native species in Arizona.

Streams within the Muleshoe Cooperative Management Area in Cochise County also support re-established, listed native fishes, including spikedace, loach minnow, Gila topminnow, and desert pupfish. The endangered Gila chub (*Gila intermedia*) also occurs there. While these populations are fairly new, we anticipate that they will become established in time, and monitoring efforts in the first 2 years after reintroduction have shown persistence for all four species. In addition, the upper reaches of Redfield (6.1 miles), Bass (3.4 miles), and Hot Springs (6.5 miles) canyons are critical habitat for the Gila chub. These stream reaches are on and in the vicinity of the Muleshoe Ranch Cooperative Management Area.

The proposed transmission routes, both within and outside of the San Pedro River Valley, that intersect habitat containing paniculate agaves [i.e. Palmer's agave (*Agave palmeri*) or Parry's agave (*P. parryi*)] or saguaro cactus (*Carnegia gigantean*) may result in effects to the endangered lesser long-nosed bat (*Leptonycteris yerbabuenae*). Lesser long-nosed bats are known to roost within caves located in canyons that are tributaries to the lower San Pedro River.

Impacts to Sonoran desertscrub containing saguaros may also affect the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) and the Sonoran Desert population of the desert tortoise (*Gopherus agassizii*). Petitions to list both the pygmy-owl and the tortoise were found to contain substantial information, and both species are presently awaiting their respective 12-month findings by the Service.

The lower San Pedro River supports large numbers of western yellow-billed cuckoos (*Coccyzus americanus occidentalis*), a candidate for listing as well as a species afforded the protections of the Migratory Bird Treaty Act, as discussed in our September 14, 2009, memorandum.

The State of Arizona has been determined to be suitable for the establishment of a Nonessential Experimental Population of the northern aplomado falcon (*Falco femoralis septentrionalis*)

under section 10(j) of the ESA. While reintroduction efforts under this program are currently underway only in New Mexico, portions of southeastern Arizona contain habitat capable of supporting the species. We discussed conservation measures for the northern aplomado falcons in our September 14, 2009, memorandum and we incorporate those recommendations here via reference.

Migratory Birds

Migratory Birds and the Migratory Bird Treaty Act were discussed in our September 14 and December 15, 2009, memoranda, and those discussions are incorporated herein via reference.

Our prior correspondence discussed our concerns with the adverse interactions between birds and power lines, in particular, to sandhill cranes (*Grus canadensis*) wintering in the Socorro Valley and on the Bosque del Apache National Wildlife Refuge in New Mexico. We wish to express additional concern for sandhill cranes that winter in the Willcox Playa, Whitewater Draw, and Sulphur Springs Valley area in Cochise County, Arizona. The Arizona Game and Fish Department (AGFD), which manages the Willcox Playa and Whitewater Draw wildlife areas, recently reported over 40,000 cranes in the area (AGFD 2010). These cranes venture from wetlands in the southern Sulphur Springs Valley to dispersed agricultural areas, including lands north of Interstate 10, on the proposed SunZia route paralleling the highway and are at risk for strikes. In addition, the Sulphur Springs Valley hosts large concentrations of wintering waterfowl and raptors. We reiterate that all recommendations for avoidance, made in our prior memoranda, should be implemented in Arizona.

The upper San Pedro River is an important migratory corridor for songbirds in Arizona (Rojo *et al.* 1998). It is likely that the lower San Pedro River exhibits similar avian diversity to the San Pedro Riparian National Conservation Area, which itself contains approximately 400 species of birds (BLM 1998), nearly all of which are Migratory Birds. The lower San Pedro River hosts a large population of Bell's vireos (*Vireo belli arizonae*). Bell's vireo is listed by Partners in Flight as a Bird of Conservation Concern in 14 Bird Conservation Regions. Bell's Vireo is on the Audubon Society's Red Watchlist (species of Highest National Concern) (Kus *et al.* 2010). This species occurs throughout mesquite bosqués along the lower San Pedro River, and was largely responsible for much of the lower river being designated an Important Bird Area by the Audubon Society.

Land Conservation

The effects of the aforementioned inundation at Roosevelt Lake resulted, through consultation with the Service, in the purchase of occupied and/or restorable habitat at several locations along the lower San Pedro River. The Salt River Project and Bureau of Reclamation have acquired approximately 2,500 acres of lands to mitigate for impacts to flycatchers at Roosevelt Lake under a Habitat Conservation Plan and Biological Opinion, respectively. Avoidance of these conservation lands, which are to be managed specifically for flycatchers, is critical for the

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recovery of the flycatchers. A map of conservation investments along the San Pedro River can be downloaded at http://azconservation.org/downloads/data/san_pedro_river_watershed_maps/.

Three parcels totaling approximately 1,000 acres on the San Pedro River near the Aravaipa Creek confluence were recently conveyed to AGFD as part of a Natural Resource Damage Assessment settlement against ASARCO, a mining company. These lands will be managed by AGFD, and co-managed by the Service for wildlife conservation. The 7B Ranch, situated on the eastern banks of the San Pedro River near Mammoth, represents what is likely one of the largest intact mesquite bosqués in the United States. The approximate 3,000-acre parcel is presently under conservation management by The Nature Conservancy (TNC) on behalf of the Resolution Copper Company, and is also part of a land exchange currently in legislation which is in progress. The 7B Ranch was the site of Gavin and Sowls' (1975) intensive bird surveys, in which 95 species were observed. The Saguaro-Juniper Corporation, a landowner/livestock operator organization holds 1,000 acres of private lands, 440 acres under conservation easements, and 8,000 acres in lease near Cascabel.

The Service has participated in Partners for Fish and Wildlife projects with private landowners on the San Pedro River near Benson, the 7B Ranch, and the TNC Dudleyville Preserve (a portion of the aforementioned Bureau of Reclamation conservation lands).

The conservation lands described above are in addition to Federal lands managed by the Bureau of Land Management and, in higher elevations, the Forest Service and National Park Service.

Impacts to Federally Listed Species Based on the Proposed Alternative Routes

We anticipate that all proposed routes in the San Pedro River Valley will exhibit a similar set of direct effects, including:

All potential San Pedro River routes will result in direct and permanent loss of habitat associated with clearing of vegetation at tower sites, under the transmissions wires, along service roads, and other ancillary facilities. Depending on the preferred location, these losses will reduce the extent of habitat for several threatened and endangered species, including flycatcher breeding and migration habitat (including critical habitat) and lesser long-nosed bat foraging habitat (saguaros and agaves). Loss of saguaros and riparian vegetation also equates with a loss of habitat for the cactus ferruginous pygmy owl. Loss of riparian vegetation will negatively affect the status candidate yellow-billed cuckoo. Clearing of land in Sonoran desertscrub areas would affect the desert tortoise.

All proposed alignments will increase habitat fragmentation, which include both small and large-scale impacts. We anticipate a permanently increased edge effect in any portion of a riparian area that is cleared, thus favoring the occurrence of and subsequent nest parasitism by brown-headed cowbirds, which will in turn affect flycatchers, Bell's vireos, and some proportion of approximately 100 or more species of resident and neotropical migratory birds. We also anticipate regional-scale fragmentation for species attempting to traverse the San Pedro River

Valley from the mountain ranges to the east and west of the river. Threatened Mexican spotted owls are among the numerous species likely to move, via tributary streams and across upland areas, across the San Pedro River Valley from mountain range to mountain range. Such additional habitat fragmentation is undesirable.

We anticipate direct mortality of avian species (especially cranes, waterfowl, and diurnal raptors) and bats, including the endangered lesser long-nosed bat, at towers and transmission lines.

The general suite of indirect effects common to all proposed routes includes:

Increased and ongoing sedimentation from all cleared areas is anticipated. This incremental increase in sediment loading to the San Pedro River and tributary streams, depending on location, is anticipated to directly affect native fishes occurring within Aravaipa Creek, streams within the Muleshoe Cooperative Ecosystem Management Area, and/or the mainstream San Pedro River. Spikedace are particularly vulnerable, as Aravaipa Creek is one of only two stable populations range wide. Spikedace critical habitat on the San Pedro River would be affected by any alignment between the Aravaipa Creek confluence and the Gila River.

We anticipate increased vulnerability to invasions of nonnative and/or invasive native species in these cleared areas, which in turn may indirectly degrade adjacent areas currently dominated by native plants via competition, changes in nutrient cycling, and an increased risk of wildfire.

Recommendations

Given the magnitude and diversity of impacts that would likely result from the proposed routes in the San Pedro River Valley, we respectfully request that an alternative route be considered for the western portions of the greater east/west route in Arizona. We specifically recommend that a route be considered that crosses the San Pedro River near Benson and parallels Interstate 10 through the Tucson metropolitan area and thence northward, thus avoiding a suite of large-scale adverse effects in the San Pedro River Valley. In addition, if this recommended alternative route were confined to already-cleared lands, it could also avoid effects to the endangered Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*), which occurs in and near the southern portions of Tucson.

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Received at BLM on 6/7/2010 AK

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

DATE RECEIVED 6/18/10

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

Marie A Ouellette 6-3-2010
Signature & Date

Marie A. Ouellette Tucson Az 85712
Name & City

I am a land owner for 60+ years, with other members of my immediate family, and intend to retire there. I feel devasted that this could happen to that beautiful environment!
Marie A Ouellette

Received at BLM
on 6/7/2010
AAG

DATE RECEIVED
6/18/10

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

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Terrence D. Oberto 06-02-10
Signature & Date

TERRENCE D. OBERTO - TUCSON, AZ
Name & City

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

Received at BLM on 6/7/2010
MAG
DATE 6/18/10

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Dorothy M. Ouillette
Dorothy M. Ouillette 6-3-10
Signature & Date

88965 E. Aravaipa Rd Winkelman Az 85192
Name & City

Michael W. Ouillette
Michael W. Ouillette 6/3/10
Signature date

88965 E. Aravaipa Rd. Winkelman Az 85192
Name & City

Our family has owned property for over 60 years in Aravaipa and have protected its fragile environment. The thought of this type of destruction is disgraceful.
Michael Ouillette
Michael W. Ouillette

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Post Office Box 1306
Albuquerque, New Mexico 87103

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SANTA FE, NEW MEXICO

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In Reply Refer To:
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6/18/10

Memorandum

To: State Director, Bureau of Land Management, Santa Fe, New Mexico

From: Acting Regional Director, Region 2

Subject: Comments on the Expanded Study Area for the Proposed SunZia Southwest Transmission Project

This responds to the Bureau of Land Management (BLM) March 31, 2010, notice and request for comments on the expanded study area and additional alternatives for both the New Mexico and Arizona portions of the proposed SunZia Southwest Transmission Project. In response to scoping comments, preliminary studies, and consultations with interested parties and governmental resource agencies, BLM decided to consider potential addition of reasonable and feasible routes in two specific areas in New Mexico and Arizona.

The recent expansion of the New Mexico study area includes alternative routes further north of White Sands Missile Range (WSMR) and crossing the Rio Grande in the vicinity of the Sevilleta National Wildlife Refuge (NWR). These alternative routes have been suggested to reduce potential impacts to military training and testing operations at WSMR, Holloman Air Force Base and Fort Bliss Army Base.

Alternative routes within Pima County in the Tucson area and west of the San Pedro River will be evaluated. These potential routes are in addition to the initial range of alternative routes located in the vicinity of the San Pedro River and Sulphur Springs valleys.

The U.S. Fish and Wildlife Service (Service) provided comments dated September 14, 2009, for the original scoping period for preparation of an environmental impact statement. Those comments remain valid for the original project study area (New Mexico and Arizona) regarding the presence of listed species, best management practices for construction and operation, migratory birds, and unique habitats. We are providing our comments on the expanded study area.

New Mexico Expanded Study Area

On October 7, 2009, BLM announced an expanded study area for the New Mexico portion of the proposed project. Two general alternate routes were identified from public and agency comments on the original study area. These routes were located as follows: (1) along the eastern and southern perimeter of WSMR and crossing the Rio Grande south of Las Cruces; and, (2) along the western boundary and northwest corner of the WSMR and crossing the Rio Grande below the Caballo Reservoir.

In our December 15, 2009, comments we remained concerned about any alternative route crossing the Rio Grande Valley in the vicinity of the Bosque del Apache NWR because migrating and wintering water birds travelling along the Rio Grande corridor could collide with transmission towers and/or lines. The Service also stated its preferred alternative was the route along the eastern and southern perimeter of WSMR. This alignment would pose the least threat to water birds using the Rio Grande corridor between Bosque del Apache NWR in Socorro County and the Ladd S. Gordon Waterfowl Management Area to the north in Valencia County.

The March 31, 2010, notice of expanded study area in New Mexico includes three additional alternative routes that are further north of the WSMR and crossing the Rio Grande in the vicinity of the Sevilleta NWR. Due to potential conflicts with migratory bird movement along the Rio Grande and Los Pinos Mountains corridors, as well as Service goals to conserve and enhance private and public lands along the Rio Grande, we remain concerned about any route that passes through Sevilleta NWR or immediately adjacent to its boundary. Furthermore, we are concerned that migratory, wintering, and nesting birds and the riparian habitat on which they rely may be affected by any crossing of the Rio Grande in Socorro or Valencia County. For example, this corridor may support nesting southwestern willow flycatchers (*Empidonax traillii extimus*), a federally listed endangered species. We believe any crossing of the historic flood plain of the Rio Grande in the vicinity of Bosque del Apache NWR and northward should be subterranean to minimize impacts to migratory birds.

The Service believes that either of the two alternative routes provided in the October 7, 2009, expanded study area are preferable alternatives to any route that crosses the Rio Grande in the reach north of the Bosque del Apache NWR and in the vicinity of the Sevilleta NWR. The crossings of the Rio Grande in the Las Cruces area and below Caballo Reservoir are in reaches of limited riparian habitat and less bird use of the Rio Grande corridor.

Arizona Expanded Study Area

We have examined the various Arizona routes depicted on maps associated with expanded scoping sessions in April 2010, as well as maps dated May 17, 2010, provided by SunZia to Service staff subsequent to a May 7, 2010 meeting. We appreciate that concerns unique to Service trust resources in Arizona have been considered and integrated into the planning process. Please note that our comments are not site-specific due to uncertainties associated with the routes' exact alignments, potential construction methods, configurations, and maintenance

requirements. This brief analysis of potential effects to trust resources is thus not comprehensive or necessarily all-inclusive. We anticipate providing additional input as the project requires further analyses under section 7 of the Endangered Species Act.

The currently proposed Arizona transmission line alignments roughly parallel Interstate 10 from New Mexico westward to near Willcox or Benson, Arizona. At which point, different alignments are considered, including: (1) north along State Route (SR) 191 to near Safford, and then west, roughly paralleling U.S. Highway (US) 70 before traversing the Galiuro Mountains to enter the San Pedro River Valley near Aravaipa Creek; (2) various routes within the San Pedro River Valley; (3) a route skirting Tucson's eastern and northern areas, in and near the Pantano Wash and Rillito River area; and, (4) routes located generally south and west of the Tucson metropolitan area. The Service previously provided input regarding proposed routing within the San Pedro River Valley; the contents of our March 11, 2010, memorandum and attachment are hereby incorporated via reference.

The Service's concern with impacts to bats and migratory birds (e.g., raptors, waterfowl, and other large birds) is common to all potential routes listed above. Similarly, our concern with direct impacts to aquatic resources (via placement of structures and clearing of wetland and riparian-obligate vegetation and indirect impacts via sedimentation, elevated peak flows, and increased traffic) are common to all routes. The applicable narratives from our September 14, 2009 and March 11, 2010, memoranda are also incorporated herein via reference.

Our primary concern with the SR 191-US 70-Galiuro Mountain route is that it traverses between the Galiuro and Santa Maria mountains near the headwaters of Aravaipa Creek. This area presently has limited road access, and we anticipate the placement of a transmission line through this region would necessitate impacting an appreciable acreage of currently wild lands. Aravaipa Creek currently supports seven species of native fishes including longfin dace (*Agosia chrysogaster*), roundtail chub (*Gila robusta*), speckled dace (*Rhinichthys osculus*), desert sucker (*Pantosteus clarkii*), Sonora sucker (*Catostomus insignis*), spikedace (*Meda fulgida*), and loach minnow (*Tiaroga cobitis*), with Gila topminnow (*Poeciliopsis occidentalis occidentalis*) and desert pupfish (*Cyprinodon macularis*) present in the watershed. The latter four species are federally listed as threatened or endangered. Threatened Chiricahua leopard frogs (*Lithobates chiricahuensis*) occur in the eastern Galiuro Mountains. While relatively distant from the likely alignment, impacts to aquatic sites in the northern Galiuro Mountains could affect the ability for the species to expand its range northward.

Transmission line construction and maintenance could affect the federally threatened Mexican spotted owl (*Strix occidentalis lucida*), which occurs not only in forested areas, but also at unusually low elevations in the expanded study area's canyons. Mexican spotted owl critical habitat exists in both the Galiuro and Santa Teresa mountains. We believe the Galiuro Mountains' north-south orientation east of the San Pedro River Valley may indicate that the range is used by southward migrating raptors in the autumn.

The SR 191-US 70-Galiuro Mountain route also appears to traverse the lower slopes and foothills of the western Galiuro Mountains, an area supporting a robust community of saguaro cactus (*Carnegia gigantea*). Saguaro cactus blossoms are a forage resource for the federally endangered lesser long-nosed bat (*Leptonycteris yerbabuenae*), and the plants are a nest substrate for the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), formerly listed as federally endangered and currently under review by the Service. We would be concerned over the clearing of this habitat as well as the indirect effects of increased access and invasion by injurious, nonnative plants.

As described in our March 11, 2010, memorandum, the SR 191-US 70-Galiuro Mountain route crosses the lower San Pedro River in a reach supporting: (1) critical habitat for the spikedace; (2) a large breeding population of southwestern willow flycatchers, including critical habitat; and, (3) substantial conservation lands, many of which were acquired specifically to conserve the latter species in perpetuity and promote their recovery. In addition, the Service is currently exploring the feasibility of establishing a new NWR on the lower San Pedro River.

We anticipate that the Pantano Wash-Rillito River route would have appreciable impacts to aquatic, mesoriparian, and xeroriparian resources in the named streams. The Cienega Creek/Pantano Wash stream channel is critical habitat for the federally endangered Gila chub (*Gila intermedia*), and individuals of the species occur upstream. Endangered Gila topminnow have been documented at a diversion near where Pantano Wash enters the far eastern portions of Tucson. The federally endangered Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*) occurs upstream in Cienega Creek; the species could also persist in the perennial, shallow-water conditions at the diversion.

We have documented the presence of a roost site for endangered lesser long-nosed bats in the foothills of the Santa Catalina Mountains, north of the Rillito River, and limited telemetry data appear to illustrate that the species uses the stream courses in question as routes to access hummingbird feeders in the Tucson metropolitan area during years of reduced saguaro cactus blossom availability.

The potential routes that run south and west of Tucson may affect the federally endangered Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) and, in areas containing saguaro cactus, lesser long-nosed bats. In areas west of Tucson within the western bajadas of the Tucson Mountains and in the vicinity of the Central Arizona Project Canal, we have concerns over the interruption of wildlife corridors that link the mountain ranges east and west of the Avra Valley. Please note the Service must coordinate with tribes, pursuant to Secretarial Order 3206. Any route crossing lands of the San Xavier District and/or other lands of the Tohono O'odham Nation will warrant consultation between the Service, other Department of the Interior agencies, and affected tribes.

The Service has appreciable concerns with all routes that involve the clearing of rights-of-ways across presently wild or lightly-disturbed lands, especially those routes that move through or cross sensitive lands within the San Pedro River Valley. As noted above, numerous land conservation efforts have been accomplished and are ongoing in the San Pedro River Valley. We recommend that a route situated as close as possible to the Interstate 10 corridor through the Tucson metropolitan area be selected.

Summary

In summary, the Service prefers an alternative route in New Mexico that crosses the Rio Grande to the south of Bosque del Apache NWR and south of the Caballo Reservoir or in the Las Cruces area. These alternatives would lessen the impacts to migratory birds and riparian habitats. In Arizona, we prefer an alternative that avoids the San Pedro River Valley and recommend a route situated as close as possible to the Interstate 10 corridor through the Tucson metropolitan area. This alternative would minimize impacts to migratory birds, federally listed species, bats, and ongoing cooperative land conservation efforts, including potential creation of a new NWR.

The Service will continue to provide input and assist with compliance activities associated with the National Environmental Policy Act, the Clean Water Act, and the Endangered Species Act. Furthermore, we will be forwarding you a draft Memorandum of Understanding between the BLM and the Service whereby we would act as a Cooperating Agency in preparation of the Environmental Impact Statement for the SunZia Transmission Project. The Service supports the use of best management practices in the construction and operation of the project that avoid and minimize environmental impacts.

Service contacts for local/field level coordination on the SunZia project are as follows:

Wally Murphy, Supervisor, New Mexico Ecological Services Field Office, at 505-761-4781;
Santiago Gonzales, Deputy Supervisor, New Mexico Ecological Services Field Office, at 505-761-4720;
Dr. Patricia Zenone, Contact for northern aplomado falcon, New Mexico Ecological Service Field Office, at 505-761-4718;
Steve Spangle, Supervisor, Arizona Ecological Services Field Office, at 602-242-0210;
Sherry Barrett, Assistant Supervisor, Arizona Ecological Services Field Office, at 520-670-6150;
Jason Douglas, Project Biologist, Arizona Ecological Services Field Office, at 520-670-6150
Tom Melanson, Refuge Manager, Bosque del Apache National Wildlife Refuge, at 575-835-1828;
John Vradenburg, Supervisory Refuge Biologist, Bosque del Apache National Wildlife Refuge, at 575-835-1828;
Kathy Granillo, Refuge Manager, Sevilleta National Wildlife Refuge at 505-864-4021

Thank you for the opportunity to participate in the scoping process for the expanded study area for this project proposal. Please forward inquiries about the Service's position on the overall project and review of National Environmental Policy Act documents to the Regional Office on the letterhead address.

cc: State Director, Bureau of Land Management, Phoenix, AZ
Adrian Garcia, Project Manager, SunZia Project, Bureau of Land Management, Santa Fe, NM
Regional Chief, National Wildlife Refuges, Region 2, Albuquerque, NM,
Chief, Migratory Birds, Region 2, Albuquerque, NM
Supervisors, Ecological Services Field Offices, Albuquerque, NM and Phoenix, AZ
Assistant Supervisors, Ecological Services Sub-Office, Flagstaff and Tucson, AZ
Refuge Managers, Bosque del Apache National Wildlife Refuge, San Antonio, NM and Sevilleta National Wildlife Refuge, Socorro, NM
Assistant Regional Director, External Affairs, Regional Office, Albuquerque, NM, Attention: Tom Buckley

Received at
BLM on 6/7/2010
DAE

DATE RECEIVED
~~6/10/10~~
6/18/10

June 3, 2010

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to oppose the SunZia's proposed transmission route through Arizona's wilderness areas, including Aravaipa Canyon and the San Pedro River area. On a broad scale, our state's wilderness areas are too limited and fragile to support the proposed project. On a narrower view, as a property owner deep in Aravaipa canyon I do not want to see a very special part of the world sacrificed while there are other viable options available.

The SunZia project is a good idea, recognizing the potential of renewable energy. But delivering it at the expense of fragile environmental areas is a mistake. Routes through Tucson, using existing infrastructure corridors, would have far less impact on the state's environment. I prefer this option, and suggest that SunZia work with local power companies to route the transmission lines with as little disruption to the environment as possible.

If SunZia continues with its plans to construct transmission lines through Aravaipa Canyon or other Arizona wilderness areas, I will take whatever actions available to fight that action.

Thank you.

William J. McGuire
2525 N. 92nd Street
Scottsdale, AZ 85255

Received At BLM on 6/7/2010 AAG

DATE RECEIVED 6/18/10

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

Jamie C. Wolgast 6/2/10
Signature & Date

Jamie C. Wolgast, Winkelman AZ. (Aravaipa Canyon resident)
Name & City

Received at BLM on 6/8/2010 AG

DATE RECEIVED 6/14/10

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

Velma Bullis Hartman, 6/3/2010
Signature & Date

Velma Bullis, San Carlos, AZ
Name & City

PO Box 171
Peridot, AZ 85542

Sirs, I am a landowner of 160 acres in Aravaipa Canyon that my great grandfather worked for years to obtain. He is buried there. Aravaipa is a beautiful, pristine natural area of great historical value and world-renowned for its flux of visitors and long-held land owners.

I am totally against your proposal to run a power line through Aravaipa, and I stand by the statement above. You are so out of touch with history, the people who live there, and beauty. We will not stand for your greed and ignorance. Velma Bullis

Received At BLM
on 6/8/2010

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

DATE RECEIVED
6/18/10

To Whom It May Concern:

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If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

John Hartman 6/2/2010
Signature & Date

John Hartman San Carlos, AZ
Name & City
PO. Box 171
Peridot, AZ 85542

Dear Sirs,

I don't know what to say! You have no sense of what is precious on our planet.

John Hartman
ER Supervisor
San Carlos PHS Hospital
208 Sibiqua
San Carlos, AZ 85550

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STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

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6/28/10

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. In general, the SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

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John Dillon 6/05/10

Signature & Date

John Dillon Dillon, MT

Name & City

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Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

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6/5/10

Signature & Date

Richard Choate Winkleman AZ

Name & City

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Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. In general, the SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

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Hesta Dillon, June 5, 2010
Signature & Date

Hesta Dillon, Dillon, MT
Name & City

5 June 2010

Received at BLM on 6/8/2010 AG

DATE RECEIVED 6/18/10

Bureau of Land Management
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge, and as a citizen who lives in the flyway, I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley.

Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option.

Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor. Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region.

The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available; all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive. Now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Very truly,

Del R. Mote

Del R. Mote
193 Caster Ranch Road
Mountainair, NM 87036

Redington Natural Resource Conservation District
P.O. Box 232
Pomerene, Arizona 85627
(520) 212-4242
Charles Kent, Chair

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Bureau of Land Management
Adrian Garcia, Project Manager,
SunZia Southwest Transmission Project
P.O. Box 27115
Santa Fe, NM 87502-0115

Dear Mr. Garcia,

At our coordination meeting of April 15, 2010 concerning the proposed Sunzia transmission line placement through the Lower San Pedro River Valley Mr. Siegel of EPG and yourself indicated that you would like to participate in a work group meeting with the Redington and Winkelman NRCDs to further our discussion in more detail of available data to be incorporated into the Draft EIS. We would like to move forward with this meeting and propose to meet on **June 24th at 1p.m. in San Manuel, AZ at the Gardner Middle School Main Library (715 S Ave D).** We also extend this invitation to other involved government entities and agencies so that we may all review the data and concerns for the proposed line.

In order to provide adequate notice to all parties please respond to this meeting notice no later than June 11th. You can reach me at 520.212.4400 or chkenta7@starband.netor Stefanie Smallhouse at 520.850.8250 or carlink@hughes.net.. We look forward to a productive working session to lay out available data and its incorporation into the Draft EIS. In order for all parties to see the benefit of time spent in this meeting please plan to bring updated maps with specific routes outlined at a meaningful scale, and data collected for this area up to this point to be included in the draft document.

As agreed to at our last meeting enclosed you will find pertinent planning documents from the Redington NRCD as it pertains to the Redington NRCD Long Range Plan. We submit this in order for it to be incorporated into the draft EIS as well as for your benefit in trying to coordinate/address inconsistencies that may exist between the Sunzia proposed line placement and our plan.

Sincerely,

Charles Kent,
Chair, Redington NRCD Board of Supervisors

Enc.
Cc:

Mickey Siegel, Environmental Planning Group
Bill Dunn, Winkelman NRCD
Ruben Ojeda, AZ State Land Department
Tim Bolton, AZ State Land Department
Steve Spangle, AZ Ecological Field Office, USFWS
John Windes, AZ Game and Fish Dept.
Carol Lynn Erwin, Bureau of Reclamation – AZ
Richard Searle, Cochise County Board of Supervisors
Pete Rios, Pinal County Board of Supervisors
Ray Carrol, Pima County Board of Supervisors

Excerpt from:

Redington Natural Resource Conservation District Long Range Plan, 1989

Pg. 7 V. GENERAL POLICIES AND PROCEDURES

The District Board of Supervisors is responsible for informing the general public of available assistance and progress being made on local problems of public concern. They develop and annual plan of work which sets forth the high priority jobs to be stressed during the coming year.

Pg. 7, VI. MAJOR DISTRICT CONCERNS AND OBJECTIVES:

1. *Soil Erosion and Sedimentation – Sediment pollution of streams and erosion of rangeland is a major problem in the District. Two objectives to correct the problem are to effect physical changes in the watershed to reduce erosion and to improve range management techniques o prevent erosion.*
4. *Water Quality- Our goal is to improve water quality in all of our streams to meet water quality standards. We also hope to continue to monitor wells for water quality and water table information.*

Our present priorities are to improve water quality by reducing soil erosion and sedimentation; improve rangelands by planning and applying better management practices; and by testing grasses and other planting programs; follow-up with cooperators to insure the effectiveness of the District program.

Redington Natural Resource Conservation District

Policy: Major Utility/Transportation/Communication Corridors 2010

Background

The lands within the Redington Natural Resource Conservation District include valuable agricultural production acres as well as lands that are historically and culturally significant. The Lower San Pedro River valley is well known as an important migratory flyway and un-fragmented wildlife corridor between the Galiuro, Catalina, and Rincon Mountain ranges. Agricultural production supports the local tax base and helps to ensure continued open space.

Current utility lines and access roads have created environmental concerns in the form of soil erosion, water quality degradation, and increased off road vehicle damage to the watershed.

There is a minimum of private land still withheld in the District; that which provides the tax base supporting local school districts and county services, maintains undeveloped riparian areas and associated state/federal grazing leases providing active management of the natural resources upon them and further support for educational institutions. There are properties within the District considered to be mitigation lands purchased with the specific intention of providing habitat for specific species in order to mitigate land use actions in other areas. Negating this mitigation action would result in the need for further land purchases leading to more acres taken out of production, affecting the local economy.

Any new major utility/transportation construction would adversely affect the above mentioned resources by promoting further land fragmentation, loss of private ownership, the possible destruction of valued cultural and historic resources, disturbance of soil and degradation of water quality as well as affect the ability of landowners to steward their properties and produce essential products for the benefit of the people of the District, the State of Arizona, and the Country.

The Lower San Pedro River Watershed Assessment funded through the AZ Water Protection Fund found roads to be a major issue of concern with area landowners as related to problems of erosion and other resource impacts. Roads associated with existing utilities were included in the determination that roads were considered to be the number one cause of human related gully erosion. These roads interrupt surface runoff and cause it to run down the road eventually leading to gully cuts along tracks in the road. Also reflected in this assessment was that 34-54% of the watershed falls within a low to moderate soil stability rating, meaning that these soils are more vulnerable to soil instability.

Policy

It is the policy of the Redington Natural Resource Conservation District to oppose the construction of any new major energy, transportation, or communication corridors through the Redington NRCD. In order to minimize impacts of such actions all future construction of such corridors should be along existing corridors of similar capabilities that would only require an upgrade from what currently exists.

Excerpt from:

Redington Natural Resource Conservation District –
Lower San Pedro Watershed Assessment Project, WPF # 00-109

The following pages are excerpt from the above document and address fire management, soil erosion, and road construction/maintenance within the District. This document has been adopted into our long range plan.

The ability to manage rangelands with prescribed fire may be the only tool available to address vegetation issues currently existing within the District. This is made more complicated if not impossible to utilize as a tool with the presence of high voltage power lines located within the "Medium Fire Suitability" areas.

Roads are addressed in *Issue 8*. This includes photos of currently existing utility roads and existing erosion.

Upland Erosion is addressed in *Issue #3*

This concern was also demonstrated with the map presented to you at the April 15th coordination meeting in Cascabel. This map demonstrated the overlay of the proposed transmission line and highly erodible soils.

ISSUE #3 UPLAND EROSION

The Erosion Process

Soil conservation is a basic objective for all natural resource management. Soil erosion on uplands can reduce soil depth and therefore reduce soil moisture holding capacity and rooting depth. Soil erosion can result in the loss of nutrients from the watershed, especially since these nutrients are most abundant in the surface soil. And soil erosion contributes to sediment accumulation and lower water quality in drainages and reservoirs.

Upland soil erosion refers to sheet erosion and rill erosion. Sheet erosion is erosion of surface soil due to overland flow of water. Sheet erosion can also be due to wind. Wind erosion is not a major concern in the LSP watershed. There may be some redistribution of soil and litter by wind, e.g. deposition around the bases of shrubs, but it is minor in extent compared to water erosion. Rill erosion is caused by water running in shallow channels, i.e. similar to very small gullies.

Rainwater falling on the soil surface may either soak in (infiltrate) or runoff. Runoff is what can cause soil erosion. Whether rain soaks in or runs off depends on a number of factors. One is how fast the soil will absorb moisture and how much it can take before becoming saturated. This depends on soil texture, soil structure, surface roughness that may hold moisture in place, and the depth to soil layers that restrict water movement (e.g. caliche, hardpans, or bedrock). Rainfall intensity and duration are also important. Slope is another factor that influences how fast water runs off. All of these factors are site factors that are related to the classification of ecological sites, i.e. soil differences, slope, topographic position, and climate. Thus, the ecological site has a relation to the tendency of a soil to erode and the amount of erosion that will occur on that site.

Protection of the surface soil is another factor that influences erosion rates. Soil lacking surface protection will often form crusts due to the impact of raindrops that breaks down surface structure. These crusts reduce infiltration rates, increase runoff and increase erosion hazard. Ground cover tends to protect the soil against raindrop impact and also impedes the rate of surface runoff. Ground cover may consist of litter, i.e. dead plant material on the surface. It may consist of live vegetation, either plant canopies or basal cover. Plant canopies may reduce raindrop impact if they are not too high above the ground, but they have no effect on runoff. Plant basal area has a much greater effect on both raindrop impact and speed of runoff. That is why perennial grass cover is generally better for protecting soil surface than shrubs. Gravel and rock can also protect the soil and slow runoff. Many soils, especially those formed on alluvial materials will build up an "erosion pavement" as the finer material erodes from the surface and leaves a layer of gravel on the surface. This layer of gravel can more or less stabilize these types of soil if not disturbed. Alluvial or soft material lacking gravel may have high rates of erosion, as in Bryce Canyon National Park.

Soil compaction can also reduce infiltration rates and soil moisture holding capacity, thus increasing runoff and erosion hazard. Some soils are more susceptible to soil compaction by animals or vehicles than others. Natural soil processes tend to counter soil compaction through shrinking and swelling (due to wetting and drying), freezing and thawing, plant root growth, actions of insects, worms, and small animals in the soil profile, etc. Surface soil may become compacted from raindrops during the monsoon, but regain its soft structure during the winter.

Vegetation, and litter, cover is the only factor that management can exert much control over. Grazing, fire, drought, and heavy rain can reduce or redistribute ground cover, or influence the type of vegetation growing on a site.

Erosion is a natural process and is responsible for forming the topography of the LSP watershed. The older valley fill is the product of erosion of the mountains and the younger alluvium is soil eroded from the uplands. Therefore, when we seek to control erosion, we are really trying to prevent the rate of erosion from increasing significantly due to our land use or management. Other things being equal, the rate of erosion increases as precipitation increases. On the other hand, the amount of vegetation and litter cover generally also increase as precipitation increases. Therefore, on the average, natural erosion is highest where there is sufficient rainfall to produce significant runoff but not enough rain to support adequate vegetation to protect the soil completely. In areas with rainfall of 30-40 inches or more, e.g. eastern forests and tallgrass prairie, vegetation may essentially prevent any surface soil erosion from occurring unless the vegetation is disturbed or removed to expose mineral soil. Much of the landscape development in such areas occurs by soil creep, solution, landslides, etc. Where rainfall is very low, i.e. below 5-10 inches, the amount of vegetative cover possible under such limited moisture does not have any appreciable effect on surface erosion. Natural erosion is limited due to limited precipitation, but can be high in response to unusual intense rain events. In the zone of about 10-25 inches of precipitation vegetation rarely is dense enough to completely protect the soil from erosion, but can be dense enough to reduce erosion considerably. This is the zone that covers most of the rangelands and most of the LSP watershed. In this zone, activities that reduce vegetation and litter cover will usually result in some increase, possibly large increases, in sheet and rill erosion. Changing vegetation from a more effective type (grass) to a less effective type(shrubs) will also increase erosion. The extent of the increase depends on soil factors, slope, rockiness, gravel cover, i.e. site factors.

Assessment of Upland Erosion in the LSP watershed

The rate of soil erosion occurring in any given spot is not possible to measure in the field at one point in time. Measuring actual soil erosion or soil movement requires elaborate and long-term research studies. A number of such studies have been conducted in Arizona. However, for on the ground assessment of erosion rate we must depend on visual indicators of erosion. Some of these are the presence of rills, movement and deposition of soil or litter, formation of plant pedestals due to soil removal around them, evidence of gullies in the drainage bottoms, patchy cover of vegetation. For this watershed assessment a "soil stability rating" index was developed based on similar rating systems used by BLM and other agencies. This SSR was based on rating 6 factors on a scale of 1-5, then adding to get a total rating. Thus, the best possible score was 30, which would indicate no evidence of erosion. This rating scale was applied at each of the observation points on the upland watershed assessment. Later, each map delineation was assigned a SSR rating to apply to the whole map delineation. This was done by considering all the write-up points and deciding a representative value. It is not an average of the write-up points in the map delineation, since they may represent different sites. If no actual observations were available in a map delineation, it was assigned a value using professional judgment based on similar conditions in other map delineations. The SSR does not make any determination of whether existing erosion is natural or accelerated; it only rates the evidence visible that indicates how much erosion may be occurring.

Figure 8 is a map showing the results of this SSR procedure for all map delineations in the watershed. The actual SSR values are given in the table describing ecological sites in Appendix B. SSRs for the map delineations ranged from about 15 to 29. These were arbitrarily divided into 3 classes: 26-30; 21-25; and 20 or less. These classes simply indicate areas with

the lowest observed erosion, moderate, and highest rates. They do not imply anything regarding acceptable or sustainable rates of erosion. For the whole watershed 11% fell into the greater than 25 range, 54% in the 21-25 range, and 34% in the less than 21 range (2% were cultivated fields). For the most part the least amount of erosion was observed in the woodland types of the higher mountains where rainfall and plant cover is greatest, and in the woodland sites along the River where the ground is almost flat and surface runoff minimal. The highest erosion rates were seen in the shrublands at lower elevations with low vegetation cover, especially those on steeper slopes. The moderate zone tends to be on the sites receiving 12-16 inches of precipitation that still have a good perennial grass cover.

Alternative Management Actions

Mitigating upland erosion depends mainly on maintaining a good vegetation and litter cover on the watershed and managing for the type of vegetation that will provide the most effective cover, i.e. perennial grasses instead of shrubs. The extent of shrublands, grasslands, and woodlands has already been discussed along with the management options for these areas, i.e. grazing management, burning, herbicides, and so on.

There are a number of direct approaches to reducing runoff or increasing infiltration that have been used in some situations. Many types of mechanical interventions designed to slow down runoff and/or increase infiltration of water have been tried. Some of these were done by machines and some by hand. Examples are brush, rock or wire contour dikes designed to catch sediment and slow runoff, contour furrows designed to catch sediment and runoff, pits dug by offset plow discs for the same purpose and soil ripping to improve infiltration. Many of these efforts were combined with seedings of perennial grasses. These practices were widely applied on watersheds throughout the West during the 1930s-1950s, notably by the Civilian Conservation Corps (CCC) and later by the Soil Conservation Service (NRCS) and others. It is not clear to what extent this was done in the LSP watershed. These practices required a lot of hand labor and/or mechanical treatments, both of which were cheap during those times. Some of the efforts had considerable positive results, others were very short-lived. More recently, the land imprinter has been touted as the solution. This is a large drum filled with water with protruding "imprinters" that can be pulled behind a crawler tractor. By creating impressions in the ground surface, it encourages infiltration of water rather than runoff, thus reducing erosion. It may have been inspired by observation of grass sprouting in the tracks left by bulldozers. There have been situations where the imprinter has produced substantial results.

However, all of these approaches depend on the availability of cheap labor and/or cheap machinery costs, neither of which are currently available. Most of these practices can only be applied in specific situations of soil type, rockiness, topography, etc. In some cases, the results have been substantial and long lasting, in others they were ineffectual or of short-term benefit. In general, this type of erosion control is probably not adaptable or economical for the LSP watershed.

So, we are left mainly with managing the vegetation to achieve better watershed stability. The question then is: What areas will likely respond best to vegetation management to reduce existing erosion or to reduce the tendency toward accelerated erosion in the future? To try to answer this question, we used the ecological site map as a basis for determining priority areas to either correct existing erosion or prevent future increases in erosion.

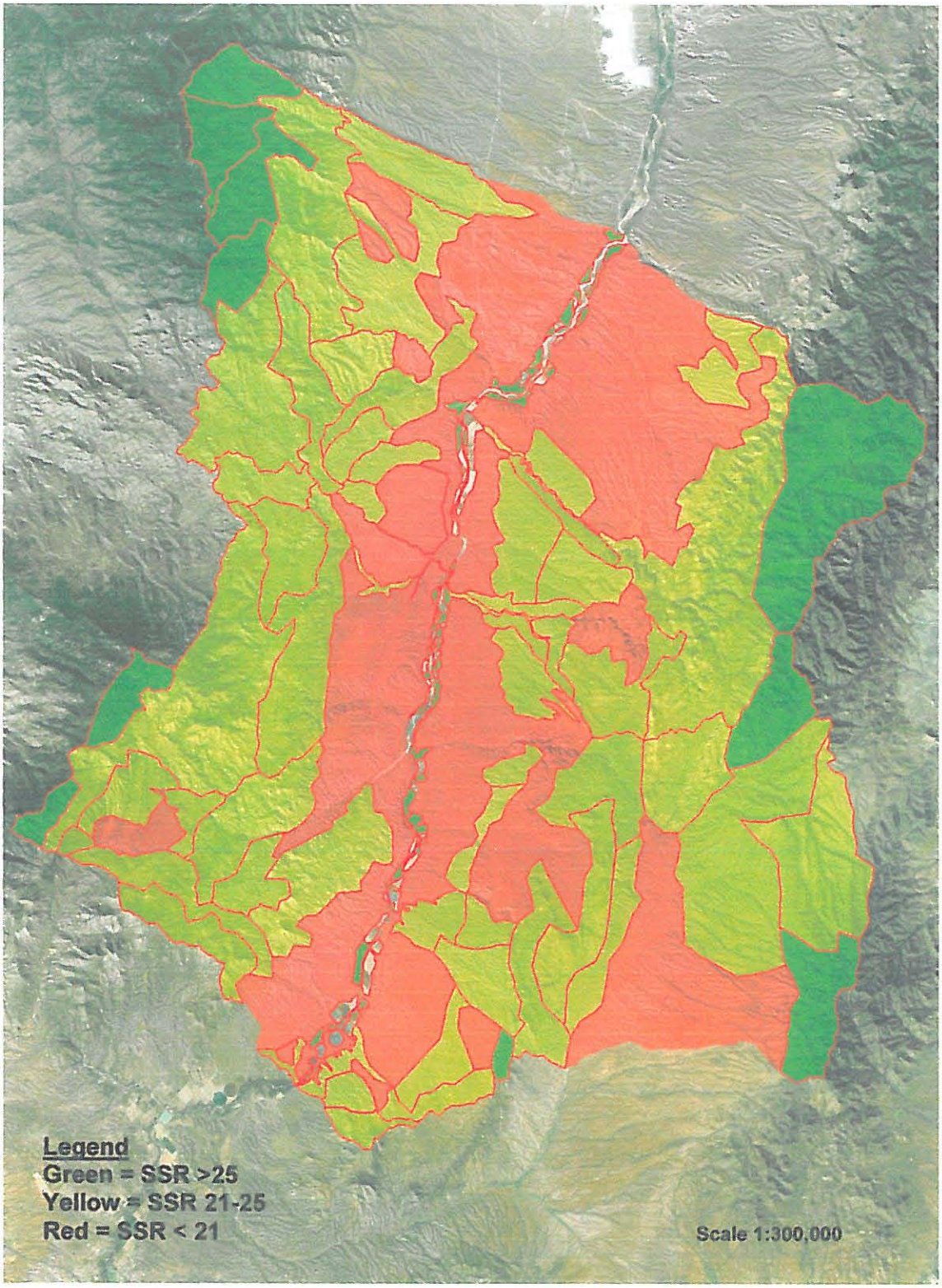

Figure 8. Representative soil stability rating classes for map delineations.

Woodland/forest areas generally have a low amount of erosion as long as the vegetation is relatively undisturbed. In the higher elevations this is due to high amounts of precipitation leading to good ground cover and also to rocky soils that generally do not erode excessively. Only when drastically disturbed, as happens in destructive fires, is the erosion rate greatly increased. Mesquite woodlands at lower elevations generally do not have a serious sheet erosion problem because they are flat and do not produce much surface runoff. Therefore, these areas are not priorities for upland erosion control, except in the case of intense fires.

Most of the ecological sites in the lower rainfall belts (e.g. 40-1 and 41-2) and a few in the moderate rainfall belt (41-3) are dominated by shrubs and apparently have little potential to produce grass. These sites have a fairly high natural rate of erosion (very high on breaks and moderate on those with erosion pavement), but the natural vegetation will not protect them from erosion to any great extent. If the shrubs that dominate are removed, there may be some increase in perennial grass cover although it may take a long time to obtain the favorable weather to allow this to happen. Even if perennial grass increases it will still not likely be dense enough to make a substantial reduction in erosion. If the shrubs are removed and perennial grass does not increase, then erosion will likely increase. Therefore, these areas do not seem to be good candidates for vegetation conversion given the expense and the slim chances of improvement.

Therefore, the main chance to manipulate vegetation to achieve better soil protection exists in the 41-3 (12-16 inch) zone and some areas within the 41-1 (16-20 inch), and lower precipitation zones (41-2, and 40-1). Erosion due to changes in vegetation cover from mainly grass to mainly shrubs will continue to increase on some ecological sites as shrub cover continues to increase (Martin and Cable 1974; Martin and Morton 1993). On these sites shrubs continue to increase regardless of whether they are grazed or not. Robinett (Robinett 2000; Robinett and Sayre 2000) indicates that shrubs will generally continue to increase on certain sites whether they are grazed or not. The sites he mentions are those with deeper soils such as loamy upland, sandy loam upland, etc. Other sites, such as granitic hills or limestone hills may have shrub increases but the effects on soil erosion may be less because of the protection afforded by rock cover and the relatively shallow soils. Therefore, it appears that sites with deeper soils, fairly erodible soils, gentler slopes, and good grassland potential are the main ones that are of major concern. If the perennial grass has already been taken over by shrubs, then erosion has probably increased and will continue to do so in the absence of positive action. Changing the grazing system or removing livestock will not change this scenario. If the site still has a good cover of grass and has not yet been taken over by shrubs, then preventive action may be advisable to keep that from happening. It is much easier and more effective to control the shrubs before the grass cover declines. Therefore, the deeper soil areas were identified as priority areas for treatment, either to correct existing problems or to prevent future problems.

Three priority classes for vegetation treatment were established as follows:

Low Priority

All ecological sites on bedrock. These include Shallow Hills and all forest/woodland sites in the 41-1 zone; and all Volcanic Hills, Granitic Hills, and Limestone Hills in all zones. Limy Upland sites are also given low priority because there is little potential to increase effective ground cover. All sites in the 40-1 zone were assigned low priority except for Loamy Upland and Loamy Hills because they lack potential to improve effective ground cover.

Moderate Priority

These sites include the Limy Slopes, Limy Fan, Sandy Bottom, Sandy Upland, Sandy Loam Deep and Shallow Upland sites in both the 41-3 and 41-2 zones. These sites have a moderate erosion potential because infiltration is good, slopes are gentle and/or the surface is protected by rocks and gravel. Shrub increase on these sites will have less effect on erosion than those sites in High Priority class.

High Priority

All sites with deep soils and heavier soil texture either in the A or B soil horizons. In the absence of fire or other brush control, brush invasion on these sites will reduce grass cover because the shrubs and grasses tend to root in the same soil horizons. Relatively low infiltration rates and high soil erodibility increase the erosion problem. If these areas are already invaded, they should be treated. If they still have a good grass cover, this should be maintained. Livestock grazing management alone cannot accomplish this. Sites included are Loamy Upland, Loamy Hills, Clayloam Upland, Clay Hills, Clay Upland, Sandy Loam Upland.

The map in Figure 9 shows the priority areas for vegetation treatment to prevent or reduce upland soil erosion for all map delineations. There are 114,744 acres in high priority, 87,770 acres in moderate priority, and 260,419 acres in low priority (2,525 acres of river corridor not included).

ISSUE #7 FIRE

Local landowners expressed considerable interest in the issue of fire from two standpoints: use of fire as a vegetation management tool, and controlling the risk of property damage from wildfires. This paper will focus mainly on the pros and cons of using fire to manage vegetation, identify areas most suitable for burning, and outline some alternatives for management. The community has recently formed a local fire organization that is working on educating people about reducing fire hazards around their homes and property, and which will probably, in cooperation with the Redington NRCD, develop a fire management plan for the area. The information in this report should be useful for that planning effort.

Fire History

It is generally accepted that fire played an important role in shaping the character of vegetation in southeastern Arizona. Dry conditions and frequent occurrence of dry lightning storms prior to the onset of the monsoon cause many wildfires and this pattern no doubt is long-standing. In addition, it is widely assumed that the Indians started fires either accidentally or deliberately.

Although Indians in some areas apparently used fire to flush game, to attract game, to keep forest free of underbrush, or to attack their enemies, it is not clear how common this was in the LSP. Baisan (Baisan 1990) studied the fire history of the Rincon Mountains based on tree rings. He concluded that there was no evidence of any effect on fire frequency attributed to Indians, i.e. all the fire record appeared due to lightning. Humans lived in the San Pedro Valley for more than 10,000 years, initially as hunter-gatherers, and from 1500 B.C. mainly as agriculturalists. When the Spaniards arrived in 1694, the only occupation in the San Pedro was the agricultural Sobaipuri Indians. According to Baisan, there is little evidence that they used the mountains very much or deliberately set fires in the mountains. In 1762, the Apaches drove the last of the Sobaipuris from the valley and it was Apache territory until 1886. However, Baisan says that the Apaches did not live in this area, only using it for hunting or raiding. There is no evidence they deliberately set fires for either purpose.

The tree-ring record indicated a long history of frequent fires in the Rincon Mountains. Baisan's conclusions were:

- The majority (82%) of the lightning fires occur above 6500 ft. elevation - concentrated around summit of Mica Mountain. Rincon Peak has had much fewer fires than Mica Mountain, perhaps due to the shape of the summit.
- Fire occurrence by vegetation type was 48% in pine-oak forest, 41% in ponderosa pine/mixed conifer forest, and 10% at lower elevations (including only 3% in the desert shrub types).
- The fire return interval (FRI) in pine forest was about 7 years, and 9.9 years in mixed conifer. Fire-free intervals ranged from 1 to 19 years, but averaged about 4-7 years.
- Most fires seemed to have been relatively large, some burning over more or less the entire area.
- There was no tendency for fires to occur in drought years. The most common pattern was for fires to occur in average or somewhat dry years following wet years that built up finer fuels. A minimum interval of 3 years appeared to have been necessary to generate enough fuel to carry a widespread fire; a 4-5 year interval was more common.
- Five relatively fire-free periods of 10 years or more occurred between 1640 and 1893, and each period was followed by a widespread fire or series of fires.
- Fire occurrence was confined to late spring and early summer.

Baisan indicated that large fires were reported in all the mountain ranges in the newspapers in the 1880s after Anglo settlement started. However, these fires virtually ceased after about 1893. The author attributes this to 3 possible reasons: fire suppression, grazing that reduced fine fuels, and wet conditions that occurred in the early 20th century. Similar conclusions were reached by other investigators.

It should be emphasized that Baisan's conclusions mainly related to the pine, mixed conifer, and oak woodlands and forest that occur at higher altitudes because that is where the tree ring record can be established. Evidence for fires in the grasslands and shrublands at lower elevations is more tenuous because of lack of tree rings for dating the fires. Humphrey (Humphrey 1958) was an early proponent of the idea that fire was a necessary factor in maintaining the desert grassland. Hastings and Turner (Hastings and Turner 1965) pointed out that there is very little evidence for widespread or frequent fires in the grasslands in early accounts; most of the newspaper stories referred to fire in the mountains. They concluded that if fire had been as widespread as claimed, someone would have mentioned it. However, in their later book (Turner, Webb et al. 2003) the authors accepted that fire was a factor in preventing shrub domination of the desert grassland. McPherson (McPherson 1995) also indicated that fire probably occurred in the desert grassland on about a 10 year frequency. It is generally accepted that grazing, especially the heavy grazing that occurred in the 1880-1950 era, reduced fuel and thus reduced fire occurrence. This period also saw the implementation of fire control policies by the state and federal governments and local communities.

The desert shrub areas probably did not burn very often. Many of the plants typical of that vegetation type, e.g. cactus, palo verde, are not tolerant of fire. It is not likely that long-lived saguaro stands would exist if they had been subject to fire. The introduction of exotic cool-season annuals has increased the abundance of fuel in some of the desert shrublands in wet winters. This has no doubt increased the tendency for desert shrub areas to burn with often dramatic effects on the vegetation.

Fire Effects – Good and Bad

The effects of fire, like other practices such as grazing, depend on the timing, intensity, and frequency of burning. The decision whether to use fire as a management tool should be made considering specific management objectives and weighing the positive and negative effects of using fire. In general, there are two possible management objectives: One is to reduce the amount of woody plants (shrubs and trees) and increase grass cover. The benefits of doing this would be to increase water yield in the higher elevations, or to increase effective ground cover and thereby reduce erosion in the lower elevations. The second main reason for burning is to reduce the risk of damaging wildfires and increase the ability to control wildfires by reducing fuel loads.

In general, fire tends to favor grasses and forbs over shrubs and trees. Some woody plants are usually killed by fire, e.g. paloverde, snakeweed, burroweed, saguaro, prickly pear, cholla, pines, one-seed juniper, some agaves, including shindagger. Some woody plants may be damaged or top-killed, but usually resprout from the base, e.g. mesquite, whitethorn, creosotebush, oaks, alligator juniper, false mesquite, four wing saltbush, yucca. Other woody plants actually are favored by periodic burning, e.g. many chaparral species such as manzanita and ceanothus. Likewise, while most grasses recover readily from fire, the effects vary depending on the species and fire intensity. Bunchgrasses with a lot of old dead material accumulated in them can be severely damaged because of severe heat on the basal buds. The same grasses that do not have this buildup may be relatively little affected. Black grama, a

common grass on limy sites in the LSP watershed can be severely damaged or killed by fire. Bush muhly, a common grass in the desert shrub type, is also damaged by fire. The point is that blanket statements about fire being beneficial to grass and damaging to shrubs is not always true. Before burning, careful consideration should be given to the likely effects on the species present.

Fire has other environmental effects in addition to its effect on living plants. Fire generally consumes all or most of the litter cover protecting the soil surface. This leaves the soil exposed until the litter cover is re-established. That process can occur in one year, or it may require several years. In the meantime, the risk of soil erosion is increased and water quality may deteriorate. After the Bullock Fire in the Catalina Mountains extensive amounts of ash, soil and debris washed into the drainages coming off the mountain and black sediment was observed far down the San Pedro River. Fire is often said to have a "fertilizing effect" on the soil. It is true that fire can release some nutrients that are bound up in either live vegetation or litter and increase their availability. The same process occurs when grazing animals consume vegetation and defecate or urinate on the soil surface. However, this does not add nutrients to the system; it only changes their availability for uptake by plants. Fire can also cause loss of nutrients from the system, mainly by increasing surface erosion, but also by volatilization in the burning process. Carbon is obviously lost by combustion, but nitrogen can also be lost in that process. There is little evidence that fire kills many wild animals. The main effect on wildlife is to alter their habitat, and this can be either beneficial or detrimental depending on the species.

Fire produces smoke and may severely lower air quality for certain periods. As population increases, there will probably be greater restrictions imposed. Statements that rangelands should be burned on about a 10 year cycle are often made. However, in the LSP watershed that would involve burning about 10% of the entire area each year on the average. That works out to over 40,000 acres per year, an acreage that has not been approached in even the most severe wildfire year to date.

Finally, fire can cause property damage or personal injury. This fact creates a substantial liability issue when prescribed fires are set. The term, prescribed fire, is preferable to "controlled burn", since most burns are not really controlled until they are out.

Current Status of Fire in the Watershed

Fire is already affecting a considerable portion of the watershed, especially the higher elevations. Most of these fires are started by lightning. The Arizona Daily Star (AzStarnet.com 2002) lists three fires in the LSP watershed as among the largest in Arizona history: the Markham Fire in 1993 (20,480 acres), the Redington Complex Fire in 1994 (20,725 acres) and the Bullock Fire in 2003 (30,563 acres). There have been a number of other smaller fires in recent years (Piety Fire, Helens II Fire). Figures 15, 16 and 17 indicate the fire history recorded by the Forest Service, mainly for FS lands. Larger fires have the name, outline and date of the fire indicated on the map. Smaller ones are only shown by a symbol. The Markham, Redington, and Piety Fires occurred mainly on state and private lands and were not mapped by the FS. Figure 18 indicates the outline of the Bullock Fire. This fire burned essentially the entire oak/pine woodland zone in the Catalina Mountains within the LSP watershed. There have been more large fires in recent years than during the previous 50 years or so. This increase is probably due to fuel buildup due to long-term fire protection, and to drought conditions.

In addition to wildfire, there have been a number of prescribed burns carried out in recent years. TNC (The Nature Conservancy 2002) carried out several burns totaling about 17,000 acres on the Muleshoe Preserve from 1998 to 2000. These burns were done to improve condition of the

Hot Springs Watershed to improve habitat for endangered fish. TNC reported that these burns reduced shrub cover compared to preburn conditions. Grass cover increased some after two years, especially annual grasses. Drought conditions during and after these burns may have limited the response to some extent. Gori (Gori and Backer 2005) reported that the burns in the Hot Springs watershed had resulted in improved fish habitat and fish populations in Hot Springs Wash between 1991 and 1999. However, this result is questionable since the burns were only carried out in 1998-2000. An alternate conclusion might be that the Hot Springs riparian area was recovering from the 1983 flood damage.

The A7 Ranch, under ownership of the City of Tucson (now owned by Pima County), also carried out prescribed burns in the Redington Pass area. These burns appeared to have reduced shrub cover and were reported to have caused increased water levels in some wells in the vicinity (McGuire 2004).

Areas Most Suitable for Burning

In order to establish a basis for planning the use of prescribed fire in the LSP watershed, each mapping unit was rated according to the expected results of the use of fire. Each map delineation was assigned to one of four categories: high, moderate, low, and no suitability depending on the expected results from prescribed fire. The criteria used were one or more of the following:

- Potential to increase water yield by reducing shrub or tree cover.
- Potential to increase soil protection and forage production by reducing shrubs and increasing grass cover.
- Potential for increased shrub cover and reduced ground cover if not treated.
- Potential for decreasing effective ground cover by reducing shrubs without an increase in grasses.
- Potential for damage to saguaro or other fire-sensitive desert shrubs.

High suitability was assigned to all map delineations with forest or woodland vegetation at higher elevations (pine, oak). Periodic fire in these areas will increase water yield, reduce the danger of catastrophic wildfire with subsequent erosion, and improve wildlife habitat. These are the areas that apparently burned most often historically and opportunities for burning are frequent.

Moderate suitability was assigned to all map delineations in the 12-16 inch precipitation zone (41-3) that have the potential for grassland or shrub/grassland vegetation. Also, areas in the lower rainfall zones (40-1 and 41-2) with the potential to produce grassland or shrub/grassland vegetation where current vegetation is grassland or shrub/grassland, i.e. there may be enough fuel to carry a fire. These areas usually have sufficient fuel to carry a fire and will increase grass cover in response to fire which will reduce erosion. Some of these areas on rocky or porous soils may have some increased water yield, but most will not.

Areas receiving low suitability were all areas in the lower rainfall zones (40-1 and 41-2) with a potential to produce grassland or shrub/grassland vegetation but currently producing shrubland. These areas will not carry a fire except after wet winters, the potential to improve ground cover is limited, there is no potential for increased water yield, and many have fire-sensitive species such as black grama, bush muhly, paloverde, and saquaro. In addition, all mesquite woodland types were assigned a low suitability rating. These woodlands will carry a fire after wet winters, but fire will have little positive benefit other than reducing danger of wildfire that may threaten property.

No suitability was assigned to all areas having shrubland as the potential vegetation. This includes many of the ecological sites in the lower precipitation zones (40-1 and 41-2) and the limy upland sites in the higher zone (41-3). These areas usually do not have enough fuel to carry a fire. In any case, reduction of shrub cover as a result of fire may not be offset by increased grass cover, thus reducing effective soil protection. Also, many of these sites have fire sensitive species (saguaro, etc).

Figure 19 indicates the areas in each fire suitability category. There were 49,300 acres in the high potential, 312,070 acres in moderate, 46,094 acres in low and 57,994 in the no suitability category.

Alternative Management Actions

Prescribed burning requires considerable planning, obtaining required permits, provision for safety, and considerations of liability. It usually requires a cooperative effort among landowners and government agencies. The government agencies not only have to approve the project for compliance with various regulations, but have experienced personnel to assist in planning and executing the fire.

Prescribed burns require certain weather conditions and also a certain amount of fuel to be successful and controlled. In order to obtain the required amount of fuel to carry a fire, it is often necessary to burn when growing conditions have been good, i.e. a wet summer and/or winter preceding the burning period, which is generally in May or June. It may also be necessary to rest a pasture from grazing during one or more growing seasons prior to burning in order to have sufficient fuel. This requirement is more important at lower elevations with lower rainfall. Ranchers may also be reluctant to burn in dry years when the forage outlook for their livestock is questionable. Those with irrigated pasture have an advantage because it is easier to defer range pastures both before and after a burn. It is usually recommended that burned areas not be grazed until after a least one good growing season after the burn to let grasses recover (after all, burning is a much more severe impact on grasses than grazing). Sometimes 2 growing seasons rest are required by land management agencies. This is a real cost factor for the rancher.

In some cases, a let-burn policy can be implemented. An agreement can be reached between appropriate agencies, ranchers, and other landowners that wildfires will be allowed to burn in certain areas and under certain conditions. Obviously, all affected parties should be involved in such a plan, and contingency plans for suppression should be in place.

Since it is impossible to predict a long way in advance when the proper conditions for burning will occur, it is advantageous to do as much of the necessary planning and clearances so that a plan can be ready to implement with minimal preparation. The Redington NRCD could take the lead in getting landowners involved and in preparing such plans, either for the entire District or portions of it.

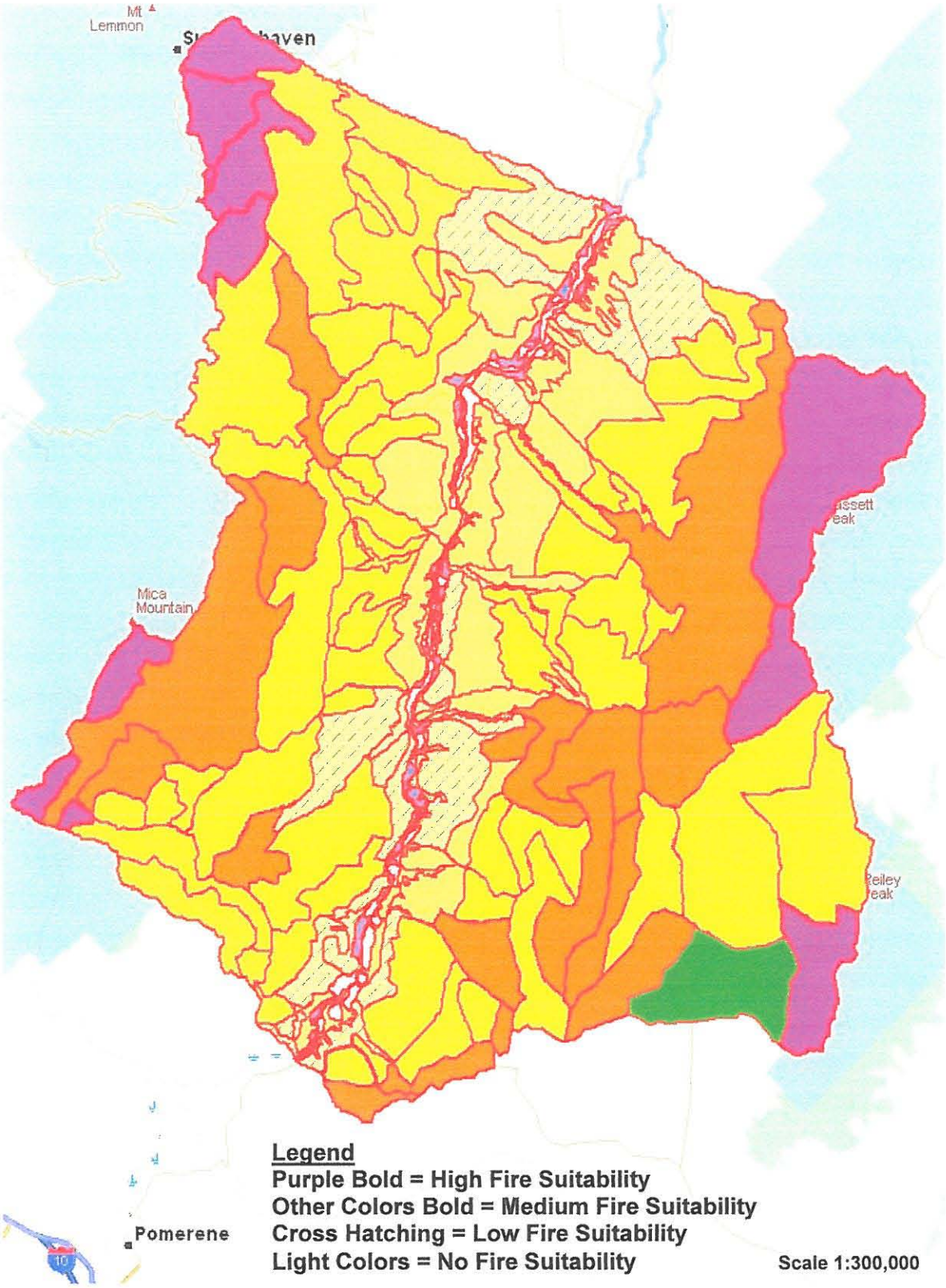

Figure 19. Fire suitability.

ISSUE #8 ROADS

Roads actually came out to be the number one area of concern among local landowners. Most of the concern was for maintenance, safety, dust and other problems associated with the main county road. These are not really "conservation" issues and will not be addressed in this report. The other road issues were related to problems of erosion or other resource impacts of roads. These will be addressed.

Extent and Types of Roads in the LSP Watershed

Figure 20 is a map showing roads in the LSP watershed. The road locations were taken from maps, aerial photos, and field checking. There may be roads that are not shown on the map, i.e. some of the short power line roads or driveways into residential parcels are not shown. There may be some of the roads shown that are actually abandoned or no longer in use due to changes in land ownership, wilderness designation, etc. Nevertheless, the maps are an indication of the location and types of roads present in the watershed.

Roads were classified into several categories (Table 15). Main roads are maintained by the counties or in some areas by the Forest Service. A small amount of state highway on Mt. Lemmon is grouped with these roads. A small portion of these roads are paved, the rest are gravel. The degree of engineering of the roads, and the maintenance, varies considerably among the various responsible agencies. The main road down the river is known as Cascabel Road in the south portion of the area and River Road in the north. Various sections are maintained by Cochise, Pima, and Pinal Counties. Another category is utility roads, i.e. those built to serve the gas pipeline and electric transmission lines through the watershed. The remaining category mapped consists of largely unimproved roads on ranches, farms, private parcels, and federal and state lands. Most of these roads just happened with little or no engineering of any kind. Some have been put in for subdivisions, but provision for drainage or erosion control was minimal.

Table 15. Approximate mileage of road types in the Lower San Pedro watershed project area.

Road Type	Miles
County	73
Private and/or Ranch / Dirt	573
Paved	8
Utilities	57

Erosion Problems Associated with Roads

In the LSP watershed assessment, roads were considered to be the number one cause of human-related gully erosion. Most of the problems involve the unimproved roads on rangelands, but similar problems occur on the other categories as well.

The main problem with unimproved roads is that they tend to intercept surface runoff and cause it to run down the road. This water builds up depth and erosive power and eventually starts to cut a gully in the tracks down the road. When these tracks develop into a deep rut or gully, the road is usually moved over to get out of the rut. Once started these gullies often tend to continue to erode, even if the road is moved. The severity of the problem is related to the slope of the road and the type of soil involved. Roads along ridges may have little problem because there is no source of water above them. Roads running down slopes act as channels for water.

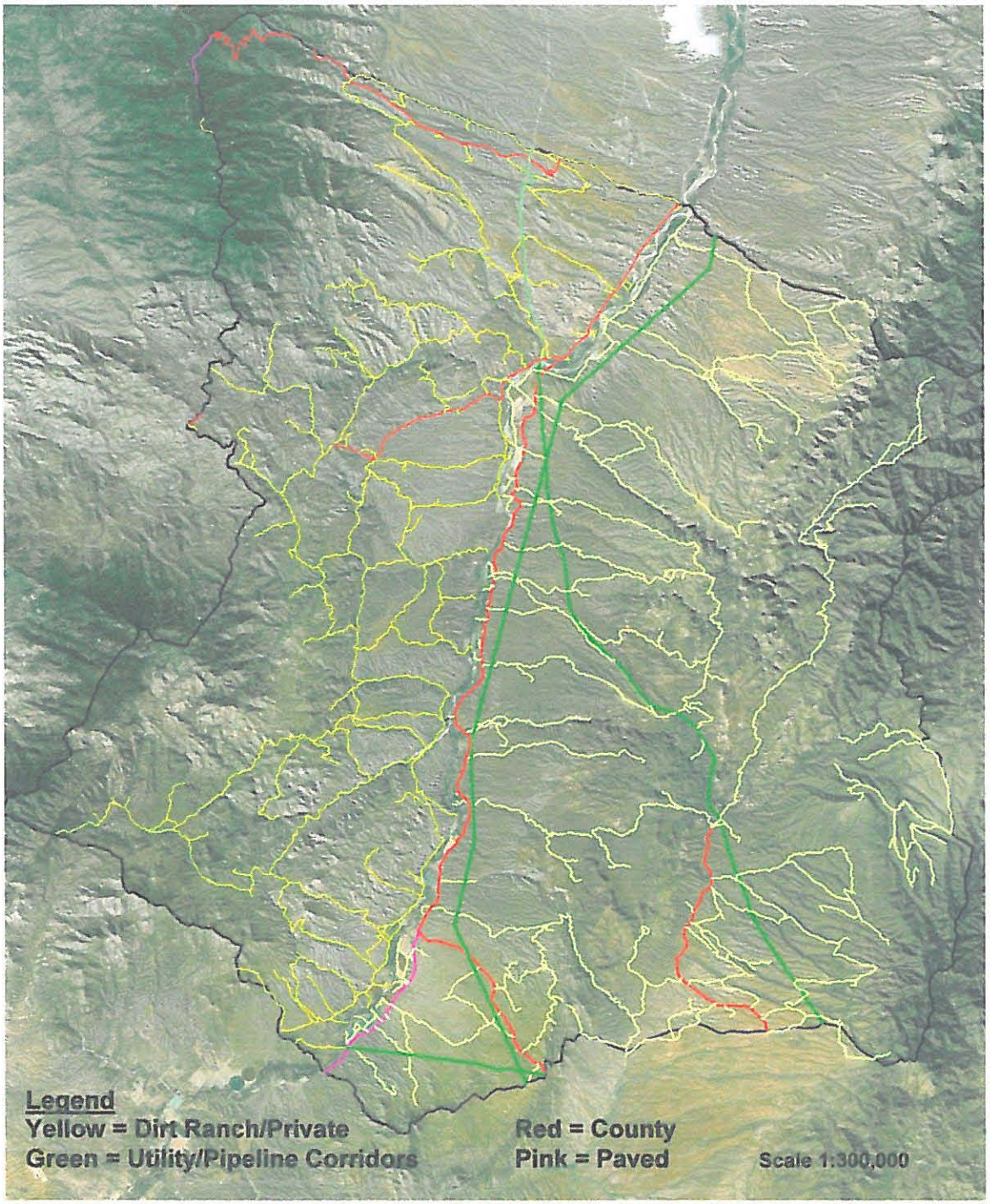

Figure 20. Roads and utility corridors.

MN (10.8° E)

Roads running across slopes intercept water running off the slope above and may carry it down the road until it finds a place to spill off the lower side. Roads in clay or loam bottoms may develop deep ruts caused by traffic on wet soil and these may channel runoff to create gullies. Roads in sandy washes generally do not create much of a problem, because the wash is naturally unstable and roads tend to be obliterated after every flood event.

Figures 21 through 24 are photos that illustrate some of the kinds of problems that exist.

Alternative Management Actions

The solution to the road problem is, of course, to provide the proper engineering to minimize erosion and flooding problems associated with roads. Locating roads with due consideration for grades, soils, and drainage crossings is the first step. Construction of water bars, turnouts, culverts, slabs, or even bridges helps to prevent water from creating gullies down the road, or where it crosses the road. In some cases, merely eliminating the berm along the sides of the road created by a bulldozer or grader could allow water to flow off the road, rather than down it. These remedies are well known and there are ample design criteria to solve the problem. The problem is that all these solutions take money.

The Redington NRCD could work with the counties, the Forest Service, and the utility companies to encourage them to improve drainage and erosion control on the roads for which they are responsible. Roads on private lands and subdivisions are the responsibility of the landowners they serve. The District could seek cooperation from those landowners and offer technical assistance to improve road problems, but the final responsibility and cost should be to those using the road. Roads on federal lands (FS and BLM) are the responsibility of those agencies. However, the District could identify where problems exist and work with those agencies to try to achieve some improvement.

The majority of the unimproved roads are on state land. These roads are used by grazing lessees, hunters and many other people. Off road vehicles often create new roads, although off road travel is forbidden on state land except for specific purposes. Although these roads were mostly originally established to serve the needs of grazing lessees to check waters, fences, distribute salt, etc. their use and the wear and tear associated with it has greatly increased with the popularity of 4 wheel drive vehicles and ATVs. However, if there is any maintenance on these roads, it is usually the grazing lessee that does it. The state land department does not maintain these roads. To correct the erosion problems on these roads would be quite expensive. The District could work with grazing lessees, off road vehicle clubs, hunters' organizations and the State Land Department to seek solutions to these problems. Some roads could be closed or re-routed. Some roads could be designated for restricted use, e.g. by State land personnel and lessees, to minimize impacts. There may be sources of public funding to help address these problems.

Figure 21. Road erosion example.

Figure 22. Road erosion example.

Figure 23. Road erosion example.

Figure 24. Road erosion example.

Wallace Heitman
16010 Chalfont Place
Dallas, Texas
June 4, 2010

Received at BLM on 6/7/2010

DATE RECEIVED 6/18/10

Bureau of Land Management
SunZia Transmission Line Project
P.O. Box 27115
Santa Fe, New Mexico 87502

Dear Sirs/Madams:

I am a member of the Friends of the Bosque and I join with them in requesting you to consider the alternative line, other than any which cross over the Bosque del Apache in order to preserve the beauty and utility of the Bosque. We, The Friends of the Bosque are much aware of your dedication to preserve what we have in line with your duties with the Project. Thank you.

Sincerely,
Wallace Heitman
Wallace Heitman

Received at BLM on 6/8/2010 AAG

DATE RECEIVED 6/18/10

June 04, 2010

Bruce Cromer, Pharm.D.
2109 48 St
Los Alamos, NM 87544

Bureau of Land Management,
SunZia Transmission Line Project,
P.O Box 27115
Santa Fe, NM 87502-0115

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to add my opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of the Mountains, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, I believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although green power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Sincerely,

Bruce Cromer

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

DAT 6/18/10

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

CITY

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ■ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

~~[illegible]~~ UNSIGHTLY VIEW. POSSIBLE HEALTH PROBLEMS.
TO SPRINGERVILLE THEN WEST. WHY SEND ELECT. TO A PLACE THAT ALREADY
HAS WIND POWER CAPABILITIES.

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

DATE RECEIVED 6/18/10

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: David Florness
ADDRESS: J Six Ranch
CITY: Benson STATE: Az ZIP: 85602

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

this proposal will be visually obsene, a health threat, devalue all property within sight, makes no sense in a heavily populated area. another route following I 40 north of Springerville south of St Johns west to Holbrook following I 40 westward. very much less populated area makes more sense. I oppose completly

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

DATE RECEIVED 6/18/10

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project Environmental Impact Statement

NA

AE

CITY

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Renewable energy should be used at site it is generated Sun and especially wind power is so erratic and undependable that it must be backed by fossil fuel generated power. If the "MONEY GREED" says it must be done then put the lines across Northern AZ where few people live. Cochise County has the highest public (not govt) private owned land. The huge lines will devalue this property.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

DATE RECEIVED 6/18/10

SunZia Southwest Transmission Project Environmental Impact Statement

NAME

ADDR

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☒ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

30 years of waiting to Retire. Now our land and house is going to be destroyed energy power Lines. It will decrease our value of our property. There goes the view, We moved here for the view and fresh air, trying to get healthy again. Radiation will Kill us all sooner or later. this is horse and Dog property. You would be destroying animals along with us. I suggest go along I-40 up ~~the~~ north. It's a better route to New Mexico.

We haven't had any illegal aliens running around us, It's a Known fact, they follow power Lines. Now were at a risk or drug smugglers, Illiegal Alliens and worse.

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

DATE RECEIVED
6/18/10

SunZia Southwest Transmission Project
Environmental Impact Statement

WAYNE E FIELDS
NAME

ADDRESS

Benson AZ 85602
CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

Go North

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

DATE RECEIVED 6/18/10

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Letha Simmons

ADDRESS:

CITY: Benson STATE: Az ZIP: 85602

Organization (if applicable)

Add to mailing list ☐ Yes ☐ No

Withhold personal information* ☐ Yes ☐ No

Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

I believe the power should stay where it is produced. If it must go through Az, go Northern Az where fewer people live. Cochise Cty has more privately owned land then any other Az Cty. Do not put these lines through populated areas. Also wind energy is currently unreliable sources of electricity to use in this type of situation. I work with power companies all over the U.S. & I know this first hand. This "green" option has the ability to be "switched" to fossil fuel energy once the line is completed. We do not want our wonderful rural views turned into a steel tower city. Using I-10 corridor is just wrong as it is highly populated. I moved here for the ruralness & views, don't take that away from us. Please listen to my comments. California has the ability to produce their own wind farm, why destroy our state with these. We know this will increase our already high problem with illegal traffic, this would add to this problem. Thank you, it's appreciated

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

DATE RECEIVED 4/18/10

SunZia Southwest Transmission Project
Environmental Impact Statement

CATHERINE NEUBER
NAME
176 N TEQUILA TRAIL
ADDRESS
Benson AZ 85602
CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☐ Yes ☐ No
Withhold personal informarion* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

It is regretfue that a private concern ~~[illegible]~~ wishes to encude our area for their profit. It is understanbee and probably unstoppable despite the fact it should be a business that provides point of use services rather than interfere with the lives of others that neither profit or get use of the services. The current lines run legal in my back yard & I'm surrounded by other neighbors. Please consider a more northern area such as Springerville where no residencies exist

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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4 June 2010

DATE RECEIVED
6/18/10
RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:21
STATE OFFICE
SANTA FE, NM

To: NMSunZiaProject@blm.gov
BLM New Mexico State Office
SunZia Southwest Transmission Project
P>O> Box 27115
Santa Fe, NM 85702

Concerning the proposed route for SunZia's powerline across the northern ends of Socorro and Polvadera, I strongly urge you to reconsider the corridor proposed in SunZia's original 2008 filing, which follows White Sand's western fence line. I agree with the Fish and Wildlife Service that this western boundary route is the most reasonable in that it protects wildlife along the Rio Grande flyway and has the least impact on our communities. As pointed out by Kathryn Albrecht in her column in the May 29 edition of the El Defensor Chieftain, it alone avoids all Wildlife Refuges, Wilderness Areas, WSAs and BLM areas of critical environmental concern.

Thank you for your attention to this vital matter.

Sincerely yours,

David T Benavidez
PO Box 1024
Socorro, NM 87801

To: Mr. Adrian Gracia, Project Manager, Bureau of Land Management, New Mexico State Office, PO Box 27115, Santa Fe, NM 87502

From: Keith Banks and Donna Jameson, Ranchers in Socorro County, NM, PO Box 369, San Antonio, NM 87832, kbanks@plateautel.net

DATE RECEIVED 6/15/10

Subject: Comments on the proposed SunZia Southwest Transmission Project, June 8, 2010

We are ranchers that live on the path of the proposed E90 route, running south off routes E80 and E100. We own and operate this 30 section ranch and it provides our major source of income. The headquarters is at 34.4'50.8''N, 106.30'33.6''W. The E90 route is shown to run through our front yard, as well as through our BLM and NM State land leases. Our comments apply specifically to our holdings but are also applicable to the effects of this proposal on our whole valley.

First, ranchers in this valley have contracts with the US Army for their use of our airspace. Our area is called the Northern Extension of White Sands Missile Range. Our agreement with the Army is to evacuate our ranch when there is a missile firing, which gives the army a clear field for their operations, such as missile reentry. The proposed lines through the Northern Extension place at risk these contracts which provide a critical service to the Department of Defense.

It seems contradictory to place an electric power line through these airspaces that would be at risk of interruption by the Army's activities, when we are required by contract to leave our homes for these same activities.

Second, these power lines are environmentally objectionable because they will disrupt Native American home sites going back several hundred years, the homestead sites of the early pioneers who first came to this valley in the late 1800's and the activates of the current ranchers who have invested their time and resources into preserving and improving these grasslands while producing wholesome food.

Environmental degradation comes from noise, electromagnetic radiation, erosion, wild fires, increased traffic (air and surface), collisions by migratory birds and fragmentation of habitat. All these threaten the multiple raptor species, doves, quail, cactus wren, pronghorn antelope, oryx, mule deer, coyote, gray fox, cottontail and jack rabbits, owls, ravens, bats, and many other kinds of wildlife that live in this pristine valley.

In addition, our ranch's western, leased BLM land is part of the Stallion WSA, a preserve in the Sierra Larga Hills. Placing power lines just a short walk from this WSA, with all their hazards, is unacceptable because it would destroy those attributes that are the reasons the land was preserved in the first place.

Third, the power lines would be costly to our ranch operation because of decreased property values and interruption of our ranching operation. Our ranch is the result of a lifetime of hard work and saving, and these power lines degrade the home we have worked to build.

Our recommendations are: First, it be established with certainty that electricity generated from wind in New Mexico is the best way to meet the electricity needs of Phoenix and/or Los Angeles. Second, that transmission lines not be placed in pristine, undisturbed areas but along corridors that we accept as necessary intrusions on our landscape such as highways, railroads and pipelines.

Our mission, as is one of the BLM's, is to preserve our ranching communities, so we can continue to take care of our fading high desert grasslands.

Received at BLM
6/9/2010
AG

From: Mary Myers <takhi1@msn.com>
Subject: **choose the Tucson route**
Date: May 30, 2010 8:50:12 AM GMT-07:00
To: NMSunZiaProject@blm.gov

DATE RECEIVED
6/18/10

PLEASE!
If this project is really proposing to support the major energy markets, then it should work with the major energy market in the region it passes through. Routing through Tucson and more coordination with Tucson Power Electric Company will allow more local access to power in these lines and make much more efficient use of existing infrastructure corridors. *It will avoid permanent damage to wilderness areas in the Galiuro Mountains and the riparian ecology of the San Pedro River.* The Aravaipa/Galliuros wilderness areas should not be used as source of cheap public land in order to maximize corporate profits and control of energy resources for the project sponsors. If the project sponsors cannot afford to pay the true cost of developing this corridor in an environmentally responsible manner, then they should look to another region for passage to their ultimate destination.

Mary Myers
Mammoth AZ

Here's a hard copy — just want to make sure my concerns are considered!

Mary Myers

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:37
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

3-18-10

Dear Ms Garcia

RECEIVED
B.L.M.-MAILROOM
2010 MAR 22 PM 12:03
STATE OFFICE
SANTA FE, NEW MEXICO

The San Pedro River and its watershed are one of the great wild areas left in Arizona. It is vital for wildlife, especially migrating birds. To put the proposed NM Sunzia Project through this sensitive, vulnerable area would be a tragedy.

Put these projects on already existing corridors or better yet, how about alternative energy resources or suggest conservation.

Thank you.

R. Mossman

Robert Mossman
405 S 4th Ave
Tucson, AZ 85701

Received by BLM on 4-21-2010

Joyce Gates

DATE RECEIVED 4/18/10

We do not want these transmission lines anywhere near our land at Windmill Ranches - We have lots 88 + 89 + our daughter has lot 86 + our son lot 87 - None of us want these lines

Sincerely

Bill + Joyce Gates
1013 Utah Street
Clovis, NM 88101
575-762-5022

Colorful Images

Adrian Garcia, Project Manager for the SunZia Southwest Transmission Project

BLM New Mexico State Office

P.O. Box 27115

Santa Fe, New Mexico 87502-0115

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:38
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

Dear Mr. Garcia,

These comments are submitted in response to the addition of alternative routes for the SunZia Transmission Project in the Tucson area. SunZia clearly did not make a good faith effort to research, collaborate with stakeholders, and propose viable options for routes in this region.

Such efforts would include collaboration with southern Tucson Electric Power Company (TEP). There are significant opportunities to meet the goals of both organizations such as TEP infrastructure improvement projects in Tucson and SunZia's stated goal to minimize ecological damage along their path from energy source to destination. Missing these opportunities will neglect our region's needs. This could be achieved by co-locating lines desired by both organizations and by following a route that minimizes impacts in the city, such as the route proposed by the Cascabel Working Group. Routes currently proposed by SunZia would run lines over a historic neighborhood or adjacent to a National Park which blatantly overlooks the historic, ecological, and wilderness values of southern Arizona.

I urge BLM to take a much more proactive role in requiring the project proponents to collaborate effectively with the public rather than to continue to follow the current trend of unilaterally announcing possible routes through our region, some that would have enormous implications to ecosystems that have been in existence for thousands of years.

The beneficiaries of power from this project, such as Los Angeles, Las Vegas, and Phoenix, must ultimately bear the true cost of developing this infrastructure, and if unable to do so, must limit their growth and/or consumption of energy. A route for a project that mainly benefits urban growth centers must follow established corridors that connect these centers. It is not appropriate to bisect the cluster of Wilderness Areas in the Galiuro Mountain region or damage the massive conservations efforts in the San Pedro riparian zone for the sake of corporate or mega-metropolitan interests.

Again , I urge SunZia to collaborate effectively with the stakeholders in the process of developing possible routes that do not fragment and significantly damage the dwindling ecological reserves of our region.

Thank you for considering my comments.

Sincerely,

Loraine Zagula

Loraine Zagula

1613 E. Adelaide Dr.

Tucson, AZ 85719

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:26
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115
June 2010

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales, land leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

Full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Thelma Lanita Rasak

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:27
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Jerry and Martha Bond
351 Red Lake Rd
Carrizozo, New Mexico.
88301

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:27
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in our County, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

Leroy Bond / Bond + Bell Logging Assoc.

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:27
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Larry Bond / E.T. Bond Livestock Co.

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12:20
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

Dear Sir/Madam:

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The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Payne Alford

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12:20
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/8/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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Sincerely,

Regina Alford

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12:21
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

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I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

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Sincerely,

Eugene Alford

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:34
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115
June 2010

Dear Sir/Madam:

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Full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Gerald L. Rosak
Corona N.M.
88318

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 09
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:
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Sincerely,
Tom Brown

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 09
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

Dear Sir/Madam:

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New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Tom Brown

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 08
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
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SunZia Southwest Transmission Project
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Santa Fe, NM 87502-0115

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Sincerely,

Tom Brown

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12:08
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

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Sincerely,

Justin Washburn

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 09
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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Sincerely,

Becky W Brown

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 10
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
4/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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Sincerely,

Becky W. Brown

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12:20
STATE OFFICE
SANTA FE, NEW MEXICO

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6/18/10

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Sincerely,

Becky W. Brown

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12:33
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/17/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Korie Washburn

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 05
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

4 June 2010

To: NMSunZiaProject@blm.gov
BLM New Mexico State Office
SunZia Southwest Transmission Project
P>O> Box 27115
Santa Fe, NM 85702

Concerning the proposed route for SunZia's powerline across the northern ends of Socorro and Polvadera, I strongly urge you to reconsider the corridor proposed in SunZia's original 2008 filing, which follows White Sand's western fence line. I agree with the Fish and Wildlife Service that this western boundary route is the most reasonable in that it protects wildlife along the Rio Grande flyway and has the least impact on our communities. As pointed out by Kathryn Albrecht in her column in the May 29 edition of the El Defensor Chieftain, it alone avoids all Wildlife Refuges, Wilderness Areas, WSAs and BLM areas of critical environmental concern.

Thank you for your attention to this vital matter.

Sincerely yours,
Laurie and Olaf Heintz
402 Reservoir St.
Socorro,NM,87801

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe NM 87502-0115

DATE RECEIVED
6/18/10

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Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales, land leases, construction jobs and full time jobs, as well as government revenue from sales taxes, property taxes and income taxes.

Full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Crystal Bell

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12:06
STATE OFFICE
SANTA FE, NEW MEXICO

RECEIVED
B.L.M.-MAILROOM

2010 JUN -9 PM 12: 07

STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in our County, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

Korie Washburn

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 30
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:
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Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,
Clint Leary Sultemeier

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 34
STATE OFFICE
SANTA FE, NEW MEXICO

DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Lorie Washburn

RECEIVED
B.L.M.-MAILROOM
2010 MAY -6 AM 11:24
STATE OFFICE
SANTA FE, NEW MEXICO

epg
DATE RECEIVED
6/18/10

May 5, 2010

Ms. Linda Rundell, State Director
Bureau of Land Management
New Mexico State Office
ATTN: SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Ms. Rundell:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project is vital in helping Lincoln County and New Mexico achieve development of this region's renewable energy resources. We would definitely be disadvantaged by the lack of our ability to get the needed transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal, biofuel and biomass. A county-wide initiative has been underway since November 2009 to identify and develop these resources. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes. Full development of this area's renewable resources would be hindered if we do not have high voltage transmission access. The SunZia project would provide needed transmission access.

The BLM has done an excellent job in soliciting public opinions in Lincoln County and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Lucy Rickman

Lucy Rickman

"Andy Laurenzi"
<alaurenzi@cdarc.
org>
06/11/2010 08:49
PM

To
<Adrian_garcia@nm.blm.gov>,
<NMSunZiaProject@BLM.gov>
cc

Subject
Scoping COmments

Per your recent round of scoping for the SunZIa project please note the comments submitted by Center for Desert Archaeology and National Trust for Historic Preservation.

Andy Laurenzi
Center for Desert Archaeology
300 N. Ash Alley
Tucson, AZ 85701
520-882-6946x14 alaurenzi@cdarc.org
Preserving the Places of Our Shared Past

(Embedded image moved to file: pic06972.jpg)Center Logo (Official) Horizontal (no address) (Embedded image moved to file: pic26821.jpg)5 Line
- Small - Brick Inverse_tif
www.cdarc.org
www.preservation.org
(See attached file: final_SunZia comments_CDA_NTHP_6_10_10_.pdf)

NATIONAL TRUST FOR HISTORIC PRESERVATION

June 10, 2010

VIA ELECTRONIC SUBMISSION (adrian_garcia@nm.blm.gov; NMSunZiaProject@blm.gov)

Mr. Adrian Garcia, BLM Project Manager
SunZia Southwest Transmission Project
Bureau of Land Management
New Mexico State Office
P.O. Box 27115
Santa Fe, NM 87502-0115

Re: Recommendations for the SunZia Southwest Transmission Project

Dear Mr. Garcia:

The Center for Desert Archaeology (CDA) and the National Trust for Historic Preservation (National Trust) appreciate BLM's continuing efforts to solicit public scoping comments regarding SunZia Transmission, LLC's (SunZia) proposal to construct, operate, and maintain a 500 kV transmission line across southern New Mexico and Arizona. We also applaud SunZia for continuing to offer new alternative routes in response to stakeholder input. In addition, we support SunZia's intention to prepare a detailed Construction Operations and Maintenance plan for inclusion in the draft environmental impact statement for this project.

This letter is intended to build upon our earlier scoping comments of August 27, 2009, and November 25, 2009, and responds to the most up-to-date information provided by the Bureau of Land Management (BLM). These comments express our continued concerns and recommendations for some of the proposed transmission line routes.

I. Consider Pima County Priority Cultural Resources

Pima County has recently identified a set of "Priority Cultural Resources" areas as part of the County's Sonoran Desert Conservation Plan. Impacts to these significant cultural areas must be considered in analyses of new alignments proposed for the Tucson Basin. Early consultation with interested parties, such as Pima County, per the National Historic Preservation Act (NHPA) will help to ensure that cultural resource values are thoroughly considered in the planning process, and will help avoid any late surprises with respect to cultural resources.

Recommendations:

- Thoroughly consider impacts of the newly proposed Tucson Basin alignments to significant known cultural resources.
- Initiate Section 106 of the NHPA as soon as possible so that the SunZia project avoids significant cultural resources early in these early stages of the planning process.

II. Use Existing Information to Identify and Remove Routes with Known Impacts to Significant Cultural Resources

We appreciate BLM's identification of cultural resource priority areas based on information we and others have submitted. Unfortunately we are unable to o discern how this information has influenced the design or consideration of proposed alignments. In particular, we draw your attention to the following line segments: C170, C400, C420, C430, C440, C443, C450, C460, C530, C540, C590, C790, F450, F461, F470, and F440. These routes, in particular, traverse cultural resource priority areas that have already been identified by CDA and despite the information provided no removal or re-alignment of these linkages has occurred since the beginning of the scoping process.

Recommendation:

- Remove line segments C170, C400, C420, C430, C440, C443, C450, C460, C530, C540, C590, C790, F450, F461, F470, and F440 from further project consideration.

III. Remove the Lower San Pedro and Upper Aravaipa areas of Arizona from Project Consideration.

We believe that the information that has been generated through the scoping process much of which is presented on your website, amplifies our earlier and continuing concerns regarding the significant resources at risk in Arizona from the alignments proposed for the lower San Pedro and Upper Aravaipa areas. We consider the impacts to cultural resources in these areas to be unacceptable under any "mitigation" scenario, so we strongly encourage you to drop these alignments from further consideration.

Recommendation:

- Remove all alignments through the Lower San Pedro and Upper Aravaipa areas of Arizona from consideration for the proposed project.

IV. Remove the Alignments North of New Mexico's Bosque del Apache from Project Consideration

Similarly, alignments located north of the Bosque del Apache in central New Mexico would have unacceptable impacts to cultural resource values. For example, high potential route segments of El Camino Real de Tierra Adentro National Historic Trail—whose preservation is vital for maintaining the trail's integrity—could be impacted. This is especially true for the "new" alignments" proposed for consideration since our letter of August 27, 2009. These travel through areas of great cultural significance and pose unacceptable risks to these resources and should be dropped from further consideration.

Recommendations:

- Remove all alignments located north of the Bosque del Apache from consideration for the proposed project.

V. Increase Information Dissemination and Transparency during the Project Scoping Process

BLM should follow the model set in other EIS processes run by BLM, including the Solar Programmatic EIS (PEIS), Geothermal PEIS, and West-wide Energy Corridors PEIS, as well as processes such as the Western Governors' Association Western Renewable Energy Zone Project, and provide the data for download on the project website. At present there appears to be an informal process whereby certain external stakeholders have been assigned the role of gatekeeper for such data. This is not appropriate and conflicts with the goal of transparency that BLM is striving to achieve with this process.

Recommendation:

- Provide GIS data and other relevant project information on a publicly accessible website so that all stakeholders have equal access to them.

Contact Information

Please continue to include Rebecca Schwendler and Andy Laurenzi in your distribution list for public notices of any future meetings, for dissemination of documents for comment, and for all future activities associated with the Section 106 process. All correspondence should be sent to:

Rebecca Schwendler
Public Lands Advocate
National Trust for Historic Preservation
535 16th St, Ste 750

Andy Laurenzi
Field Representative
Center for Desert Archaeology
300 E. Universitu Suite 230

Denver, CO 80202
rebecca_schwendler@nthp.org
303-623-1504

Tucson, AZ 85705
alaurenzi@cdarc.org
520-882-6946

We appreciate the opportunity to provide these comments and we look forward to participating further in this process.

Sincerely,

William H. Doelle, Ph.D.
President and CEO, Center for Desert Archaeology

Jonathan Poston, Director
Southwest Office, National Trust for Historic Preservation

Anthea Hartig, Director
Western Office, National Trust for Historic Preservation

Barbara Pahl, Director
Public Lands Program, National Trust for Historic Preservation

Cc: Andy Laurenzi, Center for Desert Archaeology
Rebecca Schwendler, National Trust for Historic Preservation
James Garrison, Arizona State Historic Preservation Officer
Jan Biella, Interim New Mexico State Historic Preservation Officer

RECEIVED
B.L.M.-MAILROOM
2010 APR 30 AM 11:53
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

To Whom It May Concern:

As a member of the Corona Landowners' Association and a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs to a depressed area and contribute to the tax revenue thus aiding in the financing of education for the youth of Lincoln County.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, full-time jobs, as well as government revenue from sales taxes, property taxes and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

I am urging you to support the project by the prompt approval of all necessary permits.

Sincerely,

Jeanene Gibbs

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 APR 26 AM 11:39
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in our County, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

Edward Gage

epg
JUN 18 2010

RECEIVED
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2010 APR 26 AM 11:39
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

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New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

LaVerne Gage

JUN 18 2010

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

RECEIVED
B.L.M.-MAILROOM
2010 APR 26 AM 11:41
STATE OFFICE
SANTA FE, NEW MEXICO

Dear Sir/Madam:

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New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely, Bradley L Sage
PO Box 422
Corona NM 88318

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 APR 26 AM 11:39
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Barbara Sage

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 APR 26 AM 11:42
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
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Santa Fe, NM 87502-0115

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Sincerely, Bradley J Sage
PO Box 422
Corona, NM 88318

JUN 18 2010

Received by
BLM on 6/2/2010
AAG

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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Sincerely,

Gaylon Herrera

Gaylon Herrera

EIVED
JUN 18 2010

Received by
BLM on 6/2/2010
AAG

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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Sincerely,

JUN 18 2010

Received by
BLM on 6/2/2010
AG

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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Sincerely,

Nellie Stone

BLM
JUN 18 2010

Received by
BLM on 6/2/2010
AG

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Susanne Du Ancer PhD
Lincoln NM 88338

JUN 18 2010

From: Norm Meader
To: NMSunZiaProject@blm.gov
Cc: Alex Daue; JShepard@sonoraninstitute.org
Subject: Report on SunZia Tucson Routes - Cascabel Working Group
Date: 06/06/2010 08:56 PM
Attachments: CWG SunZia Report Complete-06-06-10.pdf
Garcia_BLM_Tucson_SunZia_Routes-06-06-10.pdf

Dear Adrian,

Attached is a report that I've completed on SunZia routes through central Tucson and a cover letter that explains the report. I will also send you the report and letter by mail. The report contains quite a few colored maps and photos and will need to be printed in color to bring out and preserve some of their detail.

Thanks for considering this. If you have any questions, please let me know.

Sincerely,
Norm "Mick" Meader
Member, Cascabel Working Group
Tucson, AZ

3443 E. Lee Street
Tucson, AZ 85716
June 6, 2010

Mr. Adrian García
Bureau of Land Management
SunZia Transmission Line Project
P.O. Box 27115
Santa Fe, NM 87502-0115

Dear Adrian:

As a member of the Cascabel Working Group, I have extensively analyzed central Tucson routes for the SunZia Southwest Transmission Project and am attaching a copy of my report. I have attempted to look at these routes as objectively as possible and suggest alternatives to make them more viable. I understand the enormous difficulty of finding a workable Tucson route and hope this will be helpful.

The report begins with a summary that includes (1) a proposal for a more viable Tucson route, (2) recommended technologies to reduce the environmental and social impact of the project, (3) negotiations required with specific entities to use the alternative route, and (4) how this route and project could benefit Tucson and southern Arizona. The report continues with an introduction, a detailed route analysis, and two appendices that provide concrete examples of alternative transmission technologies. The main points of the report are briefly summarized below.

Opening Comments

- This report does not address routes that cross the Southlands and pass through Avra Valley via Sahuarita and Green Valley because the environmental community and valley residents object strenuously to their impact on Saguaro National Park, Tucson Mountain Park, the Bureau of Reclamation's Wildlife Mitigation Corridor, the Arizona–Sonora Desert Museum, the Ironwood Forest National Monument, and the Picture Rocks community.

- If the project were routed through Tucson, Tucson Electric Power Company would use much more of the power from the system and be a greater partner in the project. Southern Arizona will need ~3,000 MW of additional power over the next 20-25 years, the full capacity of the SunZia Project. In addition, having this capacity available within Tucson would significantly reduce the need for TEP to build additional transmission projects in highly sensitive areas.

- Because of the project's size and associated visual impact, need for a wider right-of-way, and multiplication of lines within established transmission corridors, it is important to consider any technology that can reduce the project's physical dimensions. These technologies include (1) pole (or tower) design, (2) double-circuiting, and (3) compact line technology. These need to be seriously considered even though SunZia may initially object to them. The appendices provide ample worldwide examples of using these technologies for extra-high-

voltage transmission lines. Because of cost and complexity, we do not advocate undergrounding the lines unless it is the only possible way to deal with social objections and restricted right-of-ways.

Route Suggestions

- In entering Tucson from the east, the SunZia Project crosses the Cienega Creek Natural Preserve and passes through the Vail community, a very sensitive area. An alternative route is suggested south of I-10 that bypasses this area, significantly reducing impact without appreciably affecting the project's length or cost.

- An alternative route is suggested to reach the Pantano Wash–Rillito River corridor from I-10 that parallels Houghton Road west of Vail, again eliminating the impact on Vail and providing a physically easier path for the project to reach the Pantano Wash. Although we do not advocate a Pantano Wash–Rillito River route, we nevertheless offer this suggestion.

- An alternative route to reach the Santa Cruz River corridor is proposed that greatly reduces the impact upon residential and business areas and removes the project from the vicinity of the Davis-Monthan Air force Base, which undoubtedly will not permit the project to pass as close to the base as currently proposed. In addition, none of the subroutes that SunZia proposes to reach the Santa Cruz River – the principal corridor needed to pass through the city – appears physically feasible because of insufficient space, and the suggested alternative resolves this problem.

Additional Comments

- To be feasible, the alternative route proposed through the city will require very careful and potentially difficult negotiations with the Tohono O'odham Nation, the city of Tucson, and Pima County, each of whom is likely to object strongly to it, at least initially. In addition, the Army Corp of Engineers, which oversees the Santa Cruz River corridor, will have stringent rules for using it, which could complicate securing its use.

- Other than the environmental community and a few public officials, no one within Tucson or the surrounding area who would be affected by the project knows of it. Additional public meetings and consultations with specific communities and neighborhoods seem essential before a route could be decided.

- The project must provide significant benefit to Tucson and southern Arizona for the public and public officials to support it. If the project is configured merely to pass through the city to deliver power to Pinal Central for distribution to mostly Phoenix and California, Tucsonans have no reason to get behind it. If SunZia works with Tucson Electric Power Company and other local utilities to provide power to help meet future local needs, this could ease objections.

- Effectively resolving a route for this project is almost certain to require considerably more time than SunZia is willing to give. The project's size and length coupled with the attendant

need for complex negotiations to determine a route and the uncompromising positions of people in critical areas are bound to delay the project. This is characteristic of similar EHV transmission projects, and everyone involved should expect this, investors as much as anyone.

Thank you for considering the enclosed report.

Sincerely,

Norman M. (Mick) Meader
(520) 323-0092
nmeader@cox.net

Enclosures

ANALYSIS OF AND RECOMMENDATIONS FOR A CENTRAL TUCSON ROUTE FOR THE SUNZIA SOUTHWEST TRANSMISSION PROJECT

Norman M. "Mick" Meader
Cascabel Working Group
Tucson, Arizona

June 5, 2010

SUMMARY RECOMMENDATIONS FOR A CENTRAL TUCSON SUNZIA ROUTE

I. Route Recommendation

The most probable central Tucson route for the SunZia Project is down the Santa Cruz River corridor. However difficult this route will be, it appears significantly more plausible than following the Pantano Wash–Rillito River corridor, the other physically realistic route to consider.

SunZia has proposed three routes to reach the Santa Cruz River, none of them truly physically possible: (1) north side I-10 (Union Pacific Railroad/Aviation Highway corridor), (2) south side I-10 (includes Benson Highway corridor), and (3) Drexel Road (proposed to reach Avra Valley but crosses the Santa Cruz River). The new route recommendation is as follows (Figure 1):

- Proceed due west from the Vail substation, following Tucson Electric Power Company's 138-kV line along the East Old Vail Connection Road to the eastern boundary of the San Xavier District of the Tohono O'odham Nation.
- The route must then cross the northeast corner of the District to reach the Santa Cruz River, either on the east or west side of Martinez Hill. This could be a difficult negotiation with the Tohono O'odham Nation.
- The route then proceeds northward up the Santa Cruz River for 2–3 miles until it again encounters TEP's 138-kV line, which runs within the Santa Cruz River corridor northward. The route will then follow this line until it encounters SunZia's proposed route.

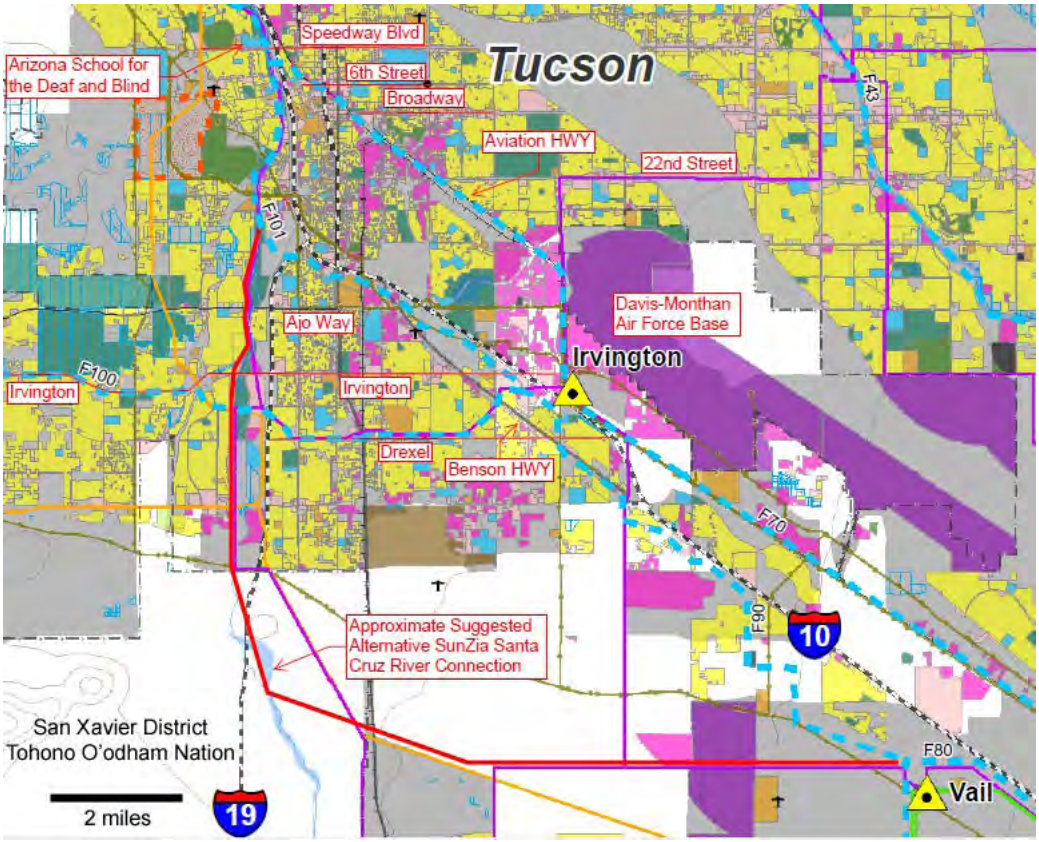

Figure 1. Proposed alternative route for the SunZia Project to reach the Santa Cruz River corridor.

Advantages of this route are as follows:

- This route contains more than adequate space to hold the project's lines. SunZia's proposed routes do not.
- Right-of-way will be much more easily obtained, and land negotiations will far less numerous and complex.
- The route reduces the cultural features encountered by orders of magnitude (residential and business areas in particular).

This route will encounter strong opposition from several entities, enumerated in *Negotiations Required* below. These entities may not consent to having the project cross the lands they oversee, but it is important to approach them before abandoning a Tucson route for the project.

II. Technology Recommendations

Because of space limitations within Tucson, it is essential to use any technology that can reduce the right-of-way required and the visual impact of the project, i.e., the size of towers and line spacing. While SunZia may be uncomfortable with these technologies because of possible concerns over decreased reliability, these must be considered. They include the following:

- Tubular-steel pole structure instead of a traditional lattice tower structure, with the best color or pattern to blend with the environment.
- Double-circuiting of lines (having a single set of towers hold both circuits).
- Compact line technology.

The most promising and aesthetic technology found is that for the 420-kV double-circuit compact transmission line manufactured and installed in Dubai by Pfisterer, as shown below:

Figure 2. Pfisterer 420-kV double-circuit compact transmission line installed for the Dubai Electricity and Water Authority in 2007. Left photo, the line on the right replaces that on the left. Right photo, close-up of tubular steel tower with insulated cross arms using composite insulation technology.

While this technology will need to be scaled up somewhat for 500-kV lines and will cost more than traditional structures, it is important to consider it as part of a Tucson route solution.

III. Negotiations Required

- *Arizona State Prison and the Federal Prison Systems*: Just west of the Vail substation the recommended route passes between the Arizona State and Federal Prisons. While more than adequate space is available between the two for the project, conflict with these agencies is possible.
- *Tohono O'odham Nation*: The recommended route must cross the northeast corner of the San Xavier District of the Tohono O'odham Nation, and the Nation has in the past refused to allow Tucson Electric Power Company to cross this District with its lines. However, the Tohono O'odham were apparently open to allowing the SunZia Project to cross the Garcia Strip in Avra Valley, which is somewhat encouraging.
- *Pima County*: For much of the distance through the city of Tucson, Pima County has established the Santa Cruz River Park and has spent several million dollars creating walking, cycling, and horseback-riding pathways along the river, including extensive landscaping. The county will strongly object to having the project within the park. However, if the lines are run on a single set of transmission towers using singe-pole compact-line technology and if they replace TEP's current 138-kV line and do not create a multiplicity of new lines, perhaps the county would consider this.
- *City of Tucson*: In following the Santa Cruz River, the project will also cross the city of Tucson's Rio Nuevo Downtown Redevelopment Project, which the city is spending $700 million on. The city will strongly object to this crossing. Given that the project would help secure needed future power for the city if routed through Tucson, and if the project is as compact and aesthetic as possible, perhaps the city will consider this.
- *Tucson Electric Power Company*: The SunZia Project will have to use TEP's corridors to run its lines, and if the Santa Cruz corridor is chosen, SunZia will have to negotiate with TEP for corridor use and to remove and replace TEP's 138-kV line with its own lines. TEP appears very open to working this out.

VI. Benefits to Tucson, Southern Arizona and Tucson Electric Power Company

- If the Project is run through Tucson, Tucson Electric Power Company will acquire more power from it, which will help fill and stabilize Tucson's and southern Arizona's future power needs.
- Subscribing to more SunZia power will help TEP meet future state-mandated renewal-energy quotas for the area.
- TEP will not have to build the two 345-kV transmission lines that it has planned from the Winchester substation northeast of Benson into Tucson.
- TEP can defer or dismiss plans to build new extra-high-voltage (EHV) transmission lines down the environmentally sensitive San Pedro and Avra Valleys. Within its 10-year plan, TEP also would build an EHV line to Tucson from the Westwing substation northwest of Phoenix, crossing the Sonoran Desert and Ironwood Forest National Monuments.

Concluding Reflections

Successfully routing the SunZia Project will require coordination with several entities who will, at least initially, strongly object to the project and, by virtue of the land they oversee, have veto power over it. Success will be possible only by demonstrating a significant potential benefit to Tucson and southern Arizona and only by reducing the project's footprint as much as possible.

Part of making a Tucson route viable rests in using the best technology available to make the project compact and aesthetic. Combining a high-tech transmission solution with Tucson's downtown revitalization project will also be necessary. With coordination, cooperation and a mutually shared vision, perhaps those entities likely to object to and block the project could come together to provide Tucson with a state-of-the-art transmission system that could serve as a model to other cities for meeting future energy needs. The most difficult and important aspect of a Tucson route is gaining the consent of its citizens and those businesses who may feel hurt by the project and convincing the public that the project will genuinely benefit Tucson and not merely carry power to Phoenix and California.

INTRODUCTION

Overview

This report reviews those routes that are proposed for the SunZia Southwest Transmission Project through central Tucson, pointing out problems with them and offering alternatives and potential mitigating solutions. The report first briefly summarizes the future power needs of southern Arizona and how routing the project through Tucson could help Tucson Electric Power Company (TEP) and southeastern Arizona by providing more power. This would eliminate the need for TEP to build certain transmission lines and would provide alternatives to planned transmission lines that are likely to encounter great controversy if built.

The great difficulty with routing the project through Tucson is its sheer size – the width of right-of-way required to support two separate lines and the size and height of the towers. To address this impact, Appendices I and II summarize potential technological measures to diminish it, and these measures are employed in the discussions of the various alternative routes. The magnitude of the social impact of a Tucson route would be great also, and this impact presents perhaps the greatest single obstacle to finding a workable solution. This impact can be mitigated only by reducing the project's footprint as much as possible.

Projected Southern Arizona Power Needs and Benefits to Tucson Electric Power

Figure 1 is taken from a presentation by Ron Belval of Tucson Electric Power Company (*Belval*, 2009) to the Southwest Area Transmission Oversight Committee and shows the projected growth in southern Arizona's power needs over the next 20 years. These needs are expected to double from ~3000 MW to ~6000 MW, nearly the full capacity of the SunZia Project if SunZia were to construct two 500-kV AC lines. Although the SunZia Project will provide some energy and stability to Tucson Electric Power Company's grid and to that of the Southwest Transmission Cooperative through the new Willow 500-kV substation, southern Arizona will need far more new energy than this to meet its power requirements.

If the project could be routed through Tucson, TEP could potentially acquire much more power from it, and TEP would seriously consider increasing its percent interest in the project (Ed Beck, TEP line-siting manager, personal communication). As it is, TEP has only a 1% interest in the project, presumably because the project will benefit predominantly Phoenix and California. In addition, if the two 500-kV lines were routed through Tucson, this would eliminate the need for TEP to construct two new 345-kV lines from the Winchester substation northeast of Benson to the Vail substation in southeast Tucson (Ed Beck, personal communication). TEP would also consider allowing replacement of its 138-kV transmission line in the Santa Cruz River corridor with one of SunZia's 500-kV lines.

Although southern Arizona could easily consume all of the power provided by one of these 500-kV lines over the next two decades, we understand that it is necessary to route both 500-kV lines completely to the Pinal Central substation, the project's destination, to maintain the reliability and integrity of the transmission system. If one circuit were to fail, the second would be needed

to maintain power delivery. While it might be tempting to some to terminate one of the lines in Tucson, this would result in an unacceptable risk to the reliability of the transmission system.

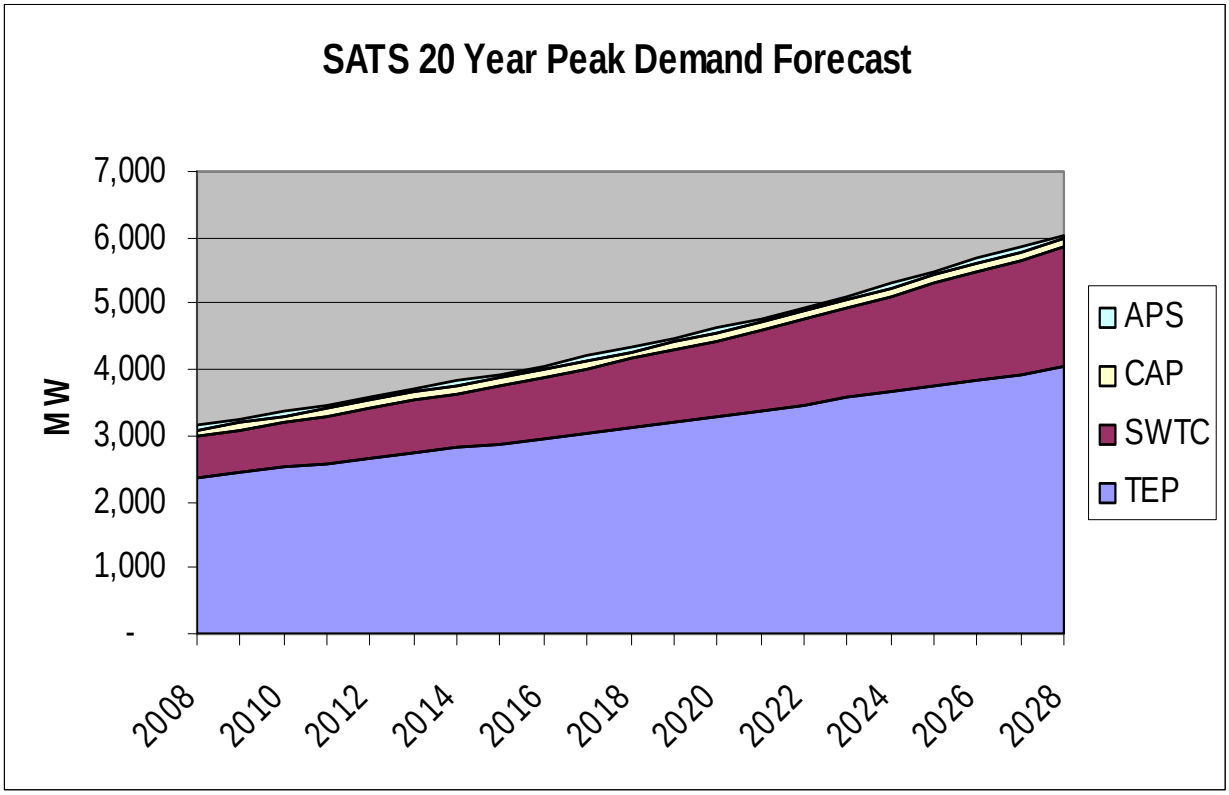

Figure 1. Southern Arizona Transmission System projected peak demand (from *Belval*, 2009); excludes UniSource Energy loads in Santa Cruz County that are currently supplied from the WESTERN system but are planned to be served from the TEP network by 2012. The two utilities that provide most of the power for southern Arizona are Tucson Electric Power Company (TEP) and the Southwest Transmission Cooperative (SWTC), headquartered in Benson, Arizona.

Difficulties with Tucson Electric Power Company's Future Transmission Plans and How SunZia Could Partially Offset These Difficulties

The extra-high-voltage (EHV) transmission routes and lines included in TEP's ten-year plan for bringing additional power to Tucson are each fraught with serious environmental and social obstacles, and acquiring more power from the SunZia project could help offset the need for them. At present, TEP's ten-year plan relies on constructing a 500-kV transmission line down the environmentally sensitive San Pedro Valley east of Tucson, a 345-kV line down Avra Valley west of Tucson, and a 345-kV line from the Westwing substation northwest of Phoenix to the South substation south of Tucson.

The Avra Valley line would cross the Ironwood Forest National Monument and the Tohono O'odham Nation, and the Westwing line would cross the Sonoran Desert and Ironwood Forest National Monuments and the Tohono O'odham Nation (Figure 2) – both routes that will be environmentally and socially sensitive. TEP has also tried to build a double-circuit 345-kV line from the South substation near Sahuarita to the border town of Nogales, apparently intending to import power from Mexico for the Tucson metropolitan area. This latter project itself currently

cannot be completed because the permitting agencies involved cannot agree on an acceptable route. The social and environmental difficulties associated with all of these lines accentuate the potential importance of the SunZia Project to Tucson and southeastern Arizona.

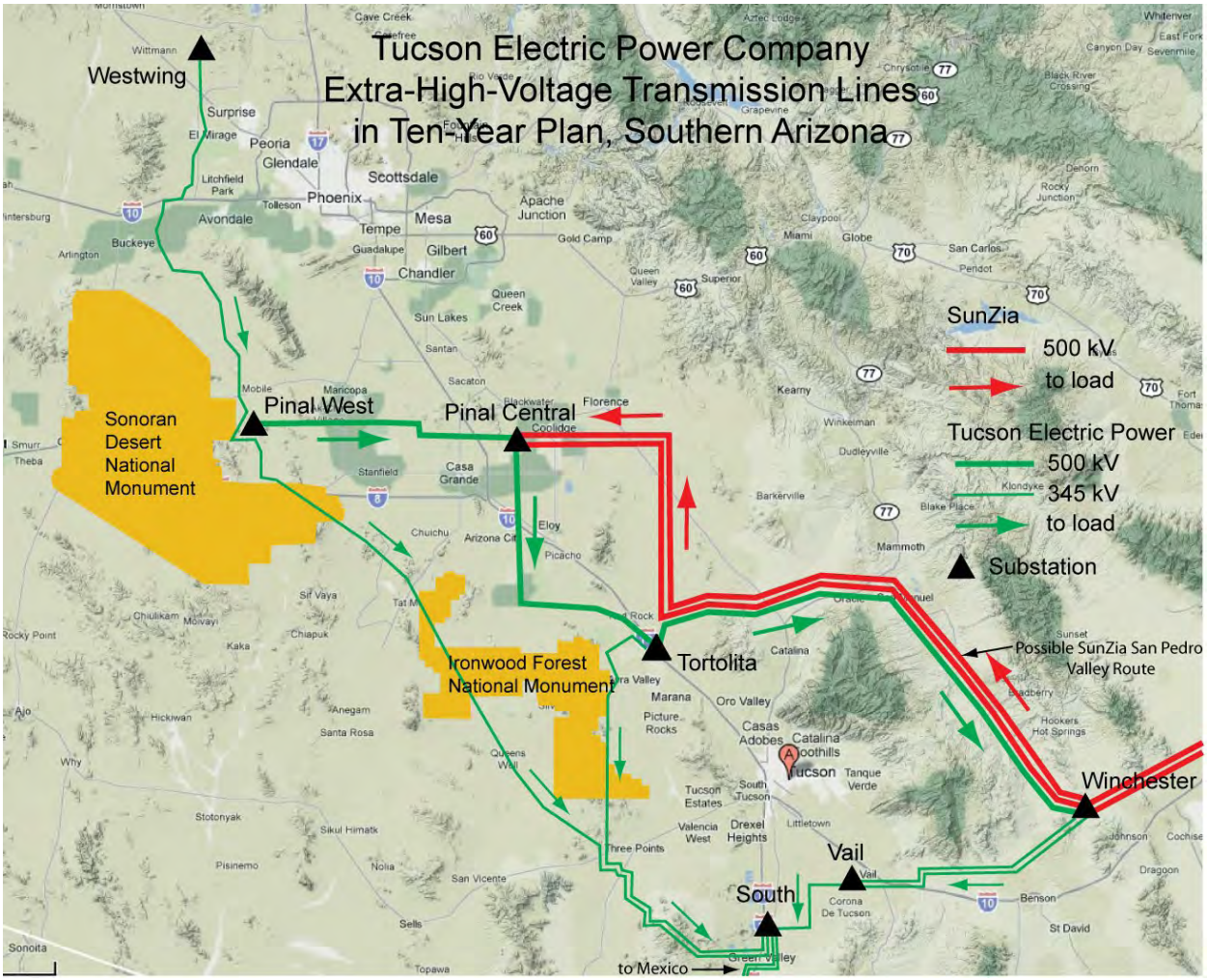

Figure 2. Schematic diagram of 345-kV and 500-kV transmission lines in Tucson Electric Power Company's ten-year plan compared with one possible route for the SunZia Southwest Transmission Project. If the SunZia Project were routed through Tucson, it could potentially provide some of the power that TEP would get from these planned transmission lines and would eliminate the need for the two 345-kV lines it has planned into Tucson from the Winchester substation. The project could also partly offset the social and environmental difficulties with building these lines.

Mitigation Technologies to Reduce Required Right-of-Way and Line Height

The two most difficult problems to overcome in routing the SunZia Project through Tucson are the space required for the project and social objections to it. Appendices I and II describe four potential ways of reducing these: (1) pole or tower design, (2) double-circuiting the lines (placing both circuits on a single set of towers), (3) using compact transmission line technology, and (4) placing the lines underground in critical areas. These methods are needed to mitigate both the physical and social problems perceived with the various Tucson routes that SunZia has

proposed. It will be necessary to reduce the project's footprint through Tucson as much as possible to acquire the right-of-way needed for the lines and to preserve corridor space for possible additional lines, particularly where the SunZia Project may occupy or parallel Tucson Electric Power Company's corridors.

At the very least, the lines will need to be double-circuited in certain intervals, and placing them on tubular-steel poles rather than lattice-type transmission towers would save significant space horizontally and be more aesthetic, an important social consideration. We also strongly urge the use of compact transmission line technology to further reduce size and impact (see below). Because undergrounding of lines greatly increases costs and technical complexity, it is something to consider only if no other alternative exists for completing the project. The most probable place where this might be necessary is through the heart of downtown Tucson along the Santa Cruz River where the project would traverse the Rio Nuevo Downtown Redevelopment Project.

On the Future of Overhead Transmission Lines

From *Overhead Power Lines: Planning, Design, Construction*, by F. Kiessling, P. Nefzger, J. F. Nolasco, and U. Kaintzyk, 2003.

> "The expectation is that the amount of land available for transmission projects will decrease due to both increasing population density and increasing land prices. Since overhead lines need much larger areas than equivalent cables, the future tendency will give greater consideration to building *compact overhead lines* [emphasis in the original] and to undergrounding new and in some cases existing medium-voltage connections." (page 20)

Parameters of "paramount importance" for selection of support design include:

> "An optimum utilization of the rights-of-way, considering that the obtainability of land for new lines is becoming increasingly difficult and costly. Thus, for a better use of land, the design of compact lines or of multiple-circuit lines is more and more attractive and economic." (page 357)

Reference

Belval, R., Southeast Arizona Transmission Study, Overview of SATS Report, Presentation to the SWAT Oversight Committee, January 13, 2009, Las Vegas, Nevada (PowerPoint presentation), 20 pp. Accessed from http://www.westconnect.com/filestorage/SATS%20SWAT%20Oversight%20Committee_011309.ppt, May 9, 2010.

CENTRAL TUCSON ROUTE ANALYSIS

The principal challenge with routing the SunZia Project through the city of Tucson is finding a sufficiently wide right-of-way and coping with the greater impact upon human settlement patterns and cultural features. Keeping the transmission lines immediately adjacent to Interstate 10 within the city is not physically feasible in many places, and the two principal corridors that are sufficiently wide to use are the Santa Cruz River on the west side of the city (routes F101 and F102) and the Pantano Wash/Rillito River on the east and north side of the city (route F43) (Figure 1). Each of these two corridors currently hosts 138-kV lines of Tucson Electric Power Company for part of the distance that the SunZia Project would follow them.

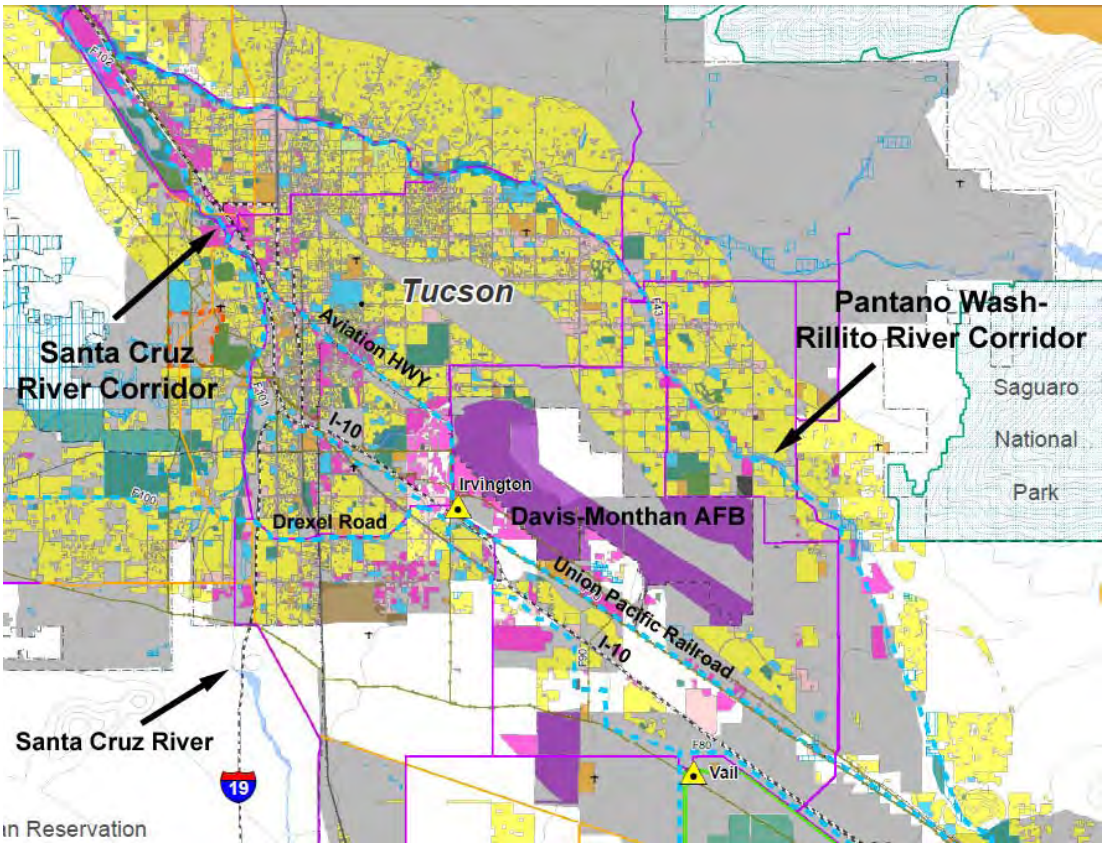

Figure 1. The two potential corridors proposed for a Tucson SunZia route.

Pantano Wash/Rillito River Corridor

The Pantano Wash is the continuation of Cienega Creek, which passes through Vail east of the city and is protected within Pima County's Cienega Creek Natural Preserve (Figures 2 and 3). SunZia has three proposed routes into Tucson from the east that it would use to reach the Pantano Wash at Vail: (1) the 345-kV transmission line corridor from the Winchester substation northeast of Benson, (2) the Union Pacific Railroad, and (3) a pipeline corridor on the north side of I-10 (Figure 2). As currently configured, the transmission project would be within or adjacent to the Pantano Wash and Rillito River for approximately 40 miles before reaching the Santa Cruz River on the west side of Tucson. The route intersects Tucson Electric Power Company's 138-kV line near Speedway Boulevard, somewhat more than half the distance to the Santa Cruz River.

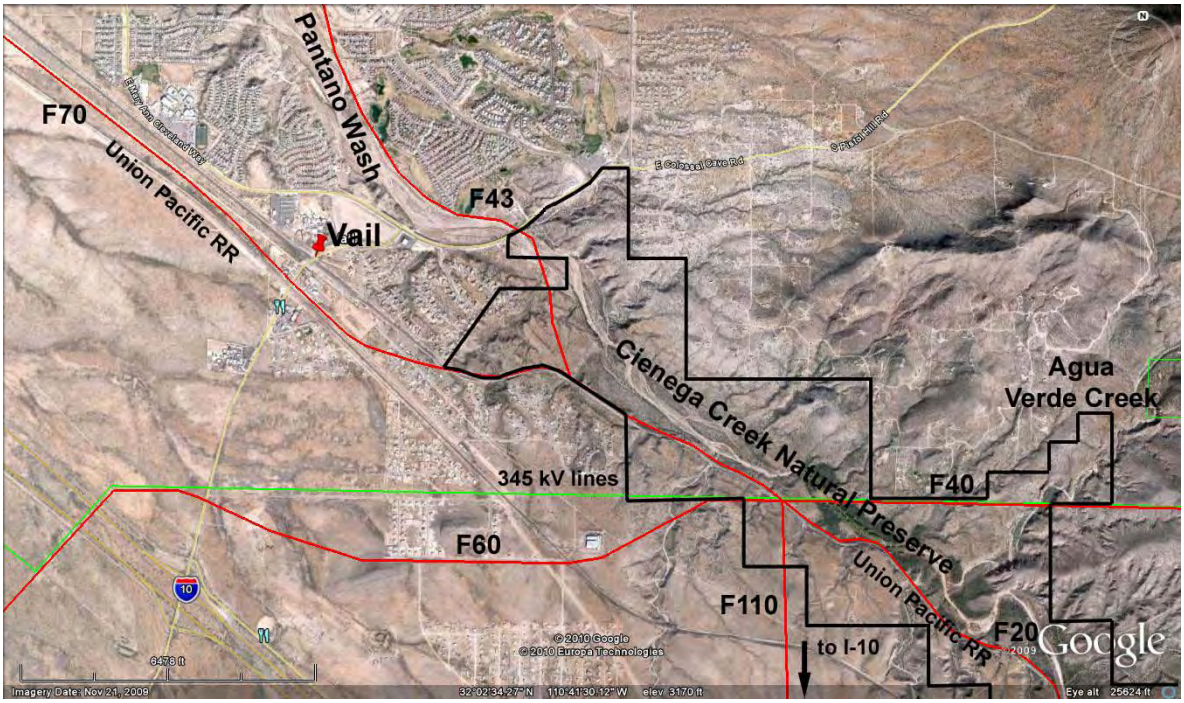

Figure 2. SunZia proposed routes through the Vail and Cienega Creek area (red lines). The green line corresponds to the two 345-kV lines that come from the Winchester substation northeast of Benson.

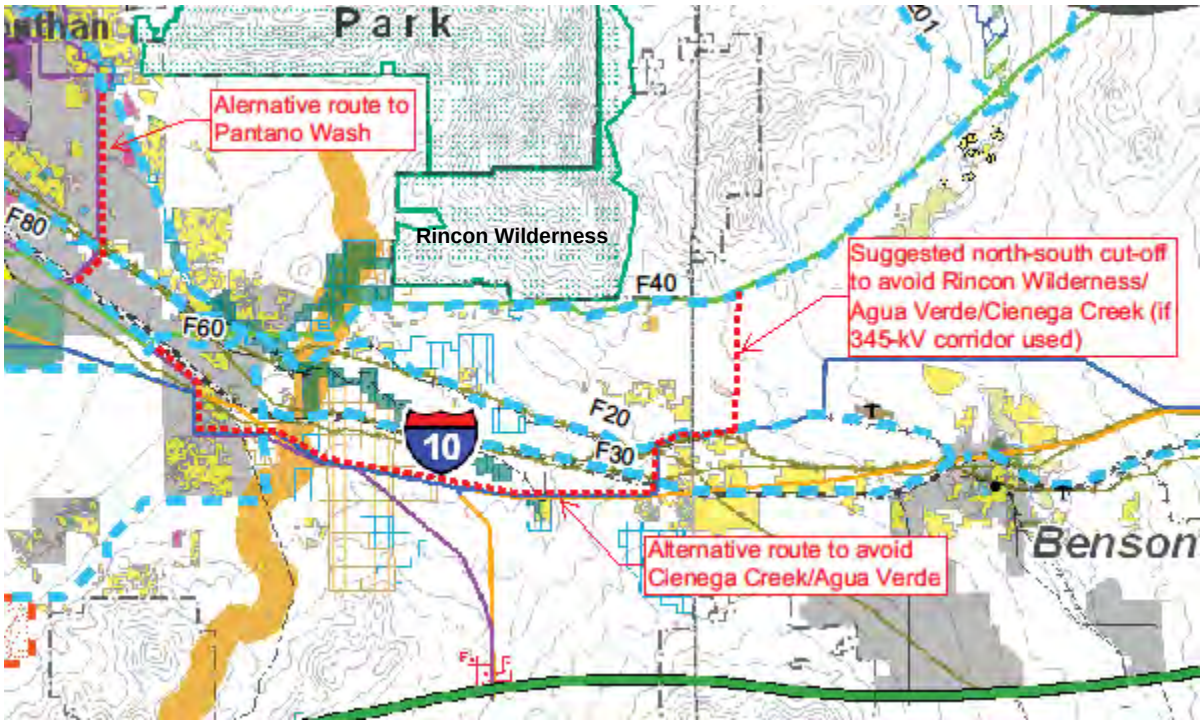

Figure 3. Alternative routes in the Vail area. Vail is located in the left half of the diagram approximately where the F60 label is. Colossal Cave Mountain Park, the Agua Verde drainage, Cienega Creek Natural Preserve, and Davidson Canyon are colored green (parkland designation) and are located within, east, and southeast of Vail. The multiple dashed light-blue lines are possible SunZia routes, and the dashed red lines are suggested alternatives.

Entering the Pantano Wash here entails passing through the middle of the Vail community and traversing the Cienega Creek Natural Preserve, which would raise strong objections. Another principal difficulty with a Pantano Wash route is that it is eventually flanked on both sides by relatively new subdivisions; in addition, many business and residential areas flank the Rillito River, which the Pantano joins, including the Tucson Mall. The overall impact on residential neighborhoods along this route would be much greater than along the Santa Cruz River. In addition, Pima County has spent many millions of dollars converting the flanks of the Rillito River into a parkway for walking, cycling, and horseback riding, which it has also done with the Santa Cruz River. Transmission towers may at times have to be sited within the wash or river.

The impact that the project would have on the Vail community and the Cienega Creek Natural Preserve could be eliminated by keeping the project south of I-10 until it reached Houghton Road west of Vail (Figure 3). This route would also avoid the southern boundary of the Rincon Wilderness, another sensitive area. From here the project could then follow TEP's 138-kV line northward to reach the Pantano Wash. The impact upon cultural features is minimized by this route. This alternative, however, does not mitigate the impact upon residential neighborhoods and businesses farther north along the Pantano Wash and Rillito River. For this reason, following the Santa Cruz River corridor seems to present less conflict, although it is much more difficult to reach.

Santa Cruz River Corridor

The SunZia Project attempts to reach the Santa Cruz River corridor via two principal routes that roughly parallel both the north and south sides of I-10 (Figure 4). Both potentially conflict with Davis-Monthan flight patterns. The route north of I-10 follows the Union Pacific Railroad corridor into Tucson, and the route on the south eventually intersections the Benson Highway corridor. Once the Benson Highway corridor is reached, two potential routes could be used to reach the Santa Cruz, one that closely parallels I-10 and a second (not actually proposed for this purpose) that follows a TEP 138-kV corridor along Drexel Road that SunZia would use as a possible route to Avra Valley.

Union Pacific Railroad/Aviation Highway Corridor

The route on the north side of I-10 (F70) follows the Union Pacific Railroad corridor from Vail into the city, passing along the south and west side of Davis-Monthan Air Force Base and then following the Aviation Highway into downtown Tucson. It is difficult to continue the route past the termination of the Aviation Highway at Broadway Boulevard just east of downtown Tucson, from which point it must follow the much narrower Union Pacific Railroad corridor. The route cannot reach the Santa Cruz River corridor without leaving the railroad corridor and passing directly over the top of a residential neighborhood (Figure 5).

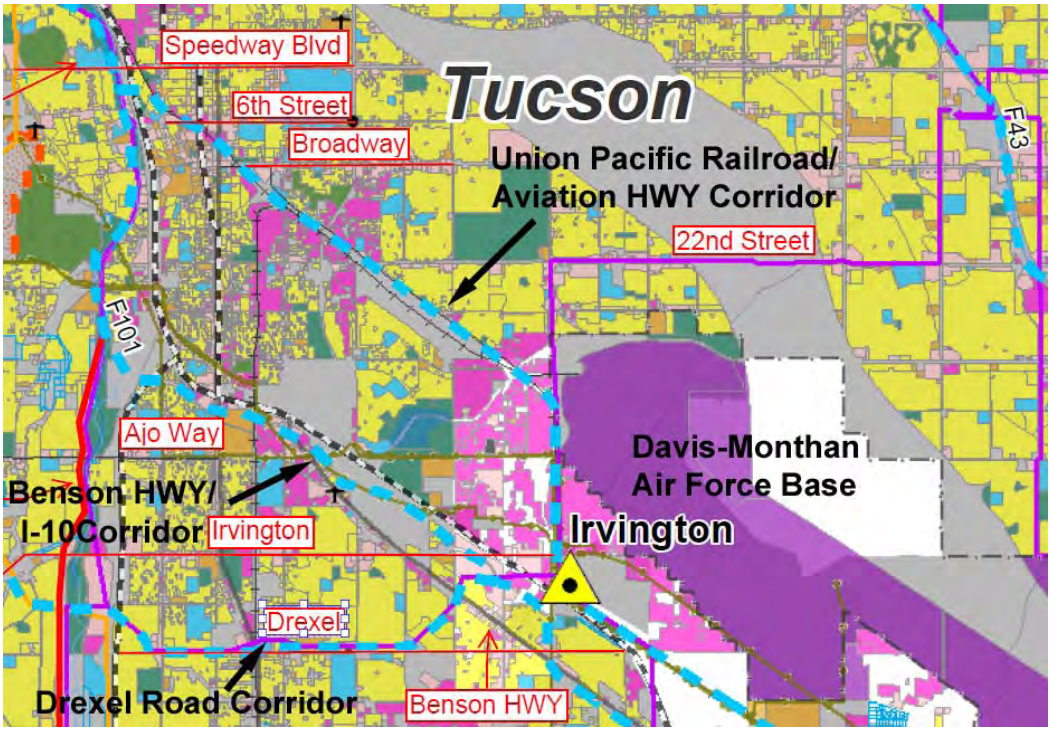

Figure 4. The Union Pacific Railroad/Aviation Highway corridor, Benson Highway/I-10 corridor, and Drexel Road corridor used to reach the Santa Cruz River, which hosts Tucson Electric Company's 138-kV corridor. The purple lines are part of Tucson Electric Power Company's 138-kV distribution grid.

Figure 5. Connection of SunZia Route F70 (red line) with the Santa Cruz River corridor at the route's terminus just north of downtown Tucson. The blue lines are Tucson Electric Power Company's 138-kV distribution lines. The route follows the Union Pacific Railroad here before cutting over to the river.

This route is thus not feasible for several reasons. First, the project borders Davis-Monthan Air Force Base directly on the south, and the Department of Defense would not permit SunZia transmission lines this close to D-M's runways. Second, the Aviation Highway and adjacent Union Pacific Railroad lack sufficient available right-of-way along them. And lastly, the route cannot reach the Santa Cruz River corridor without passing directly over residential homes. No right-of-way can be secured to complete the connection to the river corridor, which precludes this route as a possibility.

Benson Highway/I-10 Corridor Route

The principal route proposed south of I-10 proceeds west-northwest from the Vail substation, connecting with the Benson Highway corridor at the Valencia interchange and eventually intersecting the Santa Cruz River just south of the I-10/I-19 interchange (routes F80, F90; part of route F101) (Figures 4 and 6). Immediately west of the Vail substation it skirts a new subdivision on the south and follows major streets in places that border residential neighborhoods. After reaching the Valencia interchange it follows the Benson Highway a short distance before turning somewhat north to follow a small drainage adjacent to I-10 to the Santa Cruz River corridor.

This route is initially fairly open, and securing right-of-way appears more plausible, but once the route reaches Kino Parkway about 2.5 miles from the river, the drainage that the route follows becomes very narrow, and it does not seem wide enough to provide the needed right-of-way (Figure 7). The route eventually passes through businesses and a residential neighborhood before reaching the Santa Cruz River, another detrimental factor.

Figure 6. Route for SunZia Project (red line) at the western terminus of the Benson Highway/I-10 corridor, just south of the I-10/I-19 interchange, where it reaches the Santa Cruz River corridor. The blue line is a TEP 138-kV line. The route is following a concrete drainage ditch and passes through the grounds of the Veteran's Administration Hospital, a major detriment to this route.

Figure 7. Drainage ditch that the SunZia Project would follow near the junction of I-10 and I-19. The concrete ditch is ~80' wide.

This route, too, has serious problems that make it appear unfeasible: The route would potentially conflict with Davis-Monthan Air Force Base on the south, the impact upon businesses and neighborhoods near the I-10/I-19 interchange would be substantial, and the drainage used as a corridor becomes very narrow (only ~80' wide).

Drexel Road Route to the Santa Cruz River

Although SunZia proposed a Drexel Road route (F100, Figure 4) as an alternative to reach Avra Valley, the route crosses the Santa Cruz River and is a possibility to consider for reaching it. This route follows a triple-circuit TEP 138-kV line westward from near the Irvington substation and is within a designated utility corridor that passes through mostly residential neighborhoods. While the width of the corridor varies up to ~200', its eastern end is consistently ~100 feet wide (Figure 7), too narrow, it would seem, to accommodate the SunZia Project.

This corridor could only be used if the 138-kV lines were removed, but because these lines are the principal power source for southern Tucson, they would have to remain in service while the 500-kV SunZia lines were constructed, something that appears untenable. If the route could be used at all, it appears more plausible than following the Benson Highway corridor close to I-10. Although surrounding residential neighborhoods are used to the 138-kV line, they might object to a much larger set of transmission lines.

Figure 7. Drexel Road corridor for Tucson Electric Power Company 138-kV triple-circuit line (blue). A transmission tower is in the center of the photograph. The distance between the two inner fences that bound the corridor is 65'; the distance between the back walls of bordering homes is 100'.

Proposed Alternative Route for Reaching the Santa Cruz River

Because of the implausibility of SunZia's proposed routes for reaching the Santa Cruz River corridor by following I-10 or Drexel Road, it is important to look for alternatives. The cultural features encountered by trying to pass through the middle of the city and the difficulty of acquiring sufficiently wide right-of-way make it difficult to establish a viable route.

The best alternative that is physically workable and which greatly reduces social impact is to proceed due west from the Vail substation, following Tucson Electric Power Company's 138-kV line along the East Old Vail Connection Road until that line turns south approximately 2 miles south of Tucson International Airport. This alternative route would continue roughly west from this point until it encountered the Old Nogales Highway, which borders the east side of the San Xavier District of the Tohono O'odham Nation. The lines would then have to cross a corner of the San Xavier District, something that would have to be negotiated, if possible, with the Tohono O'odham Nation.

At the Old Nogales Highway, the line could be routed one of two ways. It could parallel TEP's 115-kV and 138-kV lines northwest across the District to reach the Santa Cruz River, passing on the east side of Martinez Hill, or it could proceed roughly west to the Santa Cruz River and then continue north on the west side of Martinez Hill. To the north the route would then follow TEP's 138-kV line through the city. The San Xavier Indian Hospital is on the east side of Martinez Hill, and placing the lines here may be more objectionable. Therefore an alternative westerly route is proposed, although it would create a new corridor, which may seem excessive.

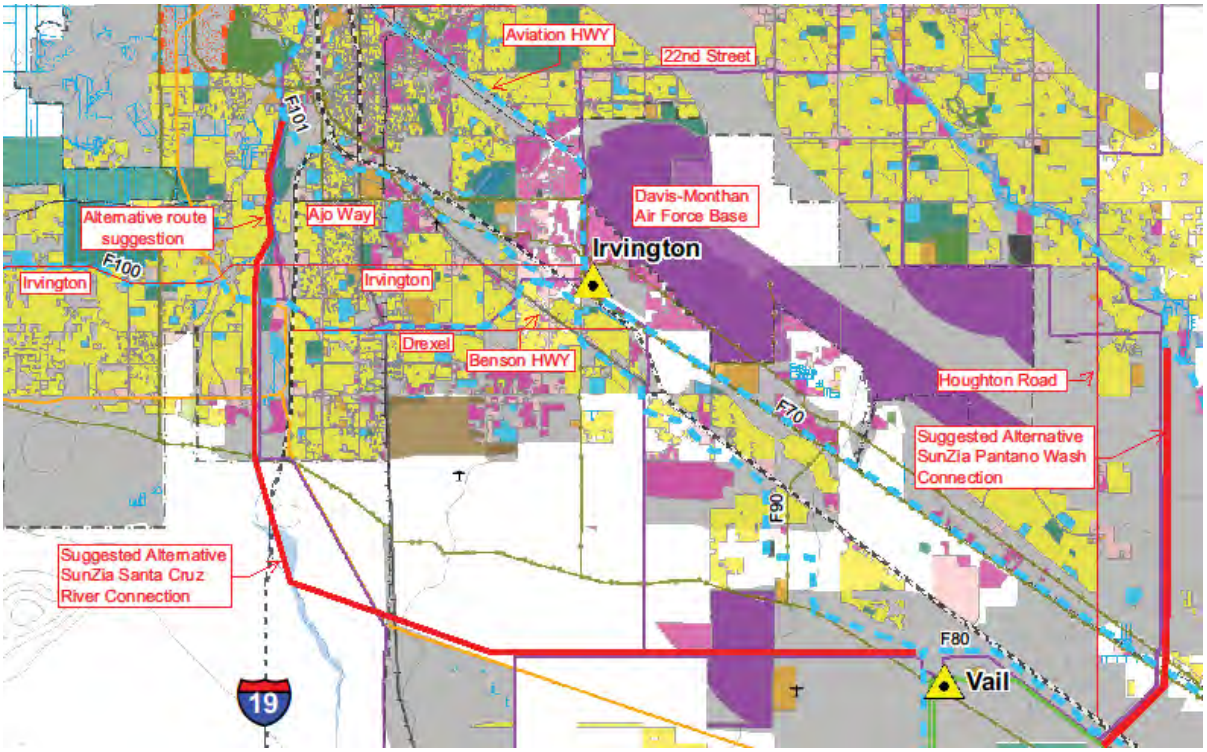

Figure 8. Proposed alternative Tucson SunZia routes are shown with heavy red lines. The new route proposed to reach the Santa Cruz River has adequate space for the SunZia Project and passes through or by minimal cultural features, in contrast to northerly routes associated with I-10. The alternative route to reach the Pantano Wash (alternative north Tucson route) shown to the right would avoid the Vail area and the Cienega Wash Natural Preserve.

While the Tohono O'odham Nation would very possibly not permit the crossing of the San Xavier District, this route is physically possible whereas SunZia's other routes are not, and it is a route to investigate. The route encounters three cultural features that may raise social objections, but the social impact would be orders of magnitude less than that encountered by following the Aviation Highway, the Benson Highway, or Drexel Road.

Just west of the Vail substation the route would pass between the Arizona State and Federal Prisons on South Wilmot Road (shown in purple in Figure 8). While there is more than adequate space between the prisons to route the lines, state and federal officials may object. Secondly, directly south of Tucson Airport the lines would border a low-density housing area on the north. While the lines would not pass through any residential neighborhoods, this close approach would presumably raise objections. It may be possible to allay these objections somewhat by moving the route north approximately 600 feet so that it follows the south border of a large, badly disturbed area (apparently an abandoned sand or gravel pit; Figure 9). The third cultural feature the route would encounter would be a strip of businesses along the Old Nogales Highway. It may be possible to follow a small drainage here to avoid passing directly over buildings or parking lots.

In addition, if the lines were routed on the east side of Martinez Hill, they would pass in front of the San Xavier Indian Hospital, which could be objectionable even though two lines currently pass in front of it. Martinez Hill may also hold a special significance to the Tohono O'odham.

While this alternative route to the Santa Cruz River will have some difficulties and may not be feasible because of Tohono O'odham objections, it is physically viable – it can accommodate SunZia Project lines and should be seriously investigated.

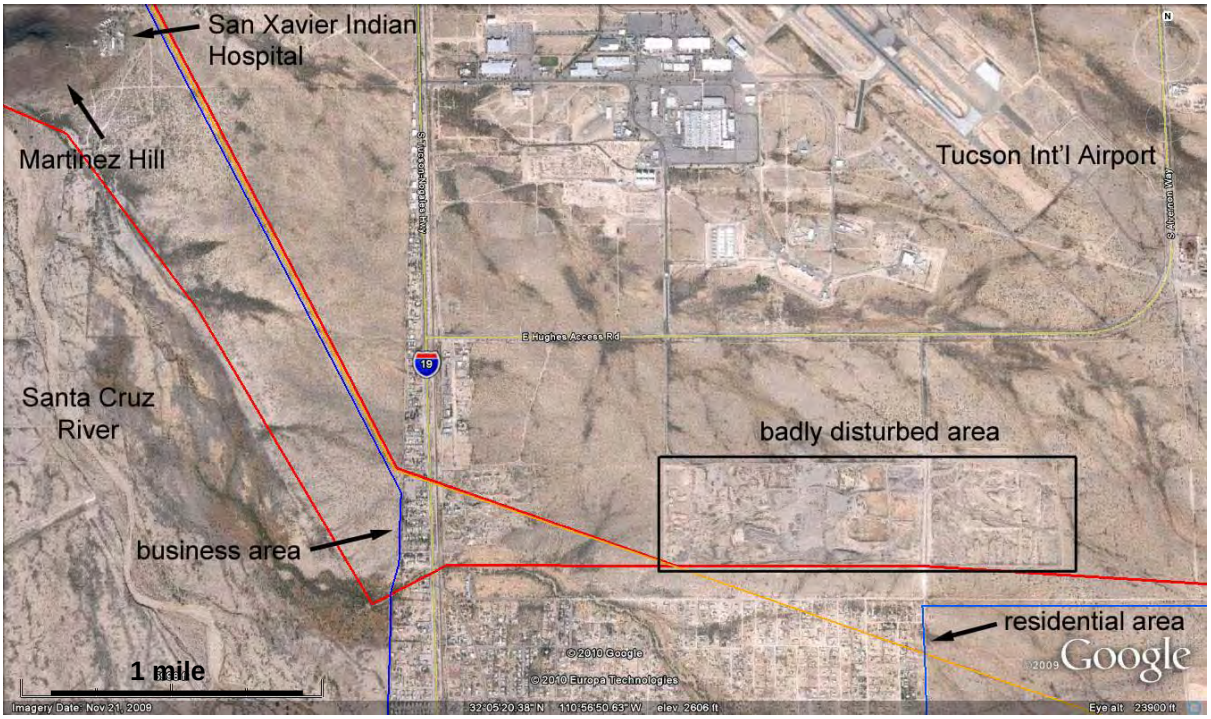

Figure 9. Red lines are possible alternative SunZia routes to reach the Santa Cruz River corridor. The blue lines are Tucson Electric Power Company 138-kV lines, and the orange line is a 115-kV line.

Problems With Using the Santa Cruz River Corridor

Once the SunZia Project reaches the Santa Cruz River corridor it faces two very serious obstacles – other than social objections – that would potentially block the project. First, the project would pass through the city of Tucson's Rio Nuevo Downtown Redevelopment Project, a $700 million venture aimed a revitalizing the core of the city (Figure 10). The SunZia lines could significantly detract from the project.

A possible way to mitigate this would be to double-circuit the lines (route them on a single set of towers) and employ compact-line technology to reduce their size (having both sets of lines on one set of towers significantly increases the height of the towers). Tucson Electric Power Company has said (Ed Beck, personal communication, May 2010) that if the SunZia Project could be routed through the Santa Cruz corridor that TEP would seriously consider removing its 138-kV line in the corridor, allowing SunZia's lines to replace it. This would significantly reduce the additional impact of the project. A second alternative would be to underground the lines for two to three miles, although this would be technically complex and very costly –10 times as much or more – which would significantly impact the economic viability of the project. Underground is something to consider only if no other alternatives for completing the project exist.

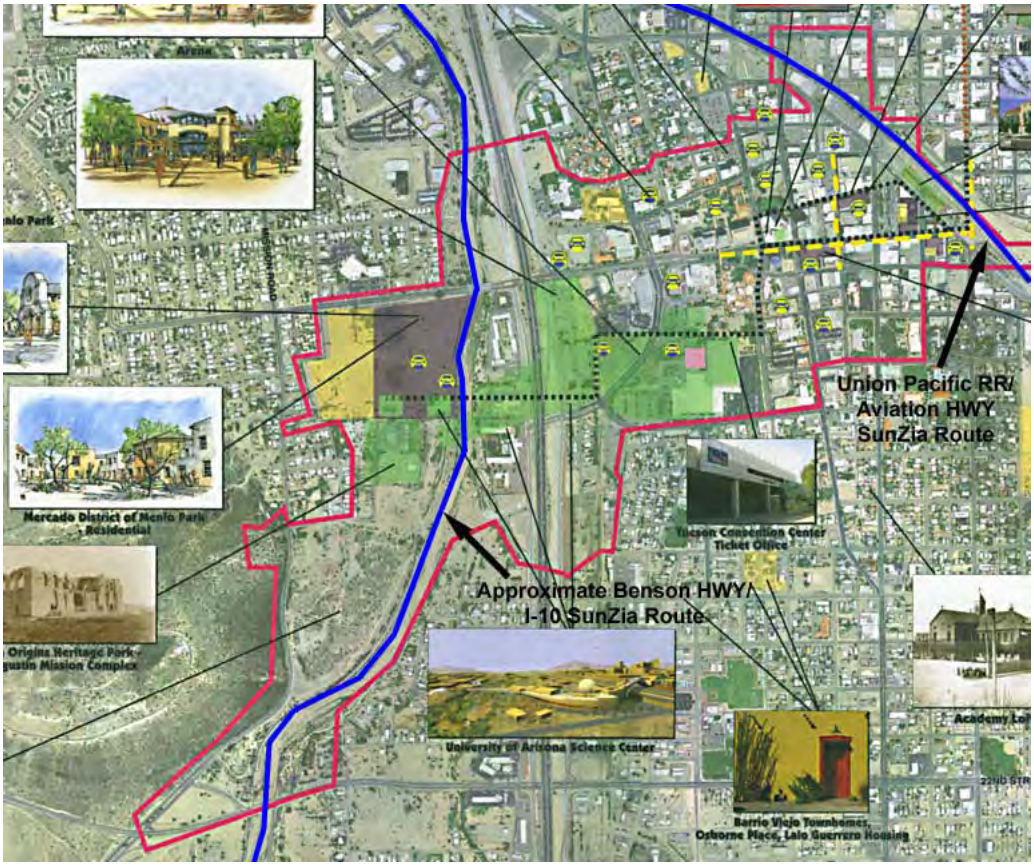

Figure 10. Map of Tucson's Rio Nuevo Downtown Redevelopment Project with SunZia's approximate routes shown in blue.

The second major obstacle is Pima County's Santa Cruz River Park (Figure 11), which encompasses the river and its banks for several miles through the city. Pima County has spent several million dollars on its Santa Cruz and Rillito River park projects, transforming the river corridors into areas for walking, cycling, and horseback riding. Using either of these corridors would require the consent of the county, which it would be reluctant to give. Tucson Electric Power Company does run a 138-kV power line through the length of the park, which if replaced by SunZia's lines would perhaps make the county more open to allowing the project to occupy the river corridor.

Conclusions

The possibility of routing the SunZia Project through Tucson depends greatly on being able to follow the Santa Cruz River corridor. This will be possible only with the consent of three very reluctant and perhaps uncompromising entities – the city of Tucson, Pima County, and the Tohono O'odham Nation. The objections of Tucson's citizenry could also be very great. Nevertheless, pursuing the alternative route proposed in this analysis with these parties is essential before giving up on a Tucson route for the project.

Figure 11. Left, map of Santa Cruz River Park showing potential SunZia routes. Below, photograph of walking/cycling/horseback riding path within the park along the river, showing poles for Tucson Electric Power Company's 138-kV line that follows the river. (Map and photo taken from Pima County's web site.)

APPENDIX I: MITIGATION TECHNOLOGIES – POLE DESIGN, DOUBLE-CIRCUITING, AND COMPACT LINE TECHNOLOGY

Introduction

The principal difficulties with routing the SunZia Project through Tucson are the right-of-way required and the strong social objections to transmission lines. In order to minimize these and to keep the project viable, it is essential to minimize the project's footprint as much as possible to conserve space and to limit the impact on businesses and residential neighborhoods. Four basic methods can be employed to achieve this: (1) pole or tower design, (2) double-circuiting of lines (placing both circuits on a single set of towers), (3) using compact line technology, and (4) undergrounding of lines. The following discusses the first three approaches. Undergrounding of lines is discussed separately in Appendix II.

Pole Design

SunZia has proposed four possible designs for tower or pole structure: (1) guyed-V, (2), self-supporting, (3) tubular-steel guyed-V, and (4) H-frame (for mitigation) (from *SunZia*, 2010). Illustrations of these support structures are shown in figure 3 for reference.

Figure 3. Examples of four possible tower structures proposed for the SunZia Southwest Transmission Project (from *SunZia*, 2010).

In addition, a single-pole tubular-steel structure (monopole) is possible and saves greater space horizontally. This type of pole (Figure 4) is being used by Tucson Electric Power Company for its new 40-mile 500-kV transmission line from the new Pinal Central substation near Eloy to the Tortolita substation just north of Tucson (*TEP*, 2008). This pole type is approximately 30 feet taller to maintain the required line separation between the lines carrying the three phases.

Southern California Edison is also considering a tubular-steel single pole for a segment of its 26.5-mile Antelope-Pardee 500-kV project in California. Both single-circuit and double-circuit poles for the project are shown in Figure 5. In addition to potentially using single-pole structures for part of this line, the project will also contain a 5.3-mile segment of double-circuit 500-kV line (a technology to be discussed in the next section) and potentially a 4.0-mile segment of underground line (*CPUC*, 2006).

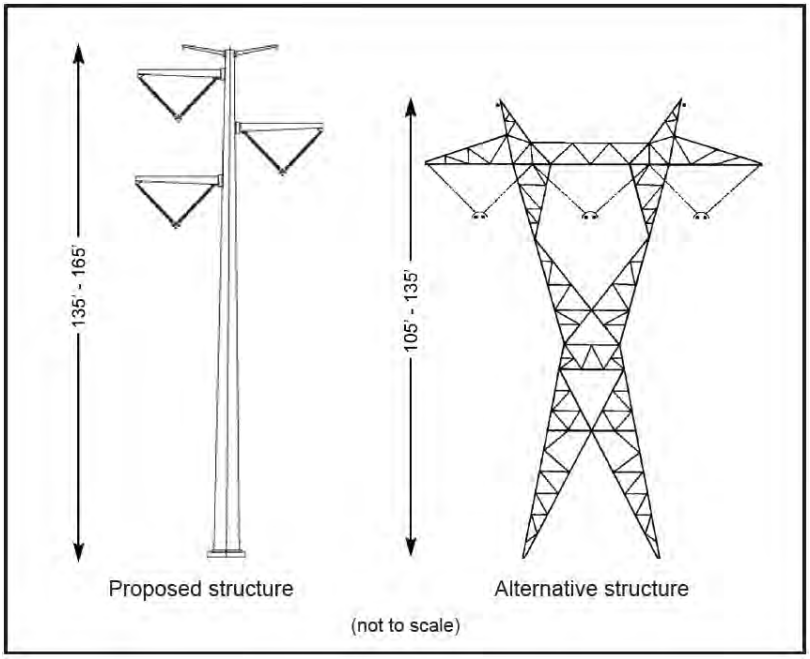

Figure 4. Proposed pole structure for Tucson Electric Power Company's 40-mile-long Pinal Central to Tortolita 500-kV transmission line (from *TEP*, 2008).

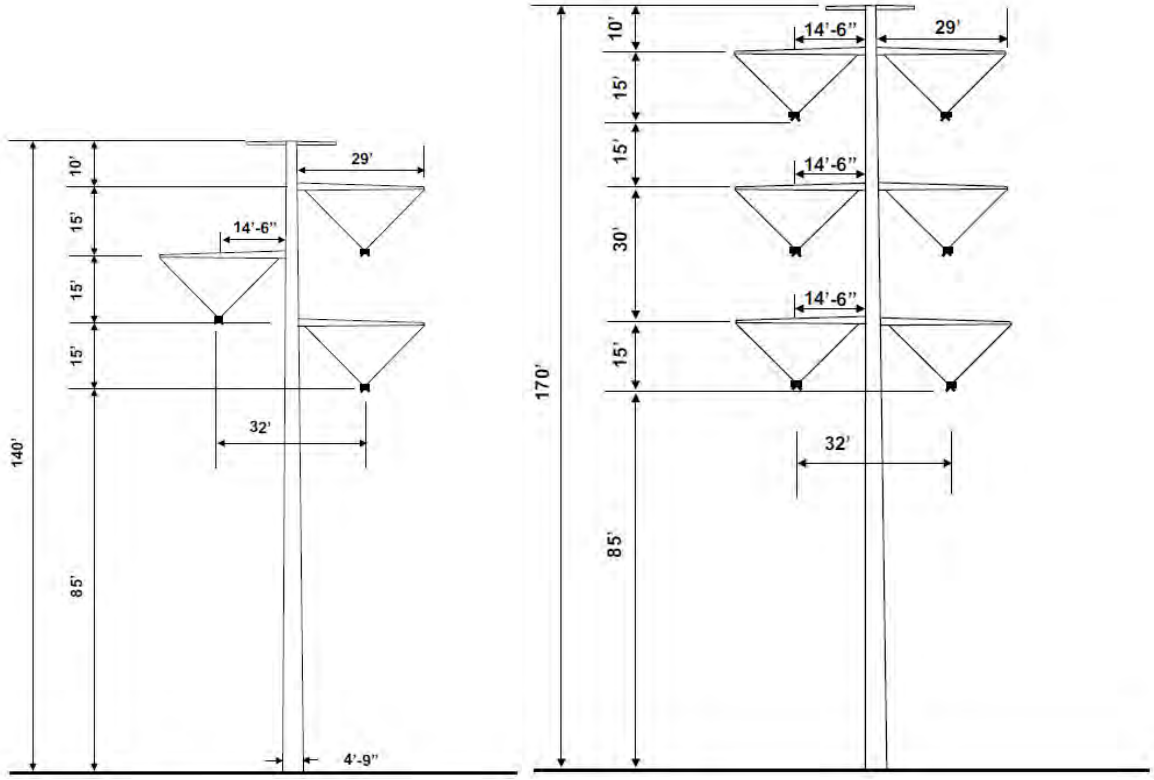

Figure 5. Single-circuit tubular-steel pole and double-circuit tubular-steel pole that will potentially be used for a segment of Southern California Edison's Antelope Pardee 500-kV transmission project (from *CPUC*, 2006).

Double-Circuit Transmission Lines

A double-circuit transmission line is composed of a single set of towers that carries two transmission circuits, and it is a primary way of reducing right-of-way width, something essential to consider if a Tucson route for SunZia the project is chosen. In this case, both 500-kV transmission lines would be strung from a single set of towers, which would carry six conductors (one bundle per phase). To maintain the required line separation to minimize mutual inductance between the lines, the towers for a double-circuit 500-kV transmission line must be approximately 30 feet higher that those for a single circuit line (see Figure 5). Examples of double-circuit transmission lines are shown in Figure 6.

Figure 6. Examples of double- or dual-circuit transmission lines. Left, high-voltage (possibly 400-kV) double-circuit line near Aust, Gloucester, England on a traditional lattice tower structure. Right, high-voltage double-circuit line on a single-pole structure in Virginia (from *JLARC*, 2006).

In the U.S., 500-kV double-circuit lines are uncommon. The two most prominent are segments of the Bonneville Power Administration's paths 15 and 66 in California (*Wikipedia*, 2010). Double-circuit 500-kV lines, however, are used to carry the 12,000 MW of AC power from the Three Gorges Dam on the Yangtze River in Hubei Province, China to cities in central China. These double-circuit transmission lines also employ compact transmission line technology (discussed in the next section) to further reduce space requirements and increase power carrying capacity. One disadvantage of double-circuit transmission lines is that they require taller towers, which increases their visual impact.

In Europe essentially all transmission lines are double-circuited because of limited right-of-away, and single-circuit lines are rarely used. Maximum extra-high voltages are either 380 kV (e.g., Germany) or 400 kV (e.g., United Kingdom). Figure 7 shows the transmission grid for the United Kingdom. This emphasizes that the use of double-circuit technology at extra high voltages is tested and trusted in other parts of the world

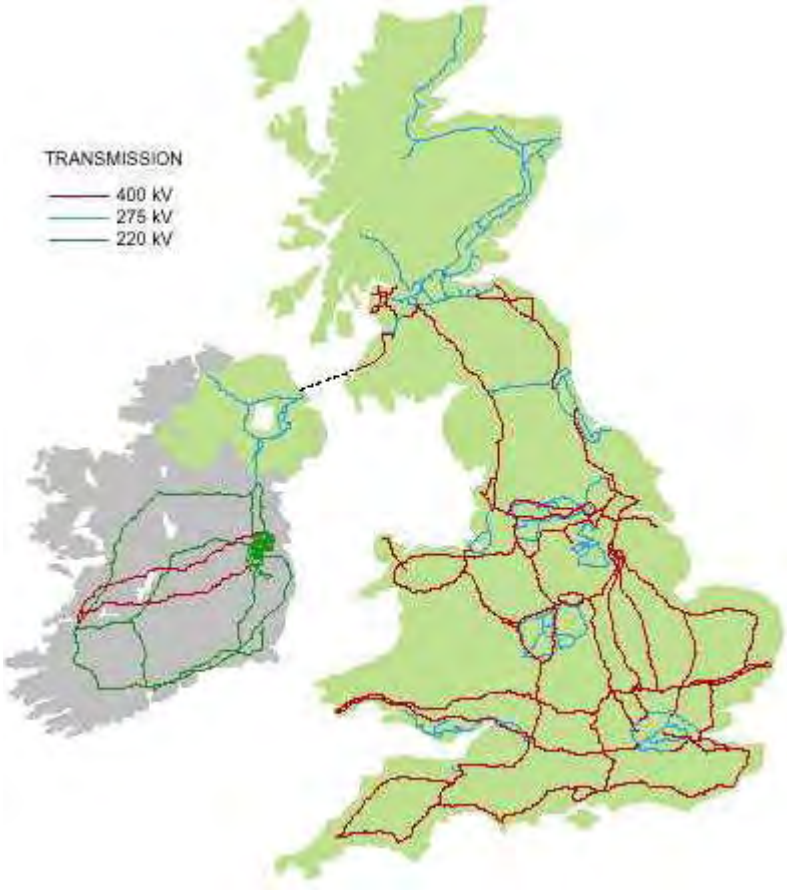

Figure 7. Electrical grid for the United Kingdom. All of the lines shown in this diagram are double-circuit lines, the standard in Europe. Image below is of a UK 400-kV double-circuit line. The tower is more robust because the line bends here.

Two of the most prominent 500-kV double-circuit transmission systems are those that surround Tokyo and Bangkok. The Tokyo grid is shown in Figure 8 (*Kitajima*, 2008). All of the above-ground transmission lines in this diagram (275-kV, 500-kV, 500-kV designed for 1000 kV) are double-circuit lines. The core of the city where all transmission lines are underground is approximately 80 km (50 miles) across. These underground lines include a 40-km double-circuit 500-kV line and more than 300 km (185 miles) of 275-kV lines. This again demonstrates that double-circuit technology is a tried technology to consider using in the U.S. when it is needed.

It is worth noting that two other current wind-energy projects in the United States will use 345-kV double-circuit transmission lines to deliver power from the generation area to markets. These include four projects of the Lower Colorado River Authority (LCRA) Transmission Services Corporation in west and central Texas (*LCRA*, 2009) and new projects by the Southwest Power Pool in Kansas (*Parkinson*, 2010; *SWPP*, 2010). Locally, TEP's proposed Sahuarita to Nogales 345-kV line is permitted as a double-circuited line.

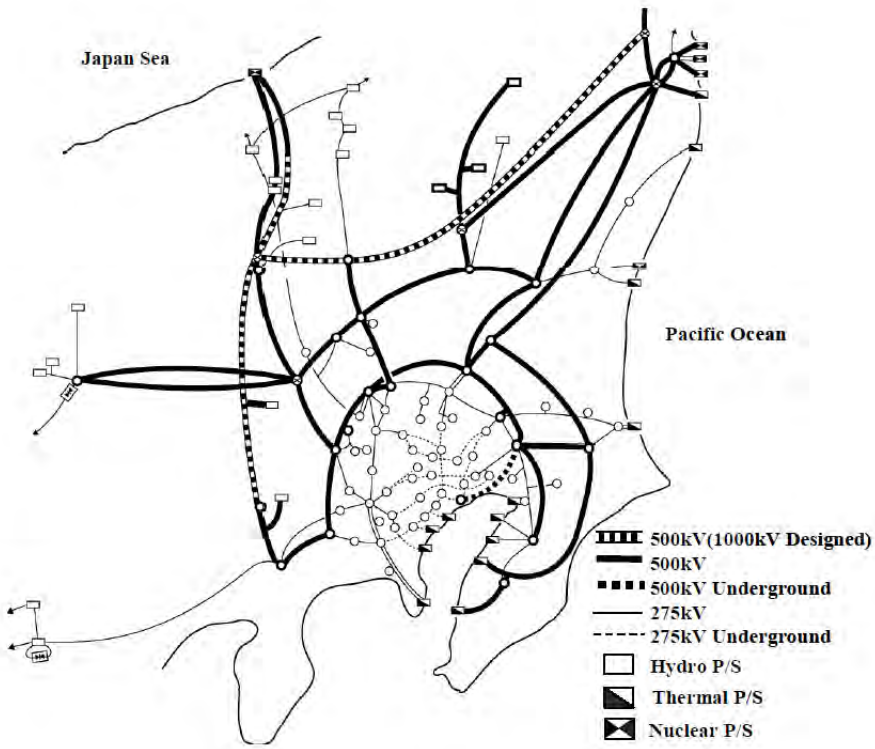

Figure 8. Bulk transmission system of the Tokyo Electrical Power Company (from *Kitajima*, 2008). The overall transmission system is composed of 500-kV double-circuit trunk lines (heavy black lines) that link to 275-kV double-circuit feeder lines (thin, black lines) that then connect with the underground 275-kV distribution system that feeds power to the city. For scale, the 500-kV underground line (itself a double-circuit line) is 40 km (~25 miles) long.

Compact Transmission Lines

Another way to reduce the space requirements of transmission lines, both in width and height, is the use of compact transmission line design. Such lines were initially built to meet congested space requirements in urban areas (*EPRI*, 2008). There are two basic approaches to this, one that increases the ampacity (current-carrying capacity) of standard aluminum-conductor steel-reinforced (ACSR) transmission lines by using alloys and different stranding designs for cables, and a second that reduces the separation between the three phases of an AC transmission line so that the associated cables can be drawn closer together. The first is a matter of material design (see *Gaudry et al*., 1998), while the second requires computer modeling of the interactions of electrical and magnetic fields between the three lines.

The second technique results in the greatest compaction, and the principal U.S. agencies that have provided the computer code for modeling line design are the Electrical Power Research Institute and the Bonneville Power Administration (*Chartier*, 1995). Compaction results in lower capital and maintenance costs, lower line losses, and reduced electrical and magnetic fields. Disadvantages include greater audible noise, radio interference, hardware corona, and aging of composite materials (*EPRI*, 2008).

Much of the research in this area was done in the 1970s and 1980s, and it is somewhat difficult to find current examples of its use in the U.S., although the technology is used. The principal

reference for designing these lines is published by the Electrical Power Research Institute (*EPRI*, 1978, 2008). One U.S. example of the technology's use is Puget Sound Power and Light Company's upgrade of lower-voltage lines to compact 230-kV lines because new right-of-way was difficult to acquire (*Chartier et al*., 1995).

In other worldwide examples, China installed its first 500-kV compact transmission line in 1999, 83 km in length, and has used the technology with its double-circuit transmission lines from the Three Gorges Dam in China to central China (*Wei-Gang*, 2003; *Zhou et al.*, 2009). China has extensively studied the performance of the initial compact single-circuit line, which reduced the conductor-to-ground distance to 10.0 m (32.8 ft) and the transmission corridor width to 17.9 m (58.7 ft), although the height of the tower is about the same as that for a standard line. Power-carrying capacity was also increased by 34%.

Figure 10. Examples of 500-kV compact transmission lines used in China (from *Chai et al.*, 2006). Left, single-circuit compact line; right, double-circuit compact line. (No scale was given for the photographs.)

For the two Chinese compact 500-kV lines shown in Figure 10 (*Chai, Liang, and Zeng*, 2006), the single-circuit line carries 1310 MW of power and has a right-of-way width of 16 m (52.5 ft), and the double-circuit line carries 2325 MW of power and has a right-of-way width of 31 m (102 ft).

In other prominent examples, the Brazilian North-South Interconnection, a single-circuit 500-kV compact transmission line 1020 km (634 miles) long, was energized at the beginning of 1999 (*Chai et al.*, 2006; *Fernandez et al*., 2008) and is essential to the integrity of the Brazilian electrical system. The first double-circuit compact 500-kV line was installed in Bangkok in 2000 (Figure 11; *Petchsanthad*, 2000), with the Bangkok 500-kV ring being completed in 2003 (*SAE*, accessed 2010). By using compact double-circuit 500-kV line technology, the Electrical Generating Authority of Thailand (EGAT) was able fit the upgraded 500-kV lines into the 131-ft-wide right-of-way of its 230-kV lines.

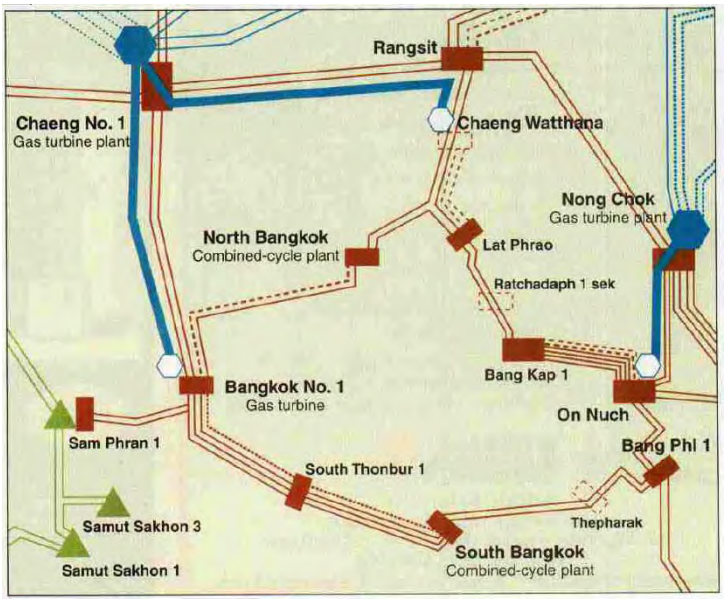

Figure 11. The Greater Bangkok transmission system, with the initial 500-kV compact double-circuit transmission lines show in blue. (From *Petchsanthad*, 2000)

Perhaps the compact line design that is most relevant for the SunZia Project is the 420-kV double-circuit compact line designed by the Pfisterer Corporation of Germany for the Dubai Electricity and Water Authority. This design uses a composite insulator technology to bring the lines closer together (*Fluri et al*., 2007). This project was completed in 2007 and is shown in Figure 12. Pfisterer began installing 400-kV double-circuit compact lines in 1997 and now has thirteen year's experience with this technology.

Figure 12. Pfisterer 420-kV double-circuit transmission line installed for the Dubai Electricity and Water Authority in 2007. Left photo, the line on the right replaces that on the left. Right photo, close-up of tubular steel tower with insulated cross arms using composite insulation technology. (From *Fluri et al*., 2007)

The reduction in the size of the poles and spacing of lines is significant and represents a major advance in siting high-voltage lines in narrow right-of-ways (Figure 13). The height of the new tower is 37.4 m (123 ft), and the width is12.4 m (41 ft). This compares with a height and width of a standard tubular-steel double-circuit pole structure of 170 ft and 58 ft (see Figure 5).

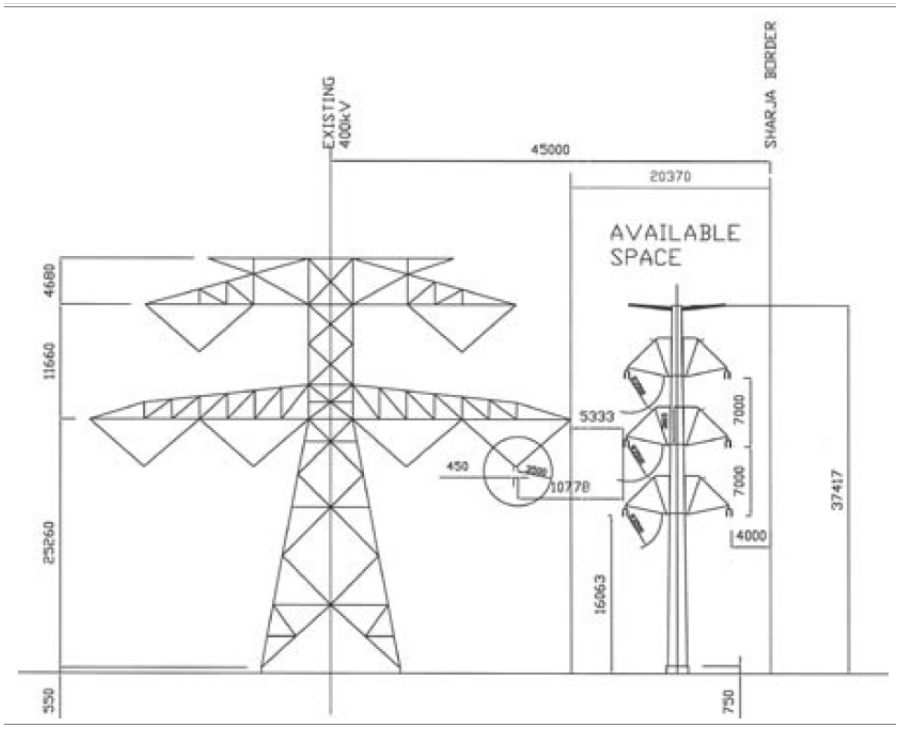

Figure 13. Comparison of dimensions of old 400-kV double-circuit Dubai line with the new compact 420-kV line designed and installed by Pfisterer. The new design is 123 ft high and 41 feet wide. This compares with old design measurements of 136 ft high and 162 ft wide (from *Fluri, et al*., 2006).

Interest in compact-line technology has continued in Europe because, again, of the need to increase transmission capacity without being able to acquire additional right-of-way. Examples from the literature include Belgium (*Couneson et al*., 1998), France (*Gaudry et al*., 1998), Greece (*Ilippopoulos et al*., undated), Italy (*Villa et al*., 2002), Spain (*Larrruskain et al*., 2006), Sweden (Wikström and Öhlen, 2007), and Switzerland (*Ilippopoulos et al*., undated; *Ammann*, 1999; *Burkhardt*, 2003). Examples from Greece and Switzerland are shown in Figures 14 and 15, and an example from Sweden is shown in Figure 16.

In the Greek 400-kV compact design, the new tower dimensions are 28 ft wide by 124 feet high vs. 63 ft and 149 ft for the traditional design. For the Swiss design, the new dimensions are 28 ft wide by 183 ft high vs. 63 ft and 210 ft for the traditional design. The Swiss design carries an additional single-circuit 132-kV line at the top, which increases the height by 10 ft, and the tower is also taller to keep the electromagnetic field strength at ground level the same as that of the 125-kV line it replaced. There Pfisterer Corporation of Germany again provided the insulator technology for the Swiss line.

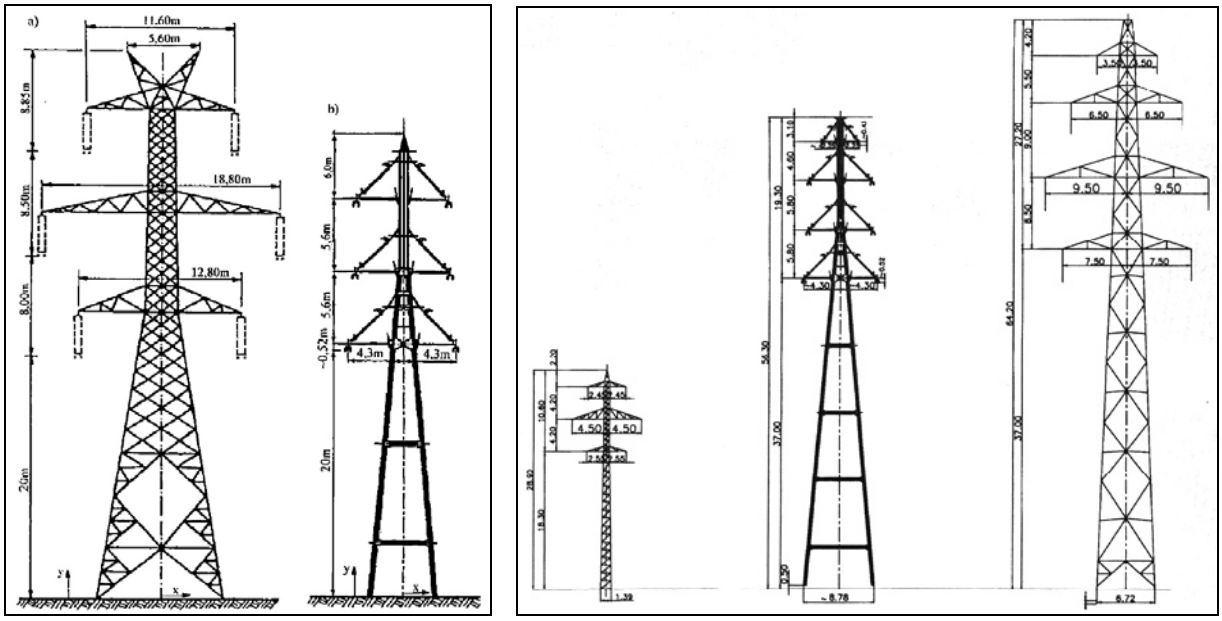

Figure 14. Left figure, example of tower for 400-kV double-circuit compact transmission line from Greece. The normal tower design is on the left, and the compact design is on the right (from *Ilippopoulos*, undated). Right figure, center is the Swiss 400-kV double-circuit compact transmission line (with a single-circuit 132-kV line at the top). To the left is the old 125-kV double-circuit transmission tower that was replaced, and to the right is a standard tower for 400-kV double-circuit line (with 132-kV line at the top) (from *Burkhardt et al*., 2003).

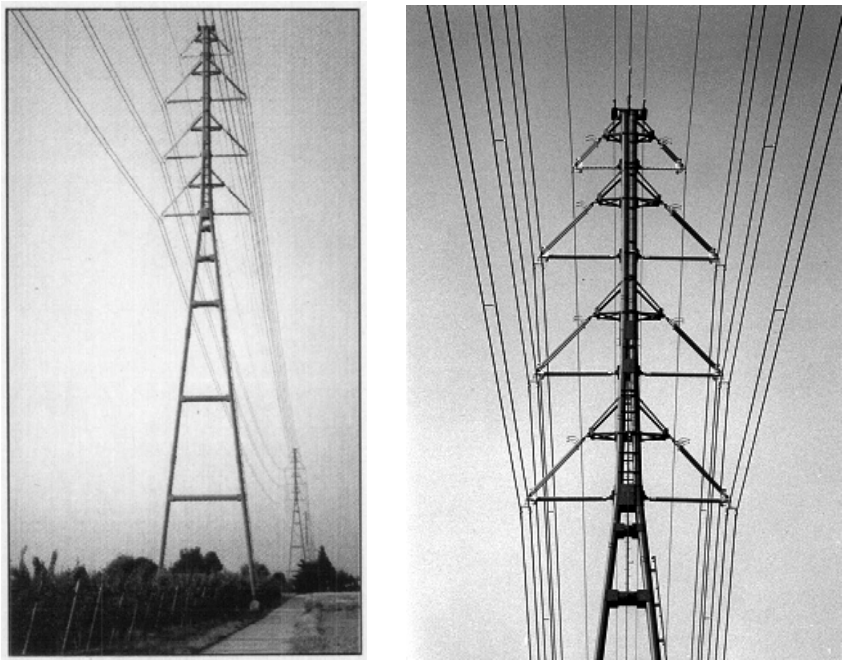

Figure 15. Photographs of the Swiss 400-kV double-circuit compact transmission line (left from *Ammann*, 1999; right from *Burkhardt et al*., 2003). The tower is higher than the Greek example because of the additional single-circuit 132-kV line at the top, and because it was designed to keep the electromagnetic field (EMF) strength at ground level the same as that of the 125-kV line it replaced.

Figure 16. Compact single-circuit 400-kV transmission line design from Sweden. Left, photo of line in use; right, schematic comparison to standard single-circuit 400-kV transmission line. The compact design reduced pole height and width by more than 50%, and the line produces 50% less EMF radiation. Reliability is also increased. Dimensions are not given. (From *Wikstroöm and Ohlen*, 2007)

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APPENDIX II: MITIGATION STRATEGIES – UNDERGROUNDING OF TRANSMISSION LINES

Introduction

Undergrounding or burial of transmission lines has become a nearly universal public request when new projects are proposed, and most lines would be at least partly undergrounded if it were not for the greatly increased cost – up to 10 times or more per mile – and technical complexity of doing so. Although U.S. utilities have extensively undergrounded power lines with voltages less than 230 kV and seem comfortable with this, undergrounding lines that have voltages of 230 kV and higher (EHV lines) is still unusual. As voltage increases, the expense of undergrounding lines increases geometrically, and the added technical complexity makes utilities and transmission companies uneasy. Thus as voltage increases, transmission lines become ever more challenging economically and physically to underground.

Even so, when new right-of-way is difficult or impossible to acquire, social objections are extreme, and the project is truly needed, burying extra-high-voltage AC lines up to 500 kV for short to medium distances is feasible and is sometimes the only solution. For long-distance undergrounding, DC lines must be used because the charging current in AC lines increasingly consumes transmission capacity with distance, limiting their usable length (*Rosenquist*, 2009). Undergrounding of EHV lines is more extensively done in Europe and Asia.

Precedents for Undergrounding 500-kV Lines

The first 500-kV cable installation in the world was in the Grand Coulee Dam in the mid-70s and was used to connect transformers to transmission busses (*Baptist and Nitta*, 1969). Twenty kilometers (12.5 miles) of 525-kV self-contained oil-filled (SCOF) cable manufactured by Sumitomo Electric of Japan were installed in tunnels in the dam and connected to six generating units. The lines were cooled with pumps that circulated the oil within the surrounding pipe (*Wikipedia*, 2010). Because of the age of the cable (more than 30 years), the Bureau of Reclamation plans to replace them with overhead lines in the near future (*Bureau of Reclamation*, 2009). In addition, the Bureau of Reclamation operates two 500-kV underground AC circuits at the Grand Coulee Dam that are about 6,000 ft long (*Bureau of Reclamation*, 2002).

The first 500-kV AC land cable installation was for the Honshu-Shikoku Interconnecting Line in Japan in 1989 (*Ohki*, 1989; *Minemura and Maekawa*, 1990). The cable was again manufactured by Sumitomo Electric, and the cable type was insulated oil-filled polypropylene laminated paper (PPLP, a form of SCFF cable). Twenty-two kilometers (13.7 miles) of cable was installed, 14 km (8.7 miles) underground on land (direct burial) and 8 km (5 miles) in the undercarriage of bridges (ten bridges total), sandwiched between the overlying roadway and underlying intercity railway (Figure 1). The cable delivers 1,200 MW of power, and no forced cooling is required because of the cable's construction. This is the same type of cable used in Singapore's 65-km (40-mile) underground 400-kV transmission system, which was installed about 10 years later (*Tsuruga et al*., 1999; see later discussion). Sumitomo Electric also supplied much of that cable (*Sumitomo Electric*, 2000). This cable type apparently is giving way to XLPE cable and is likely to be discontinued (*CCI*, 2010a).

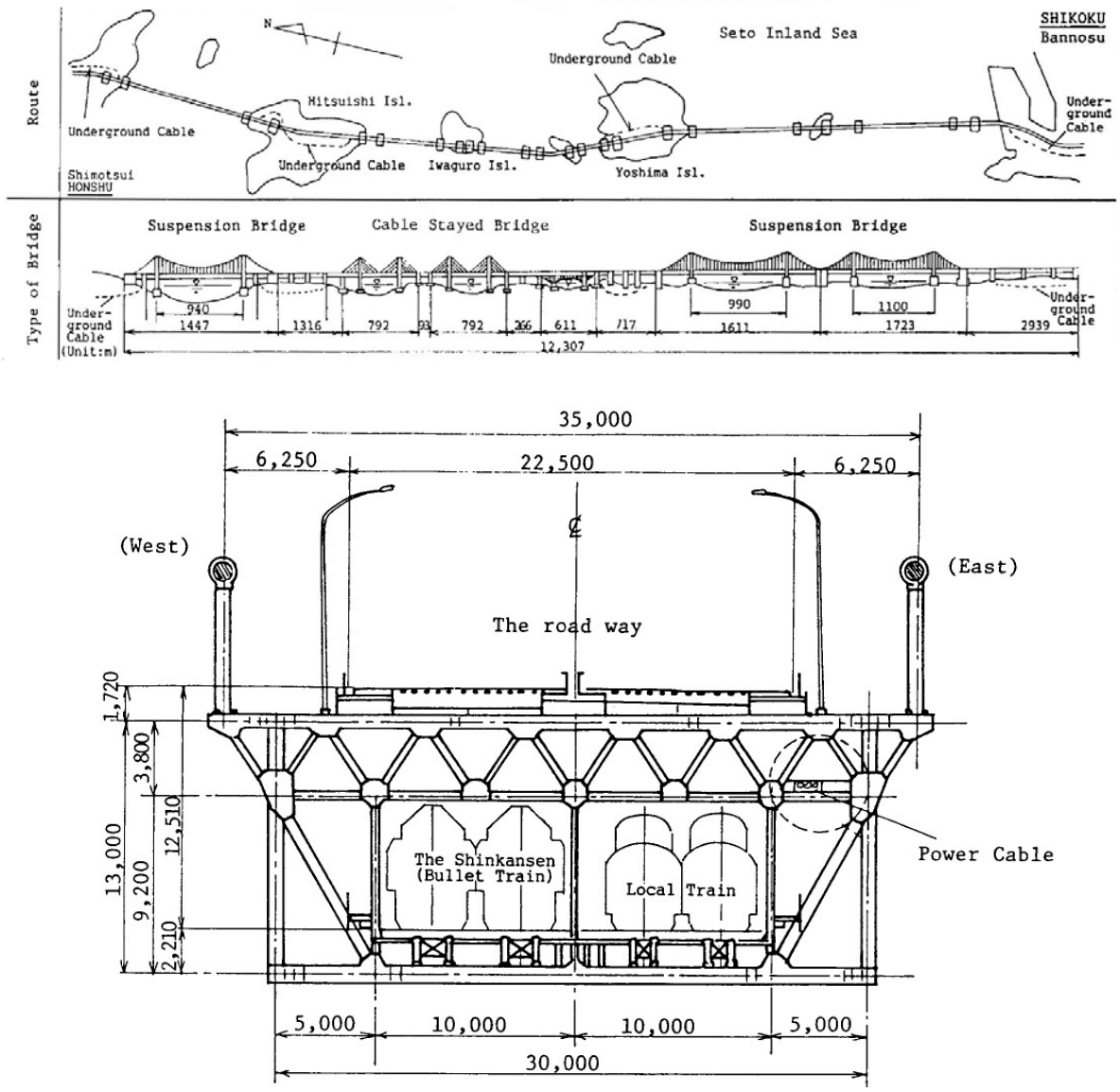

Figure 1. Top, map of islands and bridges that the Honshu-Shikoku Interconnecting 500-kV AC Line crosses. Bottom, cross section of one of the bridges showing the location of the power cable (from *Ohki*, 1989).

The two premier examples of more contemporary undergrounded 500-kV lines are in Tokyo (*George*, 2001; *CCI*, 2010b) and Shanghai (*Dubois*, 2007; *CCI*, 2010a), with a short distance in Russia. In Tokyo, two 40-km (25-mile) lengths were placed in a tunnel running into the heart of Toyko in 2000 (Figure 8, double-circuit line discussion, Appendix I), and two 17-km (10-mile) lengths are currently being installed beneath Shanghai (*CCI* ,2010b). Both of these were or are being installed in tunnels (Figure 2). Installation in tunnels helps to dissipate the heat generated by the lines, a major concern for underground EHV lines.

Figure 2. Left, 500-kV cables installed in tunnel in Tokyo. Right, installing 500-kV cable in tunnel in Shanghai (both from *CCI*, 2010b).

500-kV Underground Transmission Lines in the U.S. and Canada

The highest voltage for current underground projects in the United States is 345 kV (summarized in the next section), although underground 500-kV projects have been studied or proposed, the most extensive being for the Heartland Transmission Project in Edmonton, Alberta, Canada (*CCI*, 2010a, b). The Alberta Electric System Operator (AESO) is planning to construct a 65-km 500-kV double-circuit loop around the city of Edmonton, and stakeholders for the utility have requested that 10–20 km (6.2–12.4 miles) of the project be undergrounded. The proposed 500-kV system is composed of two transmission lines, each which would carry up to 1500 MW of power, an identical analog to the SunZia Project. The studies for undergrounding these lines are available at http://www.aeso.ca/transmission/20001.html. There is no more thorough or comprehensive reference on undergrounding 500-kV lines than this study. A map of the proposed project is shown in Figure 3, and a schematic of the burial scheme is shown in Figure 4.

Figure 3. Proposed underground double-circuit 500-kV transmission line for Edmonton, Alberta, Canada. (from *Altalink/Epcor*, 2010).

In addition, two other U.S. projects have considered undergrounding ~4-mile segments of single-circuit 500-kV projects. For the initial route proposed for its Sunrise Powerlink Project, San Diego Gas and Light was voluntarily going to underground two ~4-mile segments in critically sensitive areas (*SDGE*, ~2007). In addition, Southern California Edison is retaining the option to underground a 4-mile

segment of its 500-kV Antelope-Pardee line at the request of the U.S. Forest service (*Aspen Environmental Group*, 2006).

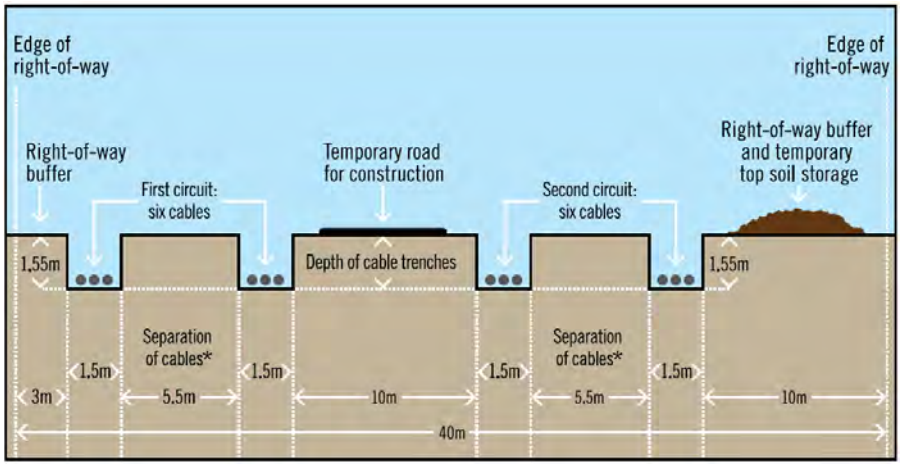

Figure 4. Burial scheme for both circuits of the 500-kV Heartland Transmission Project (from *Altalink/Epcor*, 2010). Note that the width of right-of-way required for burial is 40 m (131 feet), a major consideration. Placing the lines in ducts or a tunnel would reduce the width required. Note also that each overhead circuit is divided between two underground sets of cables.

U.S. Examples of Undergrounded 345-kV Lines

In the U.S., no 500-kV lines have been undergrounded, although several 345-kV lines have been. Table 1 summarizes these.

Table 1. U.S. 345-kV Underground Cable Projects.

City/State	Project	Cable Type	Circuits x Miles	Mode	Year
Boston	NSTAR	HPFF	2 x 17 1 x 13	conduit	2007
Chicago	Crawford-West Loop	XLPE	2 x 10	conduit and tunnel	2008
Chicago	General	XLPE	2 x 5	conduit	2008
Connecticut	Bethel-Norwalk	XLPE	1 x 24	direct buried/ducts	2008
Connecticut	Middleton-Norwalk	XLPE	1 x 2.1	direct buried/ducts	2006
Detroit	Bismark-Troy	XLPE	1 x 11	ducts	2010
Detroit	Goodison	XLPE	1 x 8.1	unknown	2009
Houston	Power plant connect	XLPE	1 x 0.9	ducts	2004
Minnesota	CapX2020	XLPE/ HPFF	2 x 2	PVC conduit/cable pipe	being studied
New York	Yonkers-Manhattan	FF	1 x 9.3	ducts	2008-10
New York	Neptune/Long Island	XLPE	1 x 2.5	unknown	2007
New York	Newbridge Road	XLPE	1 x 13	unknown	being studied
Pittsburgh	Brady Project	HPFF?	1 x 6.4 1 x 2.1	conduit?	2012?

The two most notable projects are Connecticut Light and Power's Bethel–Norwalk line, which is 24 miles long, and NSTAR's Transmission Reliability Project into downtown Boston, which is composed of two 17-mile-long lines and one 13-mile-long line. NSTAR used an HPFF system (high-pressure fluid-filled), and each line was placed in an 8"-diameter conduit, which was filled with dielectric oil to insulate the lines and dissipate heat. This design allowed all three circuits to be placed in the same 4-ft-wide trench. HPFF cable technology was chosen over XLPE for this very reason – it allowed a much closer spacing of the lines, significantly reducing the required width of the trench. Figure 5 illustrates installation of the cable (after conduit has been laid).

Figure 5. Installation of the three cables of a single circuit in NSTAR's 345-kV Boston underground transmission project. Underground conduit has already been installed (from http://www.transmissionproject.net/PhotoGallery.asp).

Worldwide Underground Extra-High-Voltage Cable Installations

The undergrounding of EHV lines is more prevalent in Europe and parts of Asia because these areas are more densely settled and it is difficult if not impossible to place the lines above ground in certain areas. Tokyo is the premier example of this. Table 2 (from *Europacable*, 2009) lists major 400-kV underground projects in Europe. Note that the majority of these lines are double-circuit lines. Table 3 shows high-voltage and extra-high voltage underground projects worldwide as of 2009 (the list is incomplete).

Table 2. Examples of major 400-kV underground projects in Europe (from *DelBrenna*, 2009).

Location	Project	Circuits x Length (km)	Cables per Phase	Time Period
Copenhagen	Elimination of overhead lines in urban area	1 x 22,1 x 12	1	1996 1999
Berlin	Connect West/East system	2 x 6;2 x 6	1	1998 2000
Vale of York	Area of outstanding beauty	4 x 6	2	2000/1
Madrid	Barajas Airport Expansion	2 x 13	1	2002/3
Jutland	Area of outstanding beauty, waterway and semi urban areas	2 x 14	1	2002/3
London	London Ring	1 x 20	1	2002/5
Rotterdam	Randstad waterway crossings	2 x 2.1	1	2004/5
Vienna	Provide power to centre of city	2 x 5.5	1	2004/5
Milan	Section of Turbigo-Rho line	2 x 8.5	2	2005/6
Switzerland/ Italy	Mendrisio – Cagno	1 x 8	1	2007/8

Some of the more notable projects are the London ring, which, when completed, will include 40 km (25 miles) of underground 400-kV cable with an additional 10.7 km (6.6 miles) planned for the future (Figures 6 and 7; *National Grid*, ~2008). Copenhagen direct-buried its two 400-kV trunk lines in the late 1990s (*Christensen and Roes*, 2001), and Madrid undergrounded its 13-km (8-mile) double-circuit 400-kV lines around the Barajas Airport in 2005 (*Granadino*, 2005). One notable underground 400-kV system that is missing from Table 3 is that of Singapore (Figure 8; *Chang et al*., 2001), which has a total underground 400-kV cable length of ~65 km (40 miles). This system used PPLP-insulated oil-filled cables laid in concrete-reinforced trenches (*Tsuruga et al*., 1999) rather than XLPE cables, which were just being developed at this time for extra-high voltages.

Figure 6. London cable tunnel for 400-kV line. The tunnel is built large enough to accommodate a second 400-kV line in the future. (From *National Grid*, ~2008.)

Figure 7. Map of London cable tunnels (from *National Grid*, ~2008). Total length of tunnels currently under construction is ~40 km (25 miles), with another 10.7 km (6.6 miles) planned.

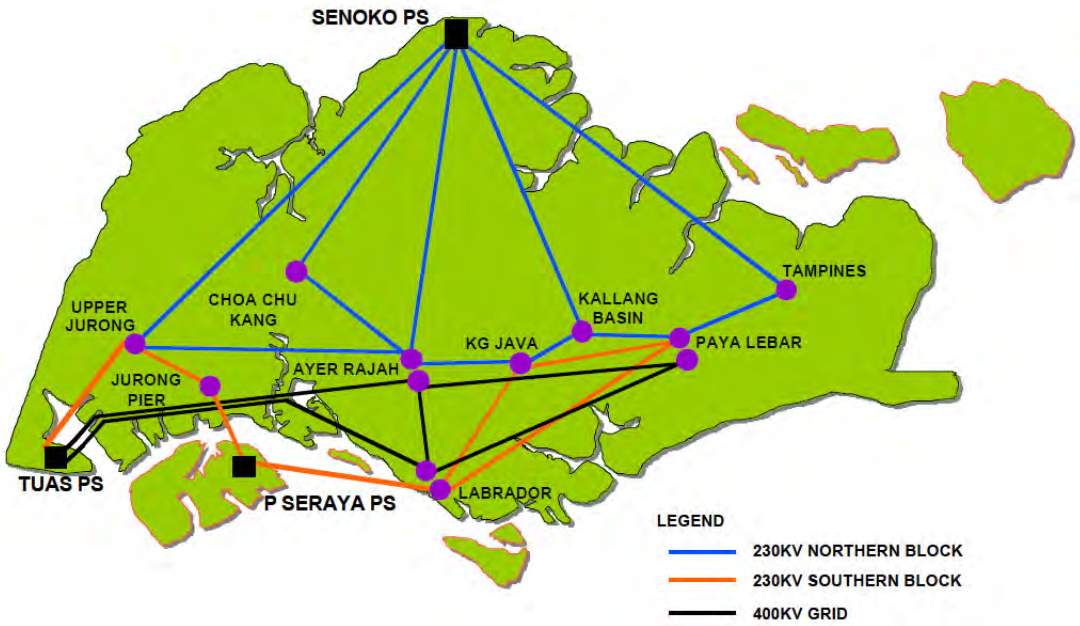

Figure 8. Singapore 400/230 kV underground transmission system (from *Chang et al*., 2001). Total length of underground 400-kV cable is ~65 km (40 miles).

Types of Underground Cables

There are four basic types of underground cables that are current used, and the following briefly describes these. These are summarized in many publications, including the Wilderness Society's initial report on the SunZia Project (*The Wilderness Society*, 2009), but a summary is included here for easy reference. Each has its advantages and disadvantages, especially with regard to undergrounding techniques. Superconducting technology exists as well but is not discussed here because it is not sufficiently developed to use (*CCI*, 2010b). Most of the following discussion is taken from *PSC Wisconsin* (2006).

HPFF – *High-pressure fluid filled*. The three cables of a single AC circuit are placed in conduit, and then the conduit is filled with dielectric oil to both insulate the lines and dissipate heat. This type of installation can require pressure stations along the route, and pumps may need to be used to circulate the oil to dissipate heat. In the past, this type of installation has been the most commonly used in the U.S. and is the most trusted by U.S. utilities. Because all three cables can fit closely together in a single conduit, this greatly reduces the width of trench required for the cables. In the Boston NSTAR 345-kV example cited earlier, a single 8" conduit can contain all three cables for a line, and several circuits can be placed together in a 4-foot wide trench. One drawback with this cable time is that the conduit can leak oil into the environment if damaged.

HPGF or GIL – *High-pressure gas-filled or gas insulated*. This installation type is very similar to HPFF except that pressurized nitrogen insulates the cables rather than dielectric fluid. Nitrogen is less effective as an insulator and coolant than dielectric fluids (usually oil), however.

SCFF – *Self-contained fluid filled*. In this type of cable, the dielectric insulating oil is incorporated into the interior of the cable itself, and conduit is not needed. All three cables are independent and are run in separate ducts or buried separately. As with HPFF cable, if damaged,

the insulating oil can contaminate the environment. The lines are insulated with kraft paper and are protected by an aluminum sheath and plastic jacket. A variation of this is the PPLP, or polypropylene laminated-paper cable. In this case, the insulating jacket is a sheet of polypropylene placed between sheets of kraft paper. This cable type was used for Singapore's 400-kV underground transmission system.

XLPE – *Crosslinked polyethylene*. Often referred to as "solid dielectric," this cable type is fast becoming the standard for underground transmission lines, replacing HPFF and SCFF. It contains no fluid or gas for insulation, making it easier to use and maintain. Should it fail, it thus has less environmental repercussions than HPFF and SCFF cable. Preventing contamination of the polyethylene insulation is critical to prevent electrical discharges and breakdown of the line from electrical stress. The insulation is also about twice the thickness of that for oil-insulated cables. A circuit using XLPE cable has three cables, one for each phase, which are buried separately or inserted into individual ducts.

Installation Types

There are five basic modes of burying cable: (1) direct burial (XLPE, SCFF), (2) duct bank (XLPE, SCFF), (3) vaults or troughs (XLPE, SCFF), (4) conduit (HPFF, HPGF), and (5) tunnel (XLPE, SCFF).

Direct Burial

Direct burial of lines requires the greatest width of ground and appears most suited to open country, agricultural land in particular. Once buried in this setting, the land above the cables can be reused for planting, and any apparent scarring of the land from trenching disappears. If directly buried, a single 500-kV line would require a strip of land approximately 80 feet wide to be cleared of vegetation (*Aspen Environmental Group*, 2006). With an additional line, this width of ground can be up to 130 feet wide (*CCI*, 2010b). With time, and depending on setting, much of the ground disturbance will heal.

When overhead lines are undergrounded, it at times requires more cables to carry the equivalent amount of power to distribute the heat generated by the lines (Figure 9), broadening the width of area required for burial. An example of a trench used for burying a 400-kV line is shown in Figure 10. One difficulty with this method in an urban setting is that a trench must be opened that is as long as the cable available from a single reel, which can be up to 700 m (2300 feet) long (*CCI*, 2010a). Using ducts eliminates this need, although doing so is more time consuming and expensive.

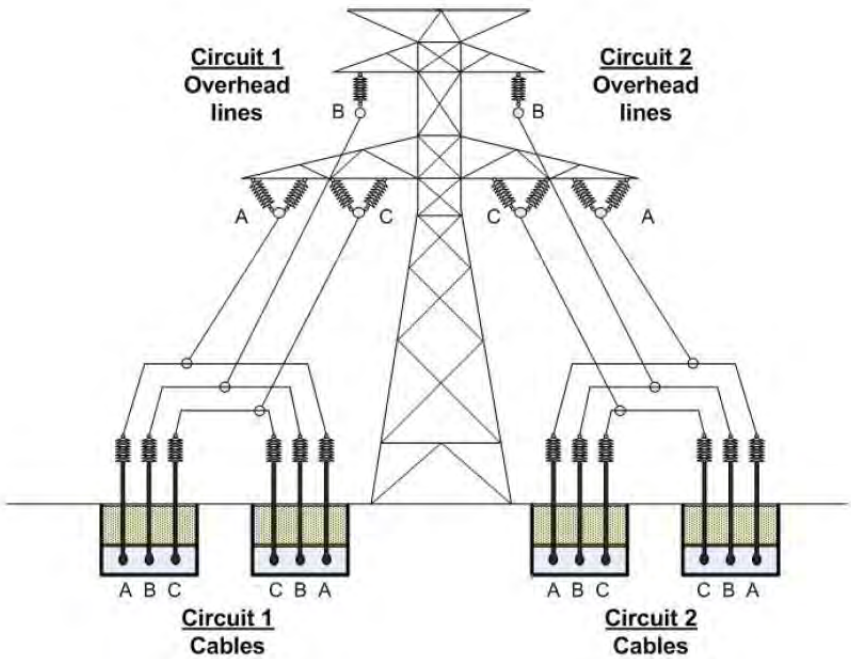

Figure 9. Transition from overhead 500-kV double-circuit transmission line to underground segment proposed for the Heartland Project, Alberta (from *CCI*, 2010b).

Figure 10. Direct-burial trench for one circuit of a 400-kV AC line. The number of trenches depends on how many conductors are required to carry a single circuit. Two trenches are often required, as more conductors are at times needed to carry the same amount of power because of the need to dissipate heat. For the Alberta double-circuit line, four trenches are required to bury the two 500-kV circuits. Because of the need for vehicle access, the width of the disturbed area for underground burial is far wider than the actual trench width. This is the least expensive form of undergrounding. (From *Highland Council*, 2005.)

Ducts and Vaults

The use of ducts (Figure 11) allows a tighter arrangement of cables and can reduce the width of the trench area. Vaults need to be installed approximately every 2000 feet for installation, splicing of cable, and servicing. Ducts also leave the individual cables free so that they can be easily removed for servicing. Additional ducts are at times installed for back-up cables to increase reliability, and directional drilling is at times to use to install ducts beneath areas that are inaccessible by trenching. In direct burial, trenches are at times lined with concrete to create underground vaults to carry the cables (Figure 12).

Figure 11. Installation of cables in ducts. This allows lines to be stacked vertically, and this strategy is often used in urban settings. This technique can be used for either XLPE or SCFF cable. (From *San Diego County*, 2010.)

Figure 12 Installation of 230-kV circuit in concrete-lined trench/vault, New Zealand. The photo on the right appears to show conduit, with the cable inside and all three phases [cables] bundled together. The sides of the trench would also indicate that this is direct burial of the line. (From *Transpower*, 2010.)

Conduit

The use of high-pressure fluid-filled conduit for cable installation (HPFF, Figure 13) greatly condenses the space required for underground lines (an entire circuit for a 345-kV line can be placed within an 8” diameter conduit), but this is also more expensive, and the conduit must be filled with dielectric oil for insulation and heat dissipation. If the conduit were breached, this would leak oil into the surrounding ground and contaminate it. Stations that maintain oil pressure are also required, and the oil may need to be circulated to cool the lines.

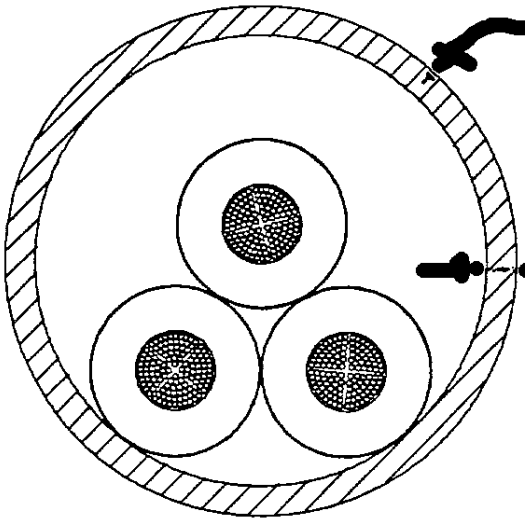

Figure 13. Cross section of a high-pressure fluid or gas-filled conduit used with HPFF or HPGF (GIL) cables. This conduit is filled with dielectric oil for insulation and cooling, and this arrangement allows the most compact arrangement of cables. The cost of such systems is increased because stations must be installed to maintain oil pressure and, if needed, to circulate the oil for cooling purposes. (See Figure 5 for an illustration of how cables are installed in conduit.) (From *PSC Wisconsin*, 2009.)

Tunnels

The ultimate solution to undergrounding extra-high-voltage lines is to bore a tunnel (Figure 14), which has been done in several large cities, including Tokyo, Shanghai, London, and Madrid. ConEd also bored a tunnel beneath the Chicago River for its 345-kV underground project. The cost of tunneling greatly exceeds all other undergrounding methods. Ventilation and circulation of air in tunnels is also needed to reduce heat built-up (*CCI*, 2010a). Ampacity (current carrying capacity) must sometimes be limited to keep heat generation below a specific level, possibly limiting the power a circuit can carry.

Figure 14. The ultimate solution for underground lines – the tunnel. By far the most expensive option, tunnels provide the greatest ease of access and maintenance, and air-circulation equipment can be added to maintain cooling of the lines. Tunnels can also be sized to allow for the addition of additional lines later at less cost and time. The is ComEd's 300' tunnel beneath the Chicago River for its 345-kV underground line, installed in 2008. (From *Donnelly*, 2008).

Other Considerations

Another consideration for underground lines in urban settings is the need for joint bays to splice the cable at specific intervals and for manholes to service the lines. This increases the complexity and cost of installation. Testing of the underground portion of a 500-kV project would also delay the in-service date by 1-2 years (*CCI*, 2010b). The cost of undergrounding

high-voltage lines increases exponentially with voltage (the relationship is not linear), which quickly diminishes the economic feasibility of burying longer lengths of line.

Costs for the underground portion of the 500-kV Heartland Transmission Project are shown below for two scenarios. The cost of burying the entire 40-mile length of the project (~ $1.5 billion) would approach that of the entire SunZia Project as it is currently configured, and simply acquiring the amount of cable needed would pose a significant difficulty (*CCI*, 2010b). Because of these two factors, burial of the SunZia lines could be done for only shorter distances.

Table 4. Estimated costs of burying different lengths of 500-kV line for the Heartland Transmission Project (four groups of three cables installed at one time).

Underground Distance	Approximate Cost of Cable and Burial	Approximate Cost of Overhead–Underground Transition Stations	Total Estimated Cost
10 km (6.2 miles)	$237 Million	$80 Million	$317 Million
20 km (12.4 miles)	$443 Million	$106 Million	$549 Million

Addendum: Use of Interstate 10 Median for Undergrounding SunZia Lines

It is initially very appealing to consider using the median of I-10 to route the SunZia Southwest Transmission Project through Tucson, and such use of medians has been investigated by others. Routing the lines above ground in an Interstate median, per se, is legally forbidden in all states and presumably by the U.S. Department of Transportation (survey by *Connecticut Department of Transportation*, undated). This survey was apparently undertaken in response to inquires by Connecticut Light and Power (CLP) (Northeast Utilities System) and United Illuminating Company (ULC) into routing its 345-kV Middleton-Norwalk line in the median or right-of-way of Interstates 91 and 95 and U.S. Highway 7 in Connecticut.

In pursuit of this, CLP and ULC further commissioned a study to determine the feasibility of using the medians of these interstates for burying the line (*Burns and McDonnell*, 2003). Burns and McDonnell determined that a single-circuit 345-kV overhead line would require a right-of-way of 120’ and that an underground line would require 40’ (15’ permanent easement and 40’ temporary easement). They then assessed the three routes mentioned above and found that only parts of them were feasible because of these constraints.

In Tucson, the critical area where burial of SunZia transmission lines might be needed is through the center of the city, and applying these criteria to the median of Interstate 10 shows that burying the lines here is not feasible. No median now exists from Park Avenue to the southeast to almost Prince Road to the north, a distance of ~6.85 miles. In addition, the median of I-10 appears too narrow to accommodate undergrounding at least to Ina Road, an additional 5.0 miles to the northwest.

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Received
BLM on
AAG 6/1/2010

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue..

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

STEPHANIE A. BASON

CPG
JUN 18 2010

May 4, 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY -6 AM 11:24
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As residents and land owners in Lincoln County, New Mexico, we are writing in support of the proposed substation in our County and for the development of alternative transmission routes that connect to this substation. New Mexico has an abundance of renewable energy sources and has already taken steps toward increasing the use of converted wind, solar, and geothermal resources into electricity. Still needed are steps to construct the transmission infrastructure that will deliver the electricity to market. The SunZia Southwest Transmission Project will further this process as well as stimulate the local economy by needed jobs and tax revenue.

The Bureau of Land Management has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on visual space, recreational activities, biological and cultural resources, land use, and water/air/noise quality.

Please grant the SunZia project all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Bettie G. Moss

Bettie G. Moss

David B. Moss

David B. Moss

104 Shae Road
PO Box 404
Corona, NM 88318

CPG
JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY 13 AM 11:42
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Linda Lee Sultemeier
PO Box 147
Corona NM 88318

FILED
JUN 18 2010

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

RECEIVED
B.L.M.-MAILROOM
2010 MAY 13 AM 11:44
STATE OFFICE
SANTA FE, NEW MEXICO

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely, Clint Gary Buttemer

Box 147
Corona New Mexico
88318

GPG
JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 APR 26 AM 11:39
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Edward Sage

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 APR 26 AM 11:38
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Edward Gage

JUN 18 2010

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in our County, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely, Bradley J Baze
PO Box 422
Corona, NM. 88318

RECEIVED
B.L.M.-MAILROOM
2010 APR 26 AM 11:38
STATE OFFICE
SANTA FE, NEW MEXICO

JUN 18 2010

Received by BLM
on 6/1/2010
AG

5-27-10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Joseph & Roxanne Gramaospe

epd
JUN 18 2010

Received by BLM
on 6/2/2010
AG

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Sherree D. Bradford

epg
JUN 16 ...

epg
JUN 18 2010

Received by BLM
on 6/2/2010
AAG

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Janet L Verna

JUN 18 2010

Received by BLM
on 6/2/2010
AG

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue..

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

JUN 18 2010

From: Daniel Baker
To: NMSunZiaProject@blm.gov
Cc: Mickey Siegel
Subject: Cascabel Working Group DEIS contributions, Part I
Date: 06/10/2010 11:00 AM
Attachments: [redacted]

Cascabel Working Group
C/O 6590 N. Cascabel Road
Benson AZ 85602

June 10, 2010

*Delivered via electronic mail (*NMSunZiaProject@blm.gov*) and U.S. mail.*

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115

Re: DEIS contributions to the Proposed SunZia Transmission Project

Dear Mr. Garcia:

Thank you for receiving these contributions to the Draft Environmental Impact Statement (DEIS) for the proposed SunZia Transmission Project routes traversing the San Pedro River Valley. This project was undertaken with your and Mickey Siegel's express assurances at our Cascabel meeting on January 13, 2010 that our contributions to the DEIS would be welcome and included.

We are apologetic that our entire contribution is not yet complete as we must rely on volunteers who also have busy lives. We do understand and are grateful that BLM will continue to accept comments received after the June 10, 2010 public comment period. Nonetheless, we are enclosing the first section of our report that is relatively complete as indicative of the scope and range of our contributions. The full report will follow as soon as possible, likely within the next month.

Thank you for your thorough consideration of these DEIS contributions.

Sincerely,

Daniel F. Baker
Cascabel Working Group, Secretary

Cascabel Working Group
C/O 6590 N. Cascabel Road
Benson AZ 85602
<cascabelworkinggroup.org>

Cc: "Mickey Siegel" <Msiegel@epgaz.com>,

DRAFT ENVIRONMENTAL IMPACT STATEMENT CONTRIBUTIONS FOR PROPOSED SUN ZIA TRANSMISSION LINE ROUTES TRAVERSING THE SAN PEDRO RIVER VALLEY

SUBMITTED BY THE

CASCABEL WORKING GROUP
(PART I)

Authors

NEPA requires that the preparers of the Environmental Impact Statement (EIS) and their qualifications be listed. The primary author of this document to date is Daniel F. Baker.

Mr. Baker received his Bachelor of Arts degrees in Philosophy and English Literature from Westmont College in Santa Barbara, California before several years of graduate study in Philosophy of Religion. He eschewed doctoral fellowships in philosophy to pursue a career in graphic arts. As a principal partner in a successful business, he served in several administrative and executive capacities before retiring to Cascabel in 1994 where he has lived since.

He is a major shareholder in the Saguaro Juniper Corporation, and was a founder of the non-profit Cascabel Hermitage Association where he continues to serve on the board of directors as secretary. He served as a Supervisor for the Redington Natural Resource Conservation District (NRCD) for several years and was named NRCD Cooperator of the Year in 1996. He was hired by The Nature Conservancy (TNC) and served in the capacity of Cascabel Community Steward until 2002. He was principally involved in TNC's acquisition of the 2600 acre Three-Links Farm. In his TNC capacity he travelled the length of the San Pedro River from its headwaters in Mexico to its confluence with the Gila River, and helped lead numerous tours of its lower reaches. He facilitated and recently helped complete conservation easements on 1700 acres in Hot Springs Canyon, a major tributary of the San Pedro River. He continues to lead San Pedro Valley natural history tours for various universities, environmental and church groups, drawing on his education with TNC and as an amateur naturalist. He currently serves as board member and secretary of The Cascabel Working Group, and is a homeowner in Cascabel.

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[*The sections below to follow soon*]

IV. MSPRV – DIRECT IMPACTS:

- **A. Landscape Fragmentation**
- **B. Birds**
- **C. Waters, Fish and Amphibians:**
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- **E. Reptiles, Butterflies, Pollinators, etc.**
- **F. Biotic Communities, Plants and Exotics**
- G. **Misc.: Fire, Noise, Etc.**

V. CONCLUSION

VI. APPENDIX: List of threatened, endangered, and species of concern in MSPRV

I. INTRODUCTION

This document represents the initial input of the Cascabel Working Group to the Draft Environmental Impact Statement (EIS) for SunZia transmission line north/south routes traversing the San Pedro River Valley (SPRV). Our focus, as the name implies, is primarily "environmental." NEPA's characterization is wider by virtue of its defining the EIS purview as the "human environment", thus implicating cultural and sociological resources along with natural ones. Nonetheless, those equally significant aspects of the SPRV are only incidentally touched upon here and await other venues for fuller development.

For those familiar with the work of the Cascabel Working Group, it will come as no surprise that we believe that a fair application of National Environmental Protection Act (NEPA) laws in light of the biological evidence argues strongly against SPRV routes. Acknowledging that bias, it is important to note however that this study did not require a cherry-picking of the research to support a preconceived viewpoint. The reality is that the authors had difficulty in knowing when to curtail their investigations. Despite the "green" credentials of the SunZia project, opposition to an SPRV route by every environmental organization that has weighed in on the issue is testimony to the widely held biological consensus.

It is important to note that neither the Cascabel Working Group, nor the evidence of this document, is taking a position in opposition to the SunZia transmission line project *per se*. The need for renewable energy is significant and urgent, and the degree to which the SunZia project participates in that effort is laudable. It is only urged that, in the rush to *renewable* energy for the sake of the human and natural environment, we not sacrifice *non-renewable* natural resources of global significance in the process. In so far as the SunZia project proceeds, we propose that present energy corridors that are already ecologically compromised be pursued in favor of ones such as the SPRV that would severely impact our natural environmental heritage.

II. GEOGRAPHICAL AREA:

The areal focus of this document is those portions of the SPRV traversed by proposed routes for the SunZia transmission lines, principally from about the Winchester substation to the San Manuel and Oracle area. This reach of the SPRV is largely congruent with what has been traditionally termed the Middle SPRV (MSPRV), as it is in Pima County's Sonoran Desert Conservation Plan, that is, from the rocky outcrop just north of Pomerene known locally as "The Narrows", to the crossing of the San Pedro River by the Cascabel Road just south and east of San Manuel,[1] a reach of nearly 40 miles.

It is important to note however that though those markers are largely defined by the San Pedro River, the consideration of this document is the entire Middle San Pedro River Valley watershed, that is, both the basin and range extent of that traverse. The Galiuro and Winchester Mountains to the east, the Rincon and Catalina Mountains to the west, as well as the attendant foothills and canyons, are equally part and parcel of the MSPRV ecosystem to be considered here.

At the point of this writing, no one SunZia SPRV route among the several proposed has been selected, and they are largely undefined in detail. In general these several routes primarily run on either the eastern or western flanks of the valley. Though crossing the SPR at one or several

[1] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 3.

points, those routes primarily traverse the SPRV on its northwest trending axis for a length of approximately forty miles across the upland foothills, bajadas and canyons. Especially relevant to the area of consideration and impacts is the SunZia project's petition to the Federal Energy Regulatory Commission (FERC) wherein they state:

> *A right-of-way of up to 1,000 feet in width is required to construct, operate, and maintain the Project. However, in order to accommodate future expansion, the Project's EIS study corridor is one mile wide. The wider study corridor will significantly reduce the environmental obstacles to future transmission expansion along the Project's path by considering environmental resources any such expansion would be likely to affect.*[2]

While this lack of specificity is a detriment to detailed route analysis, on the other hand it argues for a wider consideration of MSPRV impacts.

III. MSPRV – INDIRECT IMPACTS:

A. NEPA – Context and Intensity

The SunZia project mile-wide study corridor and the introduction of future transmission expansion greatly enlarge consideration of both the spatial and temporal impacts of the project. As NEPA warrants, "effects" in the EIS include "Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects."[3] Such considerations are also pertinent to a NEPA judgment of Environmental Objection (EO), "Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts."[4]

Other legal definitions explicit in NEPA also recognize that such wider consideration is germane to the modern understanding of ecological science – i.e. the interconnection and interdependence of all elements of an ecosystem. The severity, duration, or geographical scope of impacts, along with associated threats to national environmental resources is a basis for environmentally unsatisfactory reviews. NEPA Section 1508.8 also notes that "indirect effects may include… related effects on air and water and other natural systems, including ecosystems. …Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative."[5]

Another component related to wider considerations of areal impacts explicit in NEPA is the "significance of an action," or what one might call the weighted metrics to be considered. With regard to those weighted measures, NEPA requires that both the "context" and "intensity" or "severity of impact" be considered. That means that the proposed action "must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected

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[2] http://www.sunzia.net/pdf/012910_FERCpetition.pdf, p. 4
[3] CEQ NEPA Regulation Section 1508.8 [40 C.F.R. § 1508.8].
[4] Ibid.
[5] Ibid.

interests, and the locality." In evaluating the intensity of the proposed action, it requires that, "Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas" should be considered.[6]

B. SPRV General Attributes:

1. San Pedro River

While the loosely defined SunZia project routes avert most of the designated conservation status lands in the MSPRV, there is an abundance of "proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas" to address.

The most renowned of course is the San Pedro River itself, often regarded as the last major free-flowing river in the desert southwest, and considered to be "…the best example of a desert riparian system remaining in the Southwest."[7] Accolades such as the following are numerous:

> *The upper San Pedro river basin sits at the ecotone between the Sierra Madre Mountains to the south, the Rocky Mountains to the north, the Sonoran Desert to the west, and the Chihuahuan Desert to the east. The basin is one of the most ecologically diverse areas in the Western Hemisphere and contains numerous different biotic communities and supports several endangered plant and animal species. …The San Pedro is one of the last free-flowing streams in the American Southwest and serves as an international flyway for more than 400 species of birds, and sixty km of riverine territory north of the U.S.-Mexico border is designated as a national conservation area.*[8]

It has in fact been recognized as having natural heritage values of global significance by several organizations, including The Nature Conservancy,[9] the Commission for Environmental Cooperation,[10] and the American Bird Conservancy.[11] Indeed, the Bureau of Land Management which is overseeing the SunZia project is itself among them.[12]

Speaking to the renown of the San Pedro River was the convening of a tri-national Commission for Environmental Cooperation (CEC) negotiated by the United States, Canada and Mexico under the North American Free Trade Agreement (NAFTA).[13] It too touted the San Pedro area as

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[6] CEQ NEPA Regulation Section 1508.27 [40 C.F.R. § 1508.27.]

[7] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 3.

[8] Forward by W. James Shuttleworth, Director, NSF Science and Technology Center for Sustainability of Semi-arid Hydrology and Riparian Areas (SAHRA) in Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), p. x.

[9] "Last Great Places," Special issue, *The Nature Conservancy* (41: May/June, 1991).

[10] "Ribbon of Life: An Agenda for Preserving Transboundary Migratory Bird Habitat on the Upper San Pedro River," Commission for Environmental Cooperation (1999).

[11] "The American Bird Conservancy Guide to the 500 Most Important Bird Areas in the United States," American Bird Conservancy (Random House Trade Paperbacks, 2003).

[12] "San Pedro River Ecosystem – An Acquisition Plan," prepared by U.S. Bureau of Land Management (Safford District Office, Arizona, 1990).

[13] Sustaining and Enhancing Riparian Migratory Bird Habitat on the Upper San Pedro River," for the Commission for Environmental Cooperation, 1998, p. 1.

"internationally renowned for its native biodiversity," containing "one of the richest assemblages of species of any region in the United States (Simpson 1964 in Friedman and Zube, 1992)."[14] But its focus was the fact that "The San Pedro River supports one of the most important migratory bird habitats in North America; indeed, roughly half of the birds that breed in this arid region are dependent upon it."[15] Along with possessing "one of the highest bird diversities of areas its size in the United States,"[16] they called the supporting habitats "of special continental importance…."[17]

> *For these reasons, in 1995 the American Bird Conservancy, in partnership with Partners in Flight and the National Audubon Society, named the SPRNCA a Globally Important Bird Area. This was the first designation of this kind in the Western Hemisphere.*[18]

What is relevant here is that the prominence generically ascribed to the San Pedro River (SPR) is equally applicable in its lower reaches. Virtually all of the significant biological features of the Upper SPR apply to its middle and lower reaches, as should the managerial prescriptions, as it wends its way north to the Gila River. After all, "…ecosystem management efforts that end abruptly at administrative or international boundaries are, in the long-term, unlikely to accomplish the overall goal of biodiversity conservation."[19] The CEC itself concurred, noting that:

> *The expert team has adopted a bird's-eye-view of habitat availability, which transcends political boundaries. We consider the United States and Mexican reaches of the basin a single hydrologic entity. …The objective of this investigation is to provide information that will help maintain a high quality, self-sustaining riparian ecosystem within and beyond the San Pedro Riparian National Conservation Area. …all North Americans benefit from, and have a stake in preserving this riparian habitat and the migratory birdlife that it supports…..*[20]

It is abundantly clear that the attributes sited by the CEC and for SPRNCA apply to the Middle SPRV (MSPRV). This reach of the SPR also partakes of the same internationally renowned biodiversity, and evidently more so than the Upper SPRV. While also partaking of the Madrean and Petran Woodlands that make up the Sky Islands ranges, here the Sonoran Desertscrub (154.12) comes from the north and west to meet the Chihuahuan Desertscrub ( ) of the valley half way. There is also only north of Interstate-10 the Interior Chaparral (133.3) rimming the ranges of the MSPRV, as well as immediately proximate biotic communities to the valley that are not present further south – the Plains and Great Basin Grasslands (142.3) of Allen Flat through which the SunZia route would pass on its way to the Winchester substation, and the Great Basin Conifer Woodland (122.4) in the Aravaipa Valley just east of Kielberg Canyon.

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[14] Ibid., p. 16.
[15] Ibid.
[16] Ibid., p. 3.
[17] Ibid., p. 15.
[18] Ibid., p. 23.
[19] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion, p. 4.
[20] Ibid., p. 15.

Within a 25 mile radius of the central MSPRV exists eight biotic communities, as great as any area in the American Southwest, twice as many as in the Upper SPRV.

This extraordinary biodiversity will be returned to when looking more pointedly at the ecoregional influences in the MSPRV, and especially when reviewing in depth the vertebrate populations in the area. But when addressing the San Pedro River *per se*, it is its preeminence as the main flight corridor for neotropical migrant birds in the West that elicits the greatest attention. The studies that substantiate the SPRV's "continental importance" bear out that those migrating birds do not suddenly change watersheds when reaching the Lower SPRV.[21] A third of the monitoring stations for the principal study in that regard were in the MSPRV, two in the canyons of upper Hot Springs Canyon tributaries, and two on the SPR not far north of its confluence with Hot Springs and Paige Canyons. Some of the most significant data comes from those sites.[22] Indeed, one of the principal biologists in the study indicated that the highest densities of neotropical migrants were found in Cascabel where birds showed inter-species aggression indicating limitations of habitat.[23]

Another commonality with the Upper SPRV is the vitality of the river itself. Some tend to minimize the Lower San Pedro's significance because of its apparent dependence upon the Upper, and its admittedly more intermittent flow regime. Nonetheless, its downstream locale does not make it second in significance – migrants require, and by virtue of the visiting numbers apparently receive, as much nutrition in their migrations here as they do upstream.

Further, while hydrologic studies confirm that a greater share of upstream groundwater reaches the middle San Pedro River as subflow from upstream at the Narrows than formerly presumed by the Arizona Department of Water Resources estimates, this section of the river is still most largely dependent upon mountain front recharge. "Mountain front recharge is probably the most important source of valley-fill groundwater recharge in this sub-basin."[24]

It is true that less recharge would be expected as the elevation of the river descends into the drier Sonoran zone. However, as Skagen's study demonstrated, there is actually more utilization by neotropical migrants of the upland oases in the riparian habitats of the SPRV mountains and foothills than on the river itself.[25] The river appears to be the green "ribbon through the desert" that is the navigational arrow pointing the way, while many of their best stopover resorts seem to be those permitted by the uplands. Still, if the river itself were not important, the birds would be following other drier valleys.

This connection of the uplands and the river is a point that will be continually returned to, for it is the most glaring ecological misapprehension of the SunZia proposed routes through the MSPRV: that somehow the connection between river, foothills and mountains does not exist and can be transected without deleterious impact to an ecosystem of critical continental importance.

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[21] Susan K. Skagen (USGS), C.P. Melcher, W.H. Howe and F.I. Knopf, "Comparative Use of Riparian Corridors and Oases by Migrating Birds in Southeast Arizona", in *Conservation Biology* (Vol. 12, No. 4, August, 1998), pp. 896-909.

[22] Ibid., p. 907.

[23] Dave Krueper, BLM biologist, personal communication.

[24] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 14.

[25] Skagen, op. cit.

2. Unfragmented and Intact landscape

While the MSPRV shares the Upper SPRV's biodiversity and avian flight corridor, that does not mean there is no difference, and in fact the distinction is a critical one. There is no question that SPRNCA and the political efforts of the Upper San Pedro Partnership (USPP) have garnered most of the attention for the SPR. That has been appropriate since development has been an ongoing concern in the Upper San Pedro, while the Middle SPRV has until recently escaped such large-scale impacts. It so happens however that past disregard now speaks to the MSPRV's distinctiveness.

It is the very lack of development and landscape fragmentation which has created the political upheaval in the Upper SPRV that really distinguishes the MSPRV. It is what strikes the eye of any visitor and even the most casual observer. "Spanning this reach of river is a nearly unfragmented landscape linking the Galiuro and Winchester mountains with the Santa Catalina and Rincon mountains, which represents the narrowest intermountain distance between these ranges."[26]

Unfragmented landscapes are key indicators developed by biologists in assessing the conservation value of regions and sites and the imminence of the threat they face.[27] "Large blocks of habitat have the potential to sustain viable species populations, and they permit a broader range of species and ecosystem dynamics to persist."[28] This is a concept that will be returned to in greater detail when assessing the impacts of the SunZia routes through the MSPRV.

This unfragmented landscape of the MSPRV was, for example, a major rationale in Pima County's acquisition of the A-7 Ranch which extends from the Rincon and Santa Catalina mountains to the valley floor and SPR. As stated in the plan, "The overall biological goal in this subarea adopted by the Science Technical Advisory Team is to protect native plants, animals and natural communities of the Middle San Pedro River throughout Pima County by maintaining and/or restoring ecological and evolutionary processes that sustain them within a largely unfragmented landscape."[29] It was also articulated as one of their conservation strategies: "Maintain relatively unfragmented landscape connections between the Rincon, Santa Catalina, Galiuro and Winchester mountain ranges and through the San Pedro River valley that facilitate movement of wide-ranging wildlife species to meet seasonal and annual life requirements and for genetic interchange."[30] Pinal County has also recognized the unfragmented nature of the area by adopting a County Open Space and Trails Master Plan that identifies much of the Lower San Pedro Valley as open space.[31]

Integral to the unfragmented and open space character of the MSPRV is the lack of improved roads. The MSPRV is in fact part of one of the largest "roadless areas" in the American Southwest. "Roadless area" is a technical term that means, "Literally an area without any

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[26] Malusa, J. and J. M. Porter, A biotic survey of Buehman, Espiritu, Youtcy, and Roble canyons in the Redington Pass region, Arizona, 1990. Report prepared for Riley west, Inc. [SDCP, p. 5]

[27] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 89.

[28] Ibid., p. 121.

[29] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 12.

[30] Ibid.

[31] TNC Scoping comments, July 19, 2009.

improved [author's emphasis] roads maintained for travel by standard passenger type vehicles."[32] The Cascabel/Redington road within the MSPRV routes proposed by SunZia does not meet that criterion. The U.S. Department of Interior classifies a road that "May or may not be graded, and has a dirt surface of any width" as an "Unimproved Road,"[33] though Cochise County classifies it merely as a "primitive road."

With only a few exceptions around the margins, the area is predominantly "roadless" from the western flanks of the Rincon Mountains and crest of the Catalina Mountains to San Manuel and highway 77, then to the Gila River on the north, to the town of Bonita on the east, and to Three Links Road on the south. That area includes not only the MSPRV and its ranges, but also portions of the Lower SPRV, the Santa Teresa Mountains, and most of the Aravaipa Valley and the Pinaleno Mountains.

> *...wildlife connections… extend from the San Carlos Reservation south through the Aravaipa and Santa Teresa Wilderness Areas, and then further south into the wilderness land of the Galiuro Mountains. There exists a 100-mile-long stretch of land, extending from the San Carlos Apache Reservation all the way south through Gila, Pinal, and Graham Counties to northern Cochise County, containing a network of wildlife trails that has never been interrupted by a motorized vehicle road, one of the last remaining wildlife migration corridors of this type and magnitude in the Southwest.*[34]

Indeed, the MSPRV is part of a largely unfragmented area of nearly one million acres.[35]

It may be objected that the areal extent here considered is already fragmented by a natural gas pipeline, an electric transmission line and service roads, and ranch roads. In that regard, the point here is not that the MSPRV is "pristine" and without scars, but rather that it is "*largely* unfragmented and intact." The pipeline and existing power line roads have indeed left significant erosive scars, introduced exotic species, and permitted greater ORV trespass, all points that will be examined below in greater detail as significant direct impacts of the proposed SunZia project.[36] Ranch roads on the other hand typically follow washes and ridges and do not cut trans-valley swaths to steep high points.

The SunZia project however, with its twin 16-story 500Kv towers and access roads along the full length of the valley foothills, is enormously greater in its scope and projected impact than anything existing in the valley. That is not to mention the expansion to other infrastructure projects along the same corridor that are clearly foreseen by SunZia's FERC application. The SunZia project is to the existing power lines what an Interstate Highway would be to the Cascabel/Redington unimproved dirt road. Were it implemented, the appellation for the Middle SPRV would have to be altered to "largely fragmented," and prospects for some larger conservation status for the valley would be greatly imperiled if not fatal.

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[32] FSH 1909.12, Section 7.11.

[33] http://www.doi.gov/pam/frm-1876.pdf

[34] Peter Else, Friends of the Aravaipa Region (FAR), letter of May 26, 2010.

[35] Personal communication: David B. Harris, Director, Land and Water Protection, AZ Chapter of The Nature Conservancy.

[36] Cf. Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office, May 1998; and Lower San Pedro Watershed Assessment Project, AZ Water Protection Fund #00-109.

Since NEPA directs us to consider issues of context, threat and proximity, it is noteworthy to consider that west of the Rincon and Catalina Mountains is a metropolitan area of a million people. On the east side is a largely wild, open and environmentally intact area over 1-1/2 times the size of the state of Rhode Island, with a population of only a few hundred people.

> *Although the lower basin is close and accessible to the burgeoning Tucson and Phoenix metropolitan areas, it has so far not undergone extensive population growth and urban/suburban development. In 2000, the population in the central basin, which includes about 80km of the river from the Narrows north to near San Manuel (but not including San Manuel), was reported to be 213 people (J. Haney, unpublished data).*[37]

Another related term applied to the MSPRV is that it is a relatively "intact landscape," which is largely inapplicable to significant portions of the upstream valleys. "Intact habitat represents relatively undisturbed areas that are characterized by the maintenance of most original ecological processes and by communities with most of their original suite of native species."[38] The term cannot honestly be applied to the MSPRV without some qualification. Significant impacts to the dominance pattern of plant species caused by heavy grazing as well as alteration of the hydrologic regime by entrenchment of the SPR occurred around the turn of the twentieth century.[39] Exotic species are present, and natural fire regimes have been altered in the grasslands. Areas in the valley where those aspects persist are more characteristic of "altered" habitats. But as distinct from "heavily altered" habitats, "Original habitat is likely to return with time, moderate restoration, and adequate source pools."[40]

So long as one does not resort to absolutist categories of "pristine" and "original" landscapes which rarely occur in present day lowland areas of the Southwest, the MSPRV represents a relatively intact landscape that is characterized by the maintenance of most original ecological processes and by communities with most of their original suite of native species. With regard to the great extent of the valley which is rangeland,

> *The data indicate that about 40% of the rangeland is in high or very high similarity to the historic condition. In other words, the species present and the proportions making up those species are fairly similar to presumed "historic" conditions for the site. Moderate similarity was found on 53% of the area, indicating either different species occurred or, more likely, the species deviated from the "historic" proportions. This probably indicates shrub increases in most cases. Only 7% were in low similarity.*[41]
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> *…there is general agreement that overall range and watershed condition has improved greatly since the early 1900s and especially since the 1950s. Numbers of livestock have declined dramatically and management (pasture rotation, distribution of grazing) has greatly improved. …Other than roads, there is*

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[37] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), p. 348.

[38] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 120.

[39] Cf. Hastings and Turner, The Changing Mile (University of Arizona Press), 1965.

[40] Ibid., pp. 120-21.

[41] Lower San Pedro Watershed Assessment Project, AZ Water Protection Fund #00-109, 2004, pp. 22-3.

> *probably less human impact on the vegetation of the watersheds now than at any other time since settlement.*[42]

Similarly, riparian woodland areas along the SPR and its valley tributaries have continued to be maintained or improved to relatively intact status. The acquisition or protected conservation sites on significant portions of riparian areas by various agencies and NGO's has certainly been a factor. "Close to one third of the lower river corridor is now in protected status, and stream flow and habitat conditions are improving."[43]

> *Dryland rivers have some of the most variable flow regimes in the world…. However, the very unpredictability of streamflows in dry regions, over time, has produced ecosystems with high resilience. Despite having undergone extensive change, the San Pedro River today sustains productive and diverse biotic communities.*[44]

The Muleshoe CMA has an active prescribed burn program in which neighboring ranches have participated with good results. Pima County's A-7 Ranch also has a fire management plan.[45] The Muleshoe CMA also reports that, "This rest from livestock use over the past decade has allowed natural processes to resume and has helped restore proper functioning condition to the riparian systems on the Muleshoe. This has resulted in improved riparian function, greater diversity in the age structure of the woody riparian species, and increased streambank stability."[46]

Likewise, most major ranches in the valley have fenced many of their riparian areas and created alternative waters in order to allow for better cattle management. Since relatively intact, lower-elevation riparian woodland is now extremely rare throughout the Sky Island region,[47] it is altogether appropriate to state that "There are few places remaining in the southwestern U.S. that are as intact and have the quality and extent of aquatic and riparian habitat as that found on the San Pedro River."[48]

Similar to largely unfragmented landscapes, relatively intact habitats are key indicators developed by biologists in assessing the conservation value of regions and sites. As noted by The Nature Conservancy in their ecological analyses of the Sonoran and Apache Highlands ecoregions, "Landscape-scale Conservation Sites capture entire ecosystems, such as a complex of mountain ranges and valleys, where ecological processes remain largely intact."[49] Thus it can be inferred that the imprimatur "largely intact" pertains to the Lower San Pedro as their fourth highest ranking conservation site out of 100 in the Sonoran Desert,[50] and the Aravaipa

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[42] Ibid., p. 24.

[43] TNC Scoping comments July 19, 2009.

[44] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), pp. 3-4.

[45] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 13.

[46] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office, May 1998, p. 23.

[47] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 259.

[48] TNC Scoping comments, July 19, 2009.

[49] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion, pp. i-ii.

[50] Ibid., pp. 29-30.

Watershed, Kielberg Canyon, Buehman Canyon/Bingham Cienega, and the Winchester Mountains, Allen Flat as four of their 99 conservation priorities in the Apache Highland region[51] - all sites falling within the MSPRV.

Indeed, when large blocks of unfragmented landscape come together with extensive intact habitats in a region of significant biodiversity, a region may take on global significance. As we shall examine shortly, the renowned World Wildlife Fund assessment of terrestrial ecoregions gives the highest priority to "Globally or regionally outstanding ecoregions that present rare opportunities to conserve large blocks of intact habitat," which not incidentally includes the Chihuahuan Desert, Sonoran Desert, Arizona Mountains and Madrean Sky Islands ecoregions, all of which converge in the MSPRV.[52] In fact, each of these same ecoregions was elevated to "Global 200 status" because of their extraordinary ecological phenomena containing extensive intact habitats and large vertebrate assemblages,[53] all of which are again characteristic of the MSPRV.

The Upper San Pedro Partnership referenced above continues to fight the legal and artificial distinctions between the river and its surrounding watershed that continues to develop and threaten the sustainability of the river and its habitat. The distinctive virtue of the MSPRV is that in addition to all of the same biological attributes of the Upper SPR it flows within a relatively intact and largely unfragmented landscape. If the San Pedro River can lay claim to being the last major free-flowing river in the desert Southwest, the Middle SPRV can make a correlate claim: *the last relatively intact and largely unfragmented extended landscape in the desert Southwest through which courses a major free-flowing river.*

3. Historic and Cultural Resources (cursory)

There is sufficient cultural and historic material in the MSPRV to fill several books, as indeed it already has. NEPA defines the EIS purview as the "human environment", thus implicating these cultural and sociological resources along with natural ones. Indeed it is made explicit when stated that "Unique characteristics of the geographic area such as proximity to historic or cultural resources…" should be considered in evaluating "intensity" of impacts.[54] Nonetheless, since the focus of this paper is primarily the biological environment, and such cultural and historic considerations are also beyond the time and expertise of the authors, only a few cursory points will be made such as contribute to the overall argument.

As the Muleshoe Ecosystem Management Plan and Environmental Assessment summarized, "Human occupation of what is now the Muleshoe Ecosystem may stretch back some 12,000

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[51] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion. Prepared by The Nature Conservancy of AZ, Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora, agency and institutional partners, 2004, pp. 46-7.

[52] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 84.

[53] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), pp. 199–224.

[54] CEQ NEPA Regulation Section 1508.27 [40 C.F.R. § 1508.27.]

years."[55] This is evidenced by projectile points being unearthed in mammoth remains just south of the MSPRV. "Today the San Pedro River Valley contains one of the highest concentrations of Paleo properties in the nation."[56]

The Middle SPRV is particularly rich in archaeological sites with a great complexity of periods and cultures represented.

> *CDA* [Center for Desert Archaeology] *and other researchers have identified over 500 archaeological sites in the lower San Pedro Valley. About one third of these sites contain architecture and probably human remains. Furthermore, at least 40 sites were villages inhabited by 100 to 250 people for a century or more and they are marked today by rich archaeological deposits that include thousands of ancient houses and scores of public structures such as ballcourts and platform mounds, as well as large burial areas."*[57]

The Center for Desert Archaeology has made the SPRV a focus of their work, and has seen fit to commission a resident archaeologist and sponsor a very active volunteer stewardship program. In fact the abundance of sites extends right up to the visit of Father Kino to the Sobaipuri of Baicatcan in 1692, which has recently been reasonably established to be near the confluence of the San Pedro River and Hot Springs Canyon. Though scientists shy away from grandiose proclamations, it has been said that the SPRV contains the longest continuous archaeological record in the continental U.S., and rivaled in North America only by the Bering Straits.[58]

What such a plethora of archaeological sites affirms is the longstanding human importance of the MSPRV quite beyond any claims of modern scientists. The twelve millennia of human evidence is that this watered land bridge between two deserts served just as it still does for birds and animals today – a corridor for migration between north and south Americas, and at the same time sufficiently rich in living sustenance to be made a home.

It is worth noting too that the ethnobotanical evidence for those twelve millennia is that people made no artificial division between river, uplands and mountains. Their diets were as rich with the agaves, acorns, pine nuts and the myriad other plant and animal upland resources of the watershed as that available along the river and from their farms. It is one of the main attributes of the Sky Islands that so many ecotones can be crossed in such a short distance that makes it such a rich source of food and biodiversity. For example, the Pinaleno Mountains just east of the Galiuros contain the highest diversity of habitats in the shortest vertical distance of any mountain range in North America, traversing five ecological communities.[59] Without a formal ecological science, they nonetheless clearly understood how everything was connected.

Indeed, one of the major attributes of the San Pedro River Valley is not only that it is an intact ecosystem, but an intact cultural landscape as well.

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[55] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office, May 1998, p. 28.

[56] Ibid.

[57] Center for Desert Archaeology and National Trust for Historic Preservation, BLM scoping comments re SunZia Project, November 25, 2009, p. 13.

[58] Patrick Lyons, Dr. Jeffrey Clark, Desert Center for Archaeology (Pers. Comm.).

[59] http://www.nature.org/wherewework/northamerica/states/arizona/preserves/art1942.html

> *Of particular concern is the lower San Pedro River Valley. This area is widely recognized for the significance of its intact cultural and natural landscape; the scale of regional preservation provides an opportunity to interpret individual cultural resources as part of a broad cultural and economic landscape rather than as isolated phenomena. In addition, the great time depth allows us to study changes in this human landscape over the full time span during which people have inhabited the New World. Such opportunities are no longer available in many Arizona valleys (e.g., Phoenix, Tucson, Safford) where agricultural and, subsequently, urban development destroyed much of the archaeological record before it could be adequately documented. Currently, this largely unfragmented landscape contains no major linear facility, so the potential physical and visual impacts of the introduction of transmission lines of this size cannot be overstated.*[60]

Of course the cultural record and history does not end with ancient sites. Contemporary newspaper accounts record that the MSPRV experienced the raids of Geronimo's band, the last free ranging Native Americans in the continental U.S., right up until his surrender. But Mexicans were already making the area home, long before the valley became American with the Gadsden Purchase. Some of the evidence of their rich heritage is scattered about the valley in adobe ruins and in the graveyards of the Gamez's, Soza's, Araiza's, and more, not to mention that some of their descendents remain residents.

Anglo settlers have a long and worthy ancestry here as well. The history of Redington is about as wild and colorful as that of Tombstone, just a few miles to the south. Their ranching descendents carry on that tradition of a rugged western lifestyle across as much as five generations, and their voices are among the strongest in wanting to maintain the integrity of this valley. One of those ranching ancestors, Frank Marion Pool (of Pool Wash fame), who moved to the lower San Pedro from Tucson in 1883, wrote in his unpublished memoirs:

> *It is one of the most beautiful valleys I ever saw, the river a living stream. When I arrived, a few farms were already under cultivation, grass everywhere. Fine cattle ranged from the Mexican line to where the San Pedro river joins the Gila. There was wild game in abundance: deer, antelope, wild hogs, beaver, raccoons, foxes, wildcats, mountain lions, bear, rabbit, quail, doves, ducks and geese. The river teemed with fish, suckers and Gila salmon, some of them weighing as much as fifteen pounds.*[61]

To maintain as much of what was, and sustain as much of what can be, is a dream that can bring together a twelve thousand year Native American history with Mexican-Americans, Anglo ranchers, biologists and environmentalists. That is the diversity of human connection that mirrors the ecological one in the MSPRV.

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[60] Center for Desert Archaeology and National Trust for Historic Preservation, BLM scoping comments re SunZia Project, November 25, 2009, p. 5.

[61] Nat McKelvey, "Reckless, Romantic Redington", *Arizona Highways*, May, 1958.

4. Protected Status Lands and Partners

Given the international significance of the San Pedro River, the outstanding biodiversity of the region, and the extent of the largely unfragmented and relatively intact landscape of the MSPRV, it is not surprising that there are a plethora of protected status lands and working partners in the area. Perhaps the only surprise is that there are so many, exhibiting nearly as much diversity as the land itself. Here follows a brief summary of those efforts.

- The first institutional conservation work in the MSPRV dates to 1910 with the establishment of U.S. Forest Service (USFS) holdings in the Galiuro Mountains on the east side of the Valley.
- The Galiuro Wilderness was designated in Congress in 1964 and was enlarged in 1984.
- USFS holdings were expanded to include extensive lands of the Coronado National Forest in the surrounding Winchester, Santa Catalina and Rincon Mountains as well as the Rincon Mountain Wilderness Area.
- The Redfield Canyon Wilderness was designated by Congress as part of the Arizona Desert Wilderness Act of 1990.
- The Saguaro National Park, in recognition of the area's unique environmental attributes, was established as a National Monument in 1933 and upgraded to National Park status in 1994. The Saguaro East Unit, which includes the Saguaro Wilderness Area, overlooks the MSPRV.
- The Muleshoe Cooperative Management Area (CMA) with 57,500 acres is jointly managed by the Bureau of Land Management (BLM), Forest Service (USFS), Arizona Game and Fish Department (AGFD), and The Nature Conservancy (TNC). It includes part of the Galiuro Wilderness, Redfield Canyon Wilderness, and Hot Springs Area of Critical Environmental Concern (ACEC).

  As the CMA report states, "Since ecosystems do not stop at traditional boundary lines…," managers looked across boundaries to develop an active partnership between public and private interests to work on the plan. An interdisciplinary team of resource specialists from the BLM, AGFD, USFS, TNC, Soza Mesa Ranch, Saguaro-Juniper Association, and Bayless and Berkalew Company was convened to develop the plan.[62] It is noteworthy that though east valley SunZia routes take pains to skirt the Muleshoe CMA, they run through Soza Mesa, Saguaro-Juniper and Bayless and Berkalew who are all neighboring ranches that have similar resources and management concerns.

  In the Muleshoe CMA, Wildlife and its habitat are managed cooperatively under a Master Memorandum of Understanding (MOU) (1987) between BLM and the Arizona Fish and Game Commission. The BLM manages habitat for species identified as Wildlife of Special Concern by AGFD in conformance with state objectives which are identified in the AGFD Wildlife 2000 Strategic Plan. Federally listed species and those proposed for listing are protected by the Endangered Species Act of 1973 as amended (ESA). The

[62] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office, May 1998, p. 1.

BLM is mandated to protect threatened and endangered species and the ecosystems (habitats) upon which they depend.[63]

- The Safford District RMP designated the 16,763 acre Hot Springs Watershed ACEC for the protection of riparian, cultural, and fish and wildlife values including threatened and endangered species values.[64]
- The Pima County A-7 Ranch is part of Pima County's award-winning Sonoran Desert Conservation Plan and extends from the forests of the Catalina Mountains to the San Pedro River. Using 2004 voter-approved bond monies, the County acquired Six Bar Ranch and the A7 Ranch in the San Pedro River Valley, included 6,800 acres of fee lands, the 34,000-acre State grazing lease, and the 80-acre Bureau of Land Management grazing permit. The County manages the ongoing ranching operations, while conserving and protecting biological and ecological values of the lands. "The overall biological goal in this subarea adopted by the Science Technical Advisory Team is to protect native plants, animals and natural communities of the Middle San Pedro River throughout Pima County by maintaining and/or restoring ecological and evolutionary processes that sustain them within a largely unfragmented landscape."[65]
- Buehman Canyon is a critical wildlife corridor that is jointly managed by TNC, Pima County and the USFS. Buehman Canyon was investigated and designated a "Unique Water" of the State by ADEQ in 1996.
- Bingham Cienega is a spring-fed marsh on 285 acres that was acquired by Pima County Flood Control District in 1989 and is managed by TNC. Sonoran Cienega Wetland and Wooded Swamp are a globally imperiled natural community.
- In 1990 The Bureau of Land Management identified 8500ha for possible acquisition in the SPRV, and now holds extensive deeded and conservation easement lands in the in their Cascabel core Areas of Critical Environmental Concern.[66] The Cascabel community negotiated a Cascabel Ecosystem Management Plan with the BLM.
- The 3 Links Farm was purchased by TNC which placed conservation easements on 2,209 acres. Considerable water rights have been retired and this six mile stretch of river is once again flowing.
- The Bureau of Reclamation is also an investor in the 3 Links Farm. They did a habitat conservation plan with the Fish and Wildlife Service when they needed to mitigate for effects of southwestern willow flycatcher at Roosevelt Lake.
- The 57ha Spirit Hollow Preserve just southeast of San Manuel is habitat acquired by the Salt River Project as mitigation for impacts to southwestern willow flycatchers as a result of dam alterations and reservoir operation activities at Roosevelt Lake.
- The Center for Desert Archeology has been locally active since the 1980's in order to protect the extensive cultural and historic resources in the SPRV. It holds archeological

[63] Ibid., p. 28.
[64] Ibid., p. 36.
[65] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 12.
[66] "San Pedro River Ecosystem – An Acquisition Plan," prepared by U.S. Bureau of Land Management (Safford District Office, Arizona, 1990).

conservation easements in the MSPRV and supports a Cascabel staff member and an active local site stewardship program.

- In Hot Springs Canyon conservation easements covering over 1700 acres were recently donated by the Saguaro Juniper Corporation, the non-profit Cascabel Hermitage Association, and several other private landowners. Their generosity is testimony to the conservation ethic shared by many of the MSPRV residents.
- The U.S. Forest Service recently determined that the strong ecological values of the San Pedro River Ecosystem Project deserved the highest funding priority in its national Forest Legacy Program. The San Pedro River project will conserve 694 acres of riverside forest near Cascabel. Corbin Newman, regional forester, Southwestern Region of the U.S. Forest Service said, "The importance of the San Pedro River ecosystem to the Southwest was validated by its selection as the number-one Forest Legacy Program project in the nation by the national review panel." The award received commendations from Governor Brewer and the district's Congresswoman Gabrielle Giffords.[67] In support of the project, Jeanine Derby, Forest Supervisor for the Coronado National Forest, noted that habitat fragmentation was a key management issues in their Forest Plan revision and said, "The lower San Pedro River Valley is a critical link between Coronado National Forest lands in the Catalina Mountains to the west and Galiuro Mountains to the east."[68]
- Neighboring the MSPRV is the perennial Aravaipa Creek, widely recognized as one of the most important refugia for native fish in the Southwest. A 77,400-acre area including the canyon and its surrounding uplands are jointly managed by the Bureau of Land Management (BLM), Arizona Game and Fish Department (AGFD), and The Nature Conservancy. The area includes the Aravaipa Canyon Wilderness, three Areas of Critical Environmental Concern (ACEC), and the Conservancy's Aravaipa Canyon Preserve.
- Arizona State Land Department (ASLD) rangelands in the Hot Springs, Soza and Redfield Canyon watersheds are part of the State Trust Land Reform Initiative of which "approximately 570,000 acres of the most critically important state trust lands through the designation of these lands as permanent conservation lands, to be held in trust and managed by the Arizona State Land Department to protect Arizona's quality of life for future generations." Extensive portions of ranches flanking both the western and eastern slopes of the MSPRV are part of the proposed ASLD conservation lands.[69]
- Though many of the MSPRV ranches are not part of protected status lands, their long history of conservation work cannot be ignored or diminished. Some of the local ranching families go back generations to the late 1800's, and have been instrumental in keeping open spaces in the valley. In recent decades, they have been increasingly involved in local conservation work.

  To assist in that work, the Redington Natural Resource Conservation District was established in 1947 to offer technical assistance for area ranchers and other landowners in

[67] http://www.nature.org/wherewework/northamerica/states/arizona/press/press4031.html

[68] Letter of support re San Pedro River Ecosystem Forest Legacy project, Coronado National Forest, Supervisor's Office, Jeanine Derby, Forest Supervisor, 300 W. Congress St., Tucson, AZ 85701.

[69] http://www.land.state.az.us/news/2009/062609_reform.htm

conservation related projects. The District's area of conservation influence covers some 285,000 acres in this part of the Valley.

The Nature Conservancy in their scoping comments to the BLM with regard to the SunZia transmission project summarized well a good deal of these conservation efforts:

> *Over the last three decades The Nature Conservancy and many other agencies and organizations have been working steadily to protect the Lower San Pedro Basin. This area has become a focal point for conservation and mitigation investments because of the opportunity to protect and restore a relatively undisturbed river system, cross-valley wildlife movement, and ecological processes such as fire that maintain ecosystem health.*
>
> *Partners in this effort include the Bureau of Land Management, Bureau of Reclamation, Salt River Project, Arizona Game and Fish Department, Pima County and a number of private landowners. The Resolution Copper Company has offered to protect additional lands in the valley through its proposed land exchange for a mine site in Superior. Together, these partners have protected close to 40,000 acres and invested over $25 million in acquisition of conservation lands and appurtenant water rights. Close to one third of the lower river corridor is now in protected status, and stream flow and habitat conditions are improving.*[70]

Now these many efforts are beginning to coalesce into a locally generated conservation vision, which may eventually include Valley wide cooperative management status between area landowners, conservation groups and state and federal agencies that would put an end to further utility development here, would actively conserve its myriad environmental and cultural resources and would furthermore encourage not merely the possibility, but the viability, of traditional land uses such as ranching and outdoor recreation.[71]

C. <u>Ecoregional Analyses:</u>

In transitioning from general attributes of the Middle SPRV to a more biological focus, perhaps the place to begin is with Brown and Lowe's iconic map of "The Biotic Communities of the Southwest."[72] The map goes beyond political and bureaucratic boundaries to catalogue biotic baselines, largely defined by the temperate deserts of the Southwest – Mohave, Sonoran and Chihuahuan. It extends to the westward edges of the Mohave including Baja California, eastward to the edge of the Texas panhandle and the eastern edge of the Mexican state of Chihuahua, north to the Utah state line, and to the southern tip of the Mexican state of Sonora.

Focusing on biologic rather than political divisions allows one to see that the Middle San Pedro River Valley's position is in the precise middle of this map of the Southwest (halved and quartered the 4'x6' wall map folds at the juncture of Hot Springs Canyon and the San Pedro River). That is not just serendipitous, for the MSPRV partakes of every one of the basic biotic

[70] TNC Scoping comments, July 13, 2009.

[71] David Omick, Cascabel Working Group presentation at SunZia Project meeting in Cascabel, January 13, 2010.

[72] Brown, D.E. and C.H. Lowe, "Biotic Communities of the Southwest (map at scale 1:1,000,000)," U.S.D.A. Forest Service General Technical Report RM-78 (1980).

formations in the Southwest and draws from four ecoregions that roughly correspond to the cardinal directions from the center of that mapping.

Using Lowe's descriptors and catalog numbers, in the MSPRV the Forest Formation is represented by the Petran Montane Conifer Forest (122.3) in the mountain ranges' highest portions. The Woodland Formation is represented by the Madrean Evergreen Woodland (123.3) flanking those peaks. The Scrub Formation is represented by the Interior Chaparral (133.3) in a lower transition zone. The Grassland Formation is represented by the Semidesert Grassland (143.1) in the upland slopes. The Desertscrub Formation is represented by the Chihuahuan Desertscrub in the southern valley basin (153.2). The Desertscrub Formation is also represented by the Arizona Upland Subdivision of the Sonoran Desertscrub (154.12) in the northern valley basin.

Those biotic formations or biomes "are not provinces *per se*, which are biotic, faunistic, or floristic in structure, function or other aspects."[73] Nonetheless, they do either roughly correlate to or fit within four great terrestrial ecoregions that merge in the Middle San Pedro River Valley, one of the few areas in North America where such convergence occurs, and is in large part explanatory of the great biodiversity resident here.

The World Wildlife Fund (WWF) distinguishes those ecoregions as Sonoran Desert (western), Chihuahuan Desert (eastern) Madrean (southern) and Arizona-New Mexico Mountains (northern). This region is in fact so complex (mirroring the complexity of the underlying geologic strata) that there is some variance as to how biologists conceive them. The Nature Conservancy (TNC), for example, due perhaps to the needs of their more local conservation concerns and analyses, amalgamates some of those ecoregions together into what they call the Apache Highlands. The WWF divisions, they explain, are more suited for large scale framing.[74] That noted, there is no variance in the extraordinary diversity referenced, and data from both analyses are relevant.

1. Ecoregional Science

Modern conservation biology and natural resource management has shifted more and more toward an "Ecoregional" or "Ecosystem" approach.[75] The reasons for this are several. Though there is clearly intra-species competition in the Darwinian sense, the relatively new science of ecology has come to better understand the interconnection and interdependence of species that make up entire biological systems. Much of this theory is derived from island biogeography which has demonstrated that over time larger intact and unfragmented areas support more

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[73] David E. Brown, Editor, "Biotic Communities of the American Southwest – United Sates and Mexico," in *Desert Plants* (Vol. 4, No's 1-4, 1982), p. 9.

[74] "Some biogeographers also consider them [Sky Islands] distinct from the nearby major mountain systems (i.e., Sierra Madre Occidental, Arizona Mountains, and Colorado Plateau), as they combine elements from both major systems, and refer to the biogeographic region as Apachean. However, at a continental scale, we interpret the Sky Islands as primarily Madrean in character…." Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), P.259.

[75] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz., An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (2000), p. 46.

species, whereas fragmentation reduces species diversity and viability.[76] "Large blocks of habitat generally contain larger and more stable species populations, and are uniquely able to support species with naturally low population densities or large home ranges (Noss and Cooperrider 1994)."[77]

Ecoregional science also helps conservationists and natural resource managers answer two critical questions, "'What are the most important places?' and 'How much conservation is enough?'"[78]

> *So called 'landscape-scale analyses' that evaluate and identify conservation priorities over large areas such as the Sonoran Desert Ecoregion are now widely regarded as a critical tool for arming conservation practitioners, policy makers, and the general public with the best scientific information upon which to implement conservation strategies.*[79]

Another important aspect of ecoregional science is the political implications. While the Endangered Species Act (ESA) is clearly an important and critical tool in conservation, its species specific focus, notwithstanding its recognition of habitat requirements, has at times been divisive. On the one hand conservation promoters may find private property concerns erupting over a particular species' habitat even while many ranches have been demonstrated to be some of the best conservers of species diversity, often due to their largely unfragmented extent.[80] On the other hand it can also encourage developers to pursue a strategy of legalistic maneuvering between islands of threatened and endangered species habitat while fragmenting the larger ecosystems upon which their long-term sustainability depends.

Ecoregional assessments have developed complex indices which avert these shortcomings, and conservation organizations have been some of the leaders in implementing this approach. The World Wildlife Federation (WWF) has "developed a detailed map of the terrestrial ecoregions of the world that is better suited to identify areas of outstanding biodiversity and representative communities (Noss 1992)."[81] Their conservation assessment of terrestrial ecoregions of North America was funded principally by the Commission for Environmental Cooperation under

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[76] MacArthur, R.H. and E.O. Wilson, The Theory of Island Biogeography, (Princeton University Press, Princeton, NJ, 1967).

[77] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 19.

[78] Conservation Priorities in the Apache Highlands Ecoregion, Dale Turner, Rob Marshall, Carolyn Enquist, Anne Gondor, and Dave Gori, The Nature Conservancy, Tucson, AZ; Eduardo Lopez, Gonzalo Luna, Rafaela Paredes Aguilar, and Chris Watts, Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora, Reyes y Aguascalientes, Sonora, Mexico; Sabra Schwartz, Arizona Game and Fish Department, Phoenix, AZ http://www.fs.fed.us/rm/pubs/rmrs_p036/rmrs_p036_375_379.pdf

[79] Marshall, et al., op. cit., p. 2.

[80] Cf. Quivira Coalition publications.

[81] David M. Olson, Eric Dinerstein, Eric D. Wikramana Yake , Neil D. Burgess, George V. N. Powell, Emma C. Underwood, Jennifer A. D'Amico, Illanga Itoua, Holly E. Strand, John C. Morrison, Colby J. Loucks, Thomas F. Allntt, Taylor H. Ricketts, Yumiko Kura, John F. Lamoreux, Wesley W. Wettengel, Prashant Hedao, and Kenneth R. Kassem, "Terrestrial Ecoregions of the World: A New Map of Life on Earth" in *BioScience*: Vol. 51, No. 11, (November 2001), p. 933.

NAFTA with the intent of providing a frame of reference for action to conserve biodiversity in North America.[82]

The WWF notes that their ecoregions "…are classified within a system familiar to all biologists — biogeographic realms and biomes. Ecoregions, representing distinct biotas (Dasmann 1973, 1974, Udvardy 1975), are nested within the biomes and realms and, together, these provide a framework for comparisons among units and the identification of representative habitats and species assemblages. …they are built on the foundations of classical biogeography and reflect extensive collaboration with over 1000 biogeographers, taxonomists, conservation biologists, and ecologists from around the world.[83] The biological distinctiveness of these ecoregions is based on broad measures of species richness, endemism, unusual ecological and evolutionary phenomena, and the global rarity of Major Habitat Types.[84]

Likewise, in 1996 The Nature Conservancy began developing ecoregion-based conservation assessments for the entire United States and portions of the 31 other countries in which the Conservancy works.[85] They avoid the weaknesses of a solely species specific approach by combining what they call Coarse Filter and Fine Filter indices:

> *The Coarse Filter is represented by ecological groups, or assemblages of plant species…. The Fine Filter is comprised of the species for which distributional and population data are better known and catalogued in databases such as those housed in Natural Heritage Programs. …The primary advantages of the Coarse Filter-Fine Filter approach include: (1) evaluates biodiversity at two different scales emphasizing the habitats in which the Ecoregion's species inhabit; (2) maximizes the number of species represented; (3) captures the variability in ecological conditions in which species occur; and (4) helps compensate for data gaps that result from uneven species inventory across the Ecoregion.*[86]

Indicative of TNC's approach, in their ecological analysis of the Sonoran Desert ecoregion they selected a total of 353 species from six taxonomic groups (amphibians/reptiles, birds, fish, invertebrates, mammals, plants) and also used 78 natural vegetation communities to represent a broader level of biological organization across the ecoregion.[87] Similarly in their Apache

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[82] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. xix.

[83] David M. Olson, Eric Dinerstein, Eric D. Wikramana Yake , Neil D. Burgess, George V. N. Powell, Emma C. Underwood, Jennifer A. D'Amico, Illanga Itoua, Holly E. Strand, John C. Morrison, Colby J. Loucks, Thomas F. Allntt, Taylor H. Ricketts, Yumiko Kura, John F. Lamoreux, Wesley W. Wettengel, Prashant Hedao, and Kenneth R. Kassem; "Terrestrial Ecoregions of the World: A New Map of Life on Earth" in *BioScience*: Vol.51 No. 11, (November 2001), p. 933.

[84] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 15.

[85] Dale Turner, Rob Marshall, Carolyn Enquist, Anne Gondor, and Dave Gori, The Nature Conservancy, Tucson, AZ; Eduardo Lopez, Gonzalo Luna, Rafaela Paredes Aguilar, and Chris Watts, Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora, Reyes y Aguascalientes, Sonora, Mexico; Sabra Schwartz, Arizona Game and Fish Department, Phoenix, AZ; Conservation Priorities in the Apache Highlands Ecoregion. http://www.fs.fed.us/rm/pubs/rmrs_p036/rmrs_p036_375_379.pdf

[86] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz, An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (2000), p. 12.

[87] Ibid., p. i.

Highlands ecoregional analysis, all native vegetation community types were mapped similar to Brown and Lowe and all of the native terrestrial ecosystems were considered as coarse-filter conservation targets, while 223 species were chosen for fine-filter conservation targets.[88] The end result of their analyses is that, "Landscape-scale Conservation Sites capture entire ecosystems, such as a complex of mountain ranges and valleys, where ecological processes remain largely intact."[89]

However, it is not only conservation organizations that have adopted an ecoregional approach. Federal agencies as well are yielding to the advantages of ecoregional science. "In 1993, as part of the Forest Service's National Hierarchical Framework of Ecological Units (ECOMAP 1993), ecoregions were adopted for use in ecosystem management. They will also be used in the proposed National Interagency Ecoregion-Based Ecological Assessments."[90]

Indeed, that approach was evident in the San Pedro River Ecosystem Project's garnering the highest funding priority in the USFS's Forest Legacy Program. The Coronado National Forest Supervisor in her letter of support noted that "…one of the key management issues we have identified is habitat fragmentation."[91] The USFS Southwestern Regional Forester also noted that, "The importance of the San Pedro River ecosystem to the Southwest was validated by its selection as the number-one Forest Legacy Program project in the nation by the national review panel…. The funding of this project is an important addition to collaborative efforts to sustain and enhance the San Pedro River watershed."[92]

The Bureau of Land Management (BLM), which is coordinating SunZia's Southwest Transmission Project, is also lately coming on board with an ecoregional strategy. They admit that their historic local, field office approach to land use policies has been inadequate.

> *Unfortunately, the ecological consequences of some best decisions made for a local area can accumulate at intermediate landscape scales where they may contribute to ecosystem change caused by invasive species, altered wildland fire cycles, climate change, urban and industrial development, and other agents. With current ecological understanding and the availability of new tools, the BLM is beginning to systematically identify landscape-scale, ecologically-based conservation and restoration needs and place them on an equal footing with other land management and resource use objectives.*

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[88] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p 10.

[89] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz, An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (2000), pp. i-ii.

[90] http://www.fs.fed.us/land/ecosysmgmt/

[91] Letter of support re San Pedro River Ecosystem Forest Legacy project, Coronado National Forest, Supervisor's Office, Jeanine Derby, Forest Supervisor.

[92] Corbin Newman, regional forester, Southwestern Region of the U.S. Forest Service, in http://www.nature.org/wherewework/northamerica/states/arizona/press/press4031.html

> *To better address these issues, the BLM has decided to use an ecoregional approach that will allow the agency to more efficiently and effectively address broad, landscape-scale issues across administrative boundaries.*[93]

In November of 2009 the BLM announced a "Coordination of Rapid Ecoregional Assessments" with The Nature Conservancy (TNC) and the California Department of Fish and Game (CDFG).[94] Rapid ecoregional assessments are collaborative scientist-manager exercises in assembling and synthesizing targeted information about an ecoregion.[95]

These are possibly less exhaustive but equally focused assessments as those performed by TNC in the Sonoran Desert and Apache Highlands ecoregions. The purposes and methodology are very similar. They propose that a multi-disciplinary, interagency core assessment team of scientists, ecologists, planners, etc. from BLM, CDFG, and TNC be established. Then "BLM will assess the resource values on native species of concern, and regionally important terrestrial and aquatic ecological features and the change agents of invasive species, wild land fire, development (including renewable energy), and climate change."[96] Based upon the assessment findings and other relevant considerations, BLM managers will formulate "Ecoregional Management Strategies" and identify responsive regional actions that should be taken.[97]

The coordination with TNC is hopeful and clearly recognizes their experience and expertise in ecoregional assessments. However, though the BLM is initiating rapid ecoregional assessments throughout the Southwest, their initial project is the Mojave Desert Assessment which is not slated to be completed until January 2011. The Sonoran Desert assessment will have similar goals but is still in its initiation phase. This is unfortunate since a key purpose of the assessments is to "attempt to answer high-level questions related to the appropriate siting of renewable energy and conservation areas" and could clearly bear on the issue at hand.[98] At the least, hopefully BLM's coordination with TNC and agreement to undertake an ecoregional approach can lead them to heed the exhaustive ecoregional assessments already undertaken by TNC and WWF for the areas being reviewed here.

What is an ecoregion? A classic definition by cited by TNC is R. G. Bailey's: "Ecoregions are large areas of land and water that share similar climate, physiography, and biotic communities."[99] The WWF's definition is slightly more elaborated: "An ecoregion is defined as a large area of land or water that contains a geographically distinct assemblage of natural communities that (a) share a large majority of their species and ecological dynamics; (b) share similar environmental conditions, and; (c) interact ecologically in ways that are critical for their long-term persistence."[100]

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[93] http://www.dmg.gov/documents/BR_Ecoregional_Strategy_BLM_102809.pdf
[94] http://www.dmg.gov/documents/BR_Coordntn_of_Rpd_Ecrgnl_Assssmnts_DMG_111909.pdf
[95] http://www.dmg.gov/documents/BR_Ecoregional_Strategy_BLM_102809.pdf
[96] http://www.dmg.gov/documents/BR_Coordntn_of_Rpd_Ecrgnl_Assssmnts_DMG_111909.pdf
[97] http://www.dmg.gov/documents/BR_Ecoregional_Strategy_BLM_102809.pdf
[98] http://www.dmg.gov/documents/BR_Coordntn_of_Rpd_Ecrgnl_Assssmnts_DMG_111909.pdf
[99] Marshall, et al., op. cit., p. 21.
[100] David M. Olson, Eric Dinerstein, Eric D. Wikramana Yake , Neil D. Burgess, George V. N. Powell, Emma C. Underwood, Jennifer A. D'Amico, Illanga Itoua, Holly E. Strand, John C. Morrison, Colby J. Loucks, Thomas F. Allntt, Taylor H. Ricketts, Yumiko Kura, John F. Lamoreux, Wesley W. Wettengel, Prashant Hedao, and Kenneth R. Kassem, "Terrestrial Ecoregions of the World: A New Map of Life on Earth" in *BioScience*: Vol. 51, No. 11, (November 2001), p. 933.

Implicit in that definition is that ecoregions differ from one another in a large majority of their assemblage of species and natural communities. One of the earliest biogeographers determined the differentiation of species between ecoregions to be around 80%.[101] What follows here is a brief overview of the five distinctive WWF terrestrial and freshwater ecoregions that intersect and merge in the MSPRV and the biodiversity that implies. The results of TNC's more detailed ecoregional analyses as they pertain to the MSPRV will be integrated into the review.

2. Sonoran Desert Ecoregion

The Sonoran Desert ecoregion reaches near its easternmost extent in the Lower SPRV. Brown and Lowe map its terminus in the valley at or near the conjunction of Hot Springs and Paige Canyons, and extending northward from there across the basin. It extends well up into the foothills with its signature species saguaro (*Carnegiea gigantea)* creating impressive stands at elevations nearing 4,000 feet, often rivaling densities of Saguaro National Park.

Here follow some of the generic characteristics of the Sonoran Desert ecoregion in which the MSPRV partakes.

- The Sonoran Desert has the greatest diversity of vegetative growth of any desert in the world. (Nabham & Plotkin 1994).[102]
- The Ecoregion harbors a high proportion of endemic plants, reptiles and fish.[103]
- Over 2500 pollinators are known (invertebrates, birds, and bats) including the highest known diversity of bee species in the world (Phillips and Wentworth Comus 2000).[104]
- More than 500 bird species migrate through, breed, or permanently reside in the Ecoregion – nearly two-thirds of all species that occur in northern Mexico, the United States and Canada.[105]
- The Sonoran desert, together with its eastern neighbor the Chihuahuan desert, is the richest area in the United States for birds, particularly hummingbirds.[106]
- The Sonoran Desert is ranked fourth for mammal richness among North American terrestrial ecoregions with 82 species.[107]
- The Sonoran Desert's riverine, aquatic, and riparian resources hold a disproportionate amount of the Ecoregion's biodiversity.[108] Riparian woodlands in the region are now one of the rarest habitat types in North America.[109]

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[101] Udvardy, M.D.F., "A Classification of the Biogeographical Provinces of the World," Morges (Switzerland: International Union of Conservation of Nature and Natural Resources, 1975), IUCN Occasional Paper no.18.

[102] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1310_full.html

[103] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion. p. 2.

[104] Ibid.

[105] Ibid.

[106] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1310_full.html

[107] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), pp. 128-30.

- The Sonoran Desert is ranked by the WWF as one of its Global 200 terrestrial ecoregions.[110] It is among eleven ecoregions in North America "that offer rare opportunities to conserve globally outstanding biodiversity in relatively intact landscapes."[111]

Does the MSPRV offer such a rare opportunity to conserve globally outstanding biodiversity in a relatively intact landscape?

In The Nature Conservancy's ecological analysis of the Sonoran Desert Ecoregion, 100 large landscape were identified across the Ecoregion as a network of Conservation Sites where conservation opportunities should be pursued.[112] The "San Pedro River/Aravaipa Creek Conservation Site" was listed fourth out of those 100. All "Conservation Target Taxa" were represented, and it was in the top three of bird and fish targets.[113]

Ecoregional assessments, as the BLM notes, have the end purpose of formulating "Ecoregional Management Strategies" and identifying responsive regional actions that should be taken. It is likewise TNC's intent that "…a Conservation Site represents a focal point for developing public awareness and implementing conservation actions so that the Conservation Targets identified in this exercise, as well as all of the other species for which our selected targets serve as a surrogate, remain viable on the landscape."[114]

In their "Summary of Status and Priority Inventory Needs for Ecological Groups in the Sonoran Desert Ecoregion," the urgency for conservation action for the "Desert Riparian Woodland" is rated as "High." "Given the high concentration of native plants and animals dependent on these habitats extensive restoration is critical."[115] There are several of these Mixed Broadleaf Deciduous Riparian Forests over or through which the projected Sun Zia routes pass, for example Edgar Canyon, Buehman Canyon and Bullock Canyon.[116] For the "Semi-Desert Grassland", across which all of the MSPRV routes project to pass, again the urgency for action is rated as "High."[117] And for the "Streams, Seeps and Sinks", which are scattered through this Conservation Site, again the urgency for action is "High."

The WWF concurs in their "Priority Activities to Enhance Biodiversity Conservation" for the need to establish protection for habitat along the lower San Pedro River.[118] If the BLM was ready to coordinate with TNC on an ecoregional assessment in the Sonoran Desert as they are in the Mojave, it is difficult to see how they could not concur as well.

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[108] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (2000), .p. 34.

[109] Taylor Ricketts, op. cit., p. 338.

[110] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), p. 202.

[111] Taylor Ricketts, op. cit., p. 98.

[112] Marshall, R.M., op. cit., p. i.

[113] Ibid., pp. 29-30.

[114] Ibid., p. 38.

[115] Ibid., Appendix 11.

[116] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 25.

[117] Marshall, R.M., op. cit., Appendix 11.

[118] Taylor Ricketts, op. cit., p. 340.

3. Chihuahuan Desert Ecoregion

The Chihuahuan Desert ecoregion enters the MSPRV from the south and east until it transitions to the Sonoran Desert ecoregion near the conjunction of Hot Springs and Paige Canyons. Following David Brown, the semidesert grasslands will largely be considered as part of the Chihuahuan ecoregion. "Semidesert grassland adjoins and largely surrounds the Chihuahuan desert, and with the possible exception of some areas in west central Arizona, it is largely a *Chihuahuan semidesert grassland*." [119] Where further north in the SPRV one would see forests of saguaros, here one is likely to see equally dense stands of Palmer's Agave (*Agave palmeri*).

Here follow some of the generic characteristics of the Sonoran Desert ecoregion in which the MSPRV partakes.

- "The Chihuahuan desert is one of the three most biologically rich and diverse desert ecoregions in the world, rivaled only by the Great Sandy Tanmi Desert of Australia and the Namib-Karoo of southern Africa (Olson and Dinerstein 1998)."[120]
- Approximately 3,500 plant species live in this desert.[121]
- Estimates of endemism state that there could be up to 1000 endemic species.[122]
- The Chihuahuan desert, together with its western neighbor the Sonoran desert, is the richest area in the United States for birds, particularly hummingbirds.[123] It is first in bird richness of North American ecoregions with 279 species.[124]
- It is first in mammal richness of North American ecoregions with 109 species.[125]
- "Reptiles show a maximum for species richness in the Chihuahuan Desert (103 species)…. Only the Great Sandy Desert of Australia supports a richer desert reptile fauna than the Chihuahuan Desert (Cogger 1992; Flannery 1994)."[126]
- The Chihuahuan Desert ranks globally outstanding in cactus richness (Olson and Dinerstein, 1998).[127] It features over 100 species of cacti.[128]
- The Chihuahuan also ranks highest among North American ecoregions in butterfly richness.[129] It features 250 species of butterflies.[130]
- The Chihuahuan Desert is ranked by the WWF as one of its Global 200 terrestrial ecoregions.[131] It is ranked as a "Class I" ecoregion, i.e., "Globally outstanding ecoregions requiring immediate protection of remaining habitat and extensive restoration."[132]

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[119] David E. Brown, Editor, "Biotic Communities of the American Southwest – United Sates and Mexico," in *Desert Plants* (Vol. 4, No's 1-4, 1982) p. 123.
[120] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1303_full.html
[121] Ibid.
[122] Ibid.
[123] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1310_full.html
[124] Taylor Ricketts, op. cit., pp. 128-30.
[125] Ibid.
[126] Ibid., p. 47.
[127] Ibid., p. 93.
[128] Ibid., p. 341.
[129] Ibid., pp. 128-30.
[130] Ibid., p. 341.

The routes proposed by SunZia run through vast areas of this Chihuahuan semidesert grassland and across Desert Riparian Woodlands. Whatever the logistic advantages, it seems clear that these routes are seen as having the advantage of generally not partaking in the protected status of either the mountains or the San Pedro River corridor, being mainly state trust lands. But ecologists warn us not to relegate these "desert seas" or grassland basins between the "sky islands" to second class status, for the change in major biotic communities across the landscape gradients is critical to the biodiversity and evolution of the region.[133] Furthermore, besides serving transitional connectivity between these upland and riverine communities, the grasslands are critical in their own right and diminishing in extent.

> *Approximately 43% of the region, historically, was comprised of grasslands (Gori, Enquist 2003). Today that figure has been reduced to 22%, highlighting the fact that the basins of this region have experienced the heaviest human impacts. Among those impacts is the absence of fire, which has contributed to an increase in shrubs at the expense of grasses. …the greatest areas of grassland with restoration potential are found on federal and state lands.*[134]

Cutting through these semidesert grasslands, and again connecting the mountains and the San Pedro River, are tributary stream systems, some of the same "Desert Riparian Woodland" that passes through portions of the Sonoran Desert ecoregion. "[T]he riparian communities along these streams provide migratory birds and pollinating insects and bats with critical trans-hemispheric travel corridors. …It is difficult to overstate the importance of Arizona's freshwater systems. The status of these resources – their quantity, quality, distribution, and the biological diversity they harbor, is the single most important issue to both the sustainability of biodiversity and human communities in Arizona."[135]

Were BLM to conduct a "Rapid Ecoregional Assessment" of this area in cooperation with TNC as they are proposing to do in the whole Southwest, they might be compelled to agree with TNC's findings. Using criteria similar to the Sonoran Ecoregional analysis, there are actually four out of 91 Conservation Sites that were selected in the MSPRV that are of critical ecoregional importance. All four are transgressed by proposed SunZia routes:[136]

- The Winchester Mountains, Allen Flat Conservation Site (no. 53), through which a significant portion of the MSPRV SunZia routes pass, is ranked as the number 9 conservation priority in the ecoregion, and the number 6 priority for conservation areas with aquatic systems.
- The Buehman Canyon/Bingham Cienega Conservation Site (no. 48) is the number 54 conservation priority in the ecoregion, and the number 29 priority for conservation areas with aquatic systems.

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[131] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), p. 203.
[132] Taylor Ricketts, op. cit., p. 83.
[133] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p. 2.
[134] Ibid., p. 66.
[135] Ibid., p. 6.
[136] Ibid., pp. 46-9.

- The Kielberg Canyon Conservation Site (no. 46) is the number 64 conservation priority in the ecoregion, and the number 37 priority for conservation areas with aquatic systems.
- The Aravaipa Watershed Conservation Site (no. 7) deserves separate and wholesale attention in its own right as another potential SunZia route. It is the number 12 conservation priority in the ecoregion, and the number 7 priority for conservation areas with aquatic systems.

Again, a major point of these assessments is to prescribe policy and management priorities. The Chihuahuan ecoregion received the WWF's highest priority in North America, and thus it would certainly be true here that "…some ecoregions support such outstanding biological diversity and face such severe threats that they deserve immediate and proportionally greater attention from conservationists."[137] TNC's more local assessment recommendation is clear and pointed, "For private and state trust lands… directing land subdivision and development away from the conservation areas identified in this assessment."[138]

Also, in recognition of the important role these grassland and riparian areas play as transitions and corridors between mountains and river, particularly in a time of climate change, the recommendations are: "(1) Reduce edge effects and promote landscape connectivity…; (2) …avoiding fragmentation of natural areas…; (3) restore or maintain natural fire regimes; (4) ensure the persistence of genetic variation within species; and (5) attempt to minimize exogenous threats to vulnerable habitats (Halpin 1997, Noss 2001, Hannah et al. 2002).[139] The import for SunZia's trans-valley routes that pass substantially through these Conservation Sites could hardly be greater.

4. Madrean Ecoregion

The Madrean Sky Islands form a transition between the southern end of the Rocky Mountain cordillera and the northern end of Mexico's Sierra Madre Occidental. They can be considered the northern extension of the Sierra Madre Occidental.[140]

> *The biodiversity of the ecoregion is diverse and complex since it harbors both subtropical and temperate flora and fauna…. The mixing of subtropical and temperate plants and animals also creates unusual ecological interactions and assemblages. In general, the lower elevations of the Sky Islands include many subtropical species at their northernmost limit, while higher elevations support many montane species at their southern limit (McLaughlin, 1995).*[141]

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[137] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 83.

[138] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p. 66.

[139] Ibid., pp. 66-7.

[140] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 258.

[141] Ibid.

Brown classifies this area as "Madrean Evergreen Woodland."[142] In the MSPRV, at lower elevations the woodland is typically open and often dominated by Emory Oak (*Quercus emoryi*) before transitioning to Madrean pines at higher elevations. A proposed westernmost SunZia route may travel through portions of this ecoregion. Whether or not that is the case, many Madrean fauna species cross the valley, and the "Mixed Broadleaf Deciduous Riparian Forests" of the Sonoran and Chihuahuan zones intermingle up the canyons. The Sky Islands frame the MSPRV, and the watershed is an ecological unit.

Here follow some of the generic characteristics of the Madrean Sky Island ecoregion in which the MSPRV partakes. (Some of the characteristics attributed to TNC's Apache Highlands ecoregion include portions of other ecoregions considered here.)

- "The mountains of the Apache Highlands are unique on Earth, for they represent the only sky island complex that extends from the sub-tropical to the temperate latitudes (Warshall 1995). The result of these geographic and geologic phenomena is an unusually rich fauna and flora…."[143]
- More than 4000 vascular plant species have been identified, as have 110 mammals (Felger et al. 1997, Simpson 1964).[144]
- At least 468 bird species have been verified in southeastern Arizona during the past 50 years, along with more than 240 butterfly species and 580 species of wood-rotting fungi (Edison et al. 1995, Bailowitz and Brock 1991, Gilbertson and Bigelow 1998).[145]
- The Madrean Sky Islands Montane Forests have produced a relatively high number of endemic species.[146]
- Relatively intact, lower-elevation riparian woodland is now extremely rare throughout the region.[147]
- More than 75 reptile species, making it one of the most diverse reptile regions in North America.[148]
- More than 190 snail species, of which 60 are endemic, are found only in this ecoregion.[149]
- The Gila River Basin, a significant part of the ecoregion, contains one of the most unique fish assemblages in North America.[150]
- The Madrean ecoregion is ranked by the WWF as one of its Global 200 terrestrial ecoregions.[151] It is among eleven ecoregions in North America "that offer rare

[142] Brown, op. cit., p. 59.
[143] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p. 2.
[144] Ibid.
[145] Ibid.
[146] Taylor Ricketts, op. cit., p. 52.
[147] Ibid., p. 259.
[148] http://www.nature.org/wherewework/northamerica/states/arizona/preserves/art1942.html
[149] Ibid.
[150] Ibid.

> opportunities to conserve globally outstanding biodiversity in relatively intact landscapes."[152]

Again, because TNC's ecoregional assessment for the Apache Highlands does not distinguish ecoregions the same as the WWF, all of the Conservation Sites singled out as particularly important for protection in the MSPRV also range into the Madrean Sky Islands.

> *…Some conservation areas incorporate continuous landscapes from valley bottoms to mountain tops which, if fully protected, should buffer conservation targets against the impacts of climate-induced changes in habitat. Other areas form continuous mountain-to-mountain spans that are needed to maintain habitat connectivity for wide-ranging, forest-dwelling species such as black bear.*[153]

Those continuous landscapes include the Winchester Mountains, Allen Flat Conservation Site, The Buehman Canyon/Bingham Cienega Conservation Site, the Kielberg Canyon Conservation Site and the Aravaipa Watershed Conservation Site referenced in the Chihuahuan Desert ecoregion section above.

Likewise, the assessment recommendations would also apply: "(1) Reduce edge effects and promote landscape connectivity…; (2) …avoiding fragmentation of natural areas…; (3) restore or maintain natural fire regimes; (4) ensure the persistence of genetic variation within species; and (5) attempt to minimize exogenous threats to vulnerable habitats (Halpin 1997, Noss 2001, Hannah et al. 2002).[154] The WWF recommendation for the area is similar: "Designate more of the Sky Islands as wilderness and identify or restore functional linkage habitat among the various ranges."[155]

5. Arizona Mountains Ecoregion

The Arizona Mountains ecoregion occurs in the MSPRV in areas corresponding to Brown and Lowe's Petran Montane Conifer Forest in the higher elevations of the Sky Islands. This ecoregion corresponds to Omernik's (1995) ecoregion #23 (Arizona/New Mexico Mountains) and there is a fair degree of overlap with Bailey's (1995:64) M313, Arizona-New Mexico Mountains Semi-Desert-Open Woodland-Coniferous Forest-Alpine Meadow Province.[156] The WWF identifies portions of the Galiuro Mountains as representative.[157] Ponderosa Pine (*Pinus ponderosa*) forests often dominate. "Vegetation zones in this ecoregion resemble the Rocky Mountain Life Zones but at higher elevations (Bailey 1995, 64)."[158]

This ecoregion is also the southern extent of spruce-fir forests and the northern extent of many Mexican wildlife species, including tropical birds and reptiles. "In general, this ecoregion was

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[151] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), p. 202.
[152] Taylor Ricketts, op. cit., p. 98.
[153] http://www.fs.fed.us/rm/pubs/rmrs_p036/rmrs_p036_375_379.pdf
[154] Ibid., pp. 66-7.
[155] Taylor Ricketts, op. cit., p. 260.
[156] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na0503_full.html
[157] Ibid.
[158] Taylor Ricketts, op. cit., p. 256.

considered regionally outstanding because of its relatively high level of species richness (2,817 species) and endemism (132 species)."[159]

The Arizona Mountains were also selected by the WWF as one of the Global 200, i.e. one of 142 of the 867 worldwide terrestrial ecoregions, and only one of eleven in North America. This ecoregion was elevated to Global 200 status because of its extraordinary ecological phenomena, containing extensive intact habitats and large vertebrate assemblages.[160]

Among the management recommendations were several areas "as potential corridors for minimizing fragmentation and insularization effects, including connecting the Gila complex with the Sky Islands to the south for future wolf movements; and connecting riverine habitat through stream buffers designed to restore degraded fish populations."[161] A recommended priority activity to enhance biodiversity conservation is to protect and restore degraded native fish populations through habitat restoration in degraded riparian areas.[162]

6. Gila Freshwater Ecoregion

To this point only terrestrial ecosystems in the MSPRV have been reviewed, but similar analyses have been performed for freshwater ecosystems. Unfortunately North America's freshwater environments are among the most threatened.[163] Thus, with nearly every freshwater system suffering from some degree of degradation, there is an urgent need to establish priorities for conservationists and land managers. The World Wildlife Fund again conducted an extensive conservation assessment with support from the U.S. EPA "…as an initial step in identifying those areas where protective and restorative measures should be implemented first."[164]

The Gila freshwater ecoregion covers most of southern Arizona and part of southwestern New Mexico and extends into northern Sonora in Mexico. The major watershed in this ecoregion is that of the Gila River, a tributary to the lower Colorado River. "As many as seven fish species that are not found in the Colorado ecoregion's waters can be considered endemic to the Gila ecoregion; given a total of nineteen native species found in the Gila, this is an impressive number of endemics."[165] The Gila Ecoregion's Major Habitat Type is "Xeric-Region Rivers, Lakes, and Springs." Its Biological Distinctiveness is "Continentally Outstanding", the class just below "Globally Outstanding." Its Conservation Status is "Critical" i.e. the most severely threatened.[166]

Of 76 freshwater ecoregions in North America, 41 are "Continentally Outstanding," and only 5 of those are "Critical."[167] The term "critical" means that "The remaining intact habitat is restricted to isolated areas or stream segments that have low probabilities of persistence over the

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[159] Ibid.

[160] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), pp. 207-8.

[161] Taylor Ricketts, op. cit., p. 257.

[162] Ibid., p. 258.

[163] Robin Abell, David M. Olson, Eric Dinerstein, Patrick T. Hurley, James T. Diggs, William Eichbaum, Steven Walters, Wesley Wettengel, Tom Allnuff, Cobly J. Loucks and Prashant Hedao, Freshwater Ecoregions of North America: A Conservation Assessment (Washington, D.C.: Island Press, 2000), p. 1.

[164] Ibid., p. 2.

[165] Ibid., p. 183.

[166] Ibid.

[167] Ibid., p. 88.

next 5-10 years without immediate or continuing protection and restoration."[168] The reason for that assessment is that the expanding urbanization of the Phoenix-Tucson area is seen as a major threat by conservationists to the increasingly rare natural constituents of the San Pedro River and Aravaipa Creek.[169] As Tom Collazo, of the Arizona Chapter of The Nature Conservancy notes:

> *…the point that I wanted to make about the Sun Corridor and the million people on the other side of the Valley is that …. all this energy is coming to support the projected future population growth of the Sun Corridor: basically the area from Prescott down to the Mexican border. We have to make some choices as to what parts of the Sun Valley we are going to set aside for conservation and where we're going to choose to have growth occur. And our opportunities to protect outstanding natural values plus wildlife as well as recreation and culture, our best opportunity here is in the San Pedro Valley.*
>
> *Infrastructure projects, I think this a good point to be made as well, should follow a hierarchy of avoid, minimize, and mitigate. And I think we're still at the point where there are very strong arguments that say that San Pedro Valley is definitely in a critical area.*[170]

The data supports that assessment. The WWF gathered taxonomic and regional experts to undertake a preliminary identification of sites across North America where intervention – from dam removal to increased protection – would serve as a first step toward achieving conservation targets. Sites were selected on the presence of important biodiversity targets. Priority sites were selected, for example, because they are places where rare habitats remain intact or where important species assemblages could be restored.[171]

The San Pedro River and Aravaipa Creek, tributary to the Gila, is Site Number 102 of 146 sites listed in the WWF ecoregional assessment as "Important Sites for the Conservation of Freshwater Biodiversity in North America."[172] This is not surprising for a free-flowing river within a largely intact and unfragmented landscape. In the United States, only 2 percent of the nation's 5.1 million kilometers of rivers and streams remain free flowing and undeveloped![173]

As the WWF notes however, "Continental-scale analyses can guide us to the most distinctive and threatened freshwater ecoregions, but conservation requires integrated actions at the scale of sites as well as whole ecoregions. For this we need to understand how biodiversity features are distributed within ecoregions and how individual sites, habitats, and assemblages fit into a broader conservation strategy. Ecoregion-based conservation (ERBC) approaches may be a useful way to begin to preserve or restore the distinct biological features highlighted in this study."[174]

In that regard we are fortunate, for The Nature Conservancy has already performed assessments at the scale of sites for ecoregions inclusive of the MSPRV. In their ecological analysis of the Sonoran Desert Ecoregion, the "San Pedro River/Aravaipa Creek Conservation Site" was listed

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[168] Ibid., p. 20.
[169] Taylor Ricketts, op. cit., p. 339.
[170] Tom Collazo, AZ TNC Director, in a January 13, 2010 address in Cascabel, AZ re the SunZia project.
[171] Ibid., pp. 109-10.
[172] Ibid., p. 111.
[173] Ibid., p. 1.
[174] Ibid., p. 109.

fourth out of the 100 Conservation Sites identified.[175] In their analysis of the Apache Highlands, the "Aravaipa Watershed Conservation Site" is the number 12 conservation priority in the ecoregion, and the number 7 priority for conservation areas with aquatic systems. The "Winchester Mountains, Allen Flat Conservation Site" is ranked as the number 9 conservation priority in the ecoregion, and the number 6 priority for conservation areas with aquatic systems. The "Buehman Canyon/Bingham Cienega Conservation Site" is the number 54 conservation priority in the ecoregion, and the number 29 priority for conservation areas with aquatic systems. The "Kielberg Canyon Conservation Site" is the number 64 conservation priority in the ecoregion, and the number 37 priority for conservation areas with aquatic systems.[176] TNC has integrated the terrestrial and freshwater data into their ecoregional assessments, and thus the distinction of the higher priority when aquatic systems are considered.

In discerning "Ecoregional Management Strategies" and identifying regional actions that should be taken from these ecoregional assessments, the recommendations for aquatic systems are particularly instructive.

> *Freshwater ecoregions differ from their terrestrial counterparts in two important and related ways. First, because of the connectedness of freshwater habitats, spatial and functional linkages across large distances are strong, with upstream activities manifested in downstream effects. Second, conservation of a given freshwater site must nearly always occur at the watershed scale.*[177]

Among the recommended "Priority Activities to Enhance Biodiversity Conservation" are:

- "Reclaim and manage entire subdrainages with multiple tributaries in which populations of imperiled species persist…."
- "Work with land management agencies to sufficiently regulate potentially damaging activities on lands under their jurisdiction."[178]

In sum, there are four "Globally Outstanding" terrestrial ecoregions that merge in the MSPRV to create an environment of exceptional biodiversity. Within its largely intact and unfragmented landscape, finer scale ecological assessments have discerned five large area conservation sites that are high priority for conservation with consistent recommendations against fragmentation. But in the final analysis, it is the San Pedro River subdrainage and its multiple tributaries in which populations of imperiled species persist that tie the MSPRV ecosystem together into a priority site that must be conserved at the watershed scale.

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[175] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion. pp. 29-30.

[176] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), pp. 46-9.

[177] Abel, op. cit., p. 87.

[178] Ibid., p. P. 184.

D. Connectivity:

Because four terrestrial ecoregions intersect in the MSPRV does not imply that it is a fractured ecosystem. There are of course no lines. "Ecoregional boundaries are approximations of what in reality are gradual shifts in ecological communities."[179] The ecoregions and their species intergrade to create exceptional biodiversity and integrate into a complex watershed-wide interconnected ecosystem.

Two elements of that connectivity have been noted above. First, the "desert seas" or Semidesert Grassland and Sonoran and Chihuahuan Desertscrub basins between the "sky islands" serve as transitional connections between the upland and riverine communities.[180] These biotic formations integrate together along the eastern and western slopes of the MSPRV and are the primary biomes through which the SunZia routes propose to pass. This element of connectivity was particularly noted in Pima County's acquisition of the A-7 Ranch.

> *Within the San Pedro River watershed, the middle basin landscape provides a practical opportunity to create protected connections between Sky Island mountain ranges that includes high elevation forest systems and diverse tributary canyons. Furthermore, these landscape connections provide linkage in a more extensive integral landscape that connects mountains, grasslands, and desert between the White Mountains and Mexico.*[181]

Second, as just reviewed, the aquatic systems represented by riparian habitat in the mountains and canyons directly connect those regions with the valley river. "[B]ecause of the connectedness of freshwater habitats, spatial and functional linkages across large distances are strong, with upstream activities manifested in downstream effects.[182]

Furthermore, the grasslands and the water systems are not independent units, but are themselves intimately connected. "Because rivers are products of their watersheds, riparian preserves can be affected by off-site activities that alter the hydrologic cycle (Pringle 2000, 2001).[183] There is a strong linkage between watersheds and the rivers that drain them. That is, "watershed conditions influence important hydrologic and geomorphic processes such as the volume of surface runoff and the amount of sediment delivered to streams."[184]

> *Watershed condition is largely determined by upland vegetation and soil type. When properly functioning, watersheds capture, store, and release moisture efficiently, providing high infiltration of precipitation into the soil, low movement of soil off-site, reduced flood peaks, high quality water, and reduced evaporation of water from the soil profile. Attaining proper function and desired plant*

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[179] Taylor Ricketts, op. cit., p. 3.

[180] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p. 2.

[181] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan (March 2000), p. 28.

[182] Abel, op. cit., p. 87.

[183] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), p. 371.

[184] Ibid., p. 352.

> *communities in the uplands contributes the physical and biological stability necessary to restore and maintain the aquatic and riparian ecosystem.*[185]
>
> *The condition of upland areas has a major influence on the condition of riparian areas. Properly functioning uplands with good ground cover of vegetation will increase infiltration and extend base flows while reducing runoff, soil erosion and peak flows.*[186]

Semidesert Grasslands, Desert Scrub and aquatic systems not only connect biotic systems, but faunistic systems as well. Wildlife corridors have received increasing attention among ecologists and conservationists in recent years.

> *If one overriding conclusion can be drawn from this global review of experience, it is that programmes that aim to conserve biodiversity at the landscape, ecosystem or ecoregion scale through interconnected and buffered systems of protected areas are moving into the mainstream of conservation practice. Moreover, based on the number of such programmes that have been initiated around the world in recent years, it would be fair to conclude that the increasingly broad application of the ecological network represents one of the most significant strategic developments in conservation planning over the past decade. A few simple figures are sufficient to demonstrate the magnitude of the shift: this review, although describing only a proportion of the initiatives that are currently underway, nevertheless traced about 200 ecological networks, corridors and comparable projects, plus 26 flyways, 482 Biosphere Reserves in 102 countries and 11 Bonn Convention agreements to conserve populations of migratory species. Bearing in mind that ecological networks and corridors only began to generate broad interest in the mid-1990s, this is a remarkable development. In fact, the changes that we are witnessing are more fundamental than simply the scale and the configuration of the territories that are managed for conservation purposes: they extend to the management objectives, competences, techniques and skills that are applied, the perceptions that underly the programmes, the involvement of local communities and the sources of funding. Ecological networks are above all a manifestation of an array of new insights into how conservation needs can effectively be addressed. Indeed, when viewed in a broader context these changes amount to a paradigm shift in protected-areas planning, as Phillips (2003) has elegantly demonstrated (see Table 7.1; see also Crofts, 2004).*[187]

The international consensus on wildlife corridors, linkages, or connectivity (whatever the chosen terminology) is well established. The CBD-UNEP global survey of wildlife linkages gives some of the background:

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[185] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office (May 1998), pp. 22-3.

[186] Ibid., p. 40.

[187] Graham Bennett and Kalemani Jo Mulongoy "Review of Experience with Ecological Networks, Corridors and Buffer Zones," (CBD Technical Series No. 23 [Convention on Biological Diversity, United Nations Environmental Programme], (March 2006).

> *…the ecological- network model evolved out of developments in ecological theory, primarily MacArthur and Wilson's equilibrium theory of island biogeography and metapopulation theory. The most important insight that followed from these theories was that habitat fragmentation increases the vulnerability of species populations by reducing the area of habitat available to local populations and limiting opportunities for dispersal, migration and genetic exchange. Interest therefore grew in developing conservation approaches that promoted ecological coherence at the landscape scale.*
>
> *Corridors in the sense of functional linkages between sites — are essentially devices to maintain or restore a degree of coherence in fragmented ecosystems. In principle, linking isolated patches of habitat can help increase the viability of local species populations in several ways:*
>
> *• by allowing individual animals access to a larger area of habitat — for example, to forage, to facilitate the dispersal of juveniles or to encourage the recolonization of "empty" habitat patches*
> *• by facilitating seasonal migration*
> *• by permitting genetic exchange with other local populations of the same species (although this generally requires only very occasional contact)*
> *• by offering opportunities for individuals to move away from a habitat that is degrading or from an area that is under threat (which may become increasingly important if climate change proves to have a serious impact on ecosystems)*
> *• by securing the integrity of physical environmental processes that are vital to the requirements of certain species (such as periodic flooding)*[188]

There has been some debate as to the effectiveness of wildlife corridors, as is the nature of science.

> *A further source of evidence on the effect of ecological networks is the experience that has been generated through corridor projects. Over the past decades, a substantial literature on connectivity has been generated and many projects have produced measurable results. Good examples are the Bow Valley corridor in Canada and various elephant corridors in Africa and Asia. Although the concept of corridors has generated a lively debate over many years, evidence from the increasing number of projects shows that appropriately designed corridors generally meet the expectations of how they will function in practice. Moreover, most of the documented examples of corridors suggest that establishing or maintaining the linkage was the most cost effective means of achieving the conservation objective. Indeed, in many cases the corridor was demonstrably the only feasible and practicable option to achieve the objective, while in other cases alternative courses of action — such as enlarging a protected area — would have involved intractable problems.*[189]

The CBD global review of ecological networks makes this conclusive assessment about biodiversity conservation and connectivity:

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[188] Ibid.
[189] Ibid.

> *The first lesson that can be drawn is that the programmes are explicitly attempting to establish and maintain the environmental conditions that are necessary to secure the long-term conservation of biodiversity rather than limiting themselves to the in-situ protection of valuable sites or threatened species populations. This involves, in the main, safeguarding assemblages of habitat large enough and of sufficient quality to support species populations, providing, where necessary, opportunities for movement between these reserves, buffering the network from potentially damaging human activities and promoting sustainable forms of land use in the contiguous landscapes. That this model applies to species that require access to very large areas or need to migrate across a landscape is obvious. …For many species, extensive linked and buffered systems of core areas are not immediately essential to their survival. …Even for many of these species, however, other factors become important for their long-term viability, such as the survival of a full complement of species within an ecosystem, the opportunity to move away from an existing area that comes under threat, and the occurrence of periodic natural disturbances that may require some form of linkage, such as flooding. Moreover, the island biogeography finding that the risk of extinction decreases as habitat size increases still holds for a large number of species.*[190]

This international embrace of the wildlife corridor and connectivity concept is no less evident in the U.S. and in Arizona. A case in point is the "Arizona Wildlife Linkages Assessment Document" conducted by Arizona Department of Transportation (ADOT) and Arizona Game and Fish Department (AGFD) with involvement by FHA, BLM, USFS, USFW, Northern Arizona University, Sky Island Alliance, and the Wildlands Project. That report recognizes, as does nearly all of the literature, that:

> *The most significant threats to Arizona's wildlife populations are habitat alteration, fragmentation, and loss. Some of the leading causes of these threats are development, transportation corridors and land conversion. Worldwide, 85% of endangered species are imperiled by habitat fragmentation (Shaffer et al. 2000). …As connectivity between key habitat elements is lost, isolation deprives species of their daily, seasonal and lifetime needs. Loss of connectivity deprives animals of resources, prevents some animals from finding mates, reduces gene flow, prevents animals from re-colonizing areas where extirpations have occurred, and ultimately prevents animals from contributing to ecosystem functions such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. Maintaining biodiversity and ecosystem functions requires habitat connectivity (CERI 2001).*[191]

The AGFD Comprehensive Wildlife Conservation Strategy (CWCS) utilized a threat matrix based on both ecoregion and biotic community to map important connectivity areas in Arizona. The percentages were derived by GIS analysis from an intersection of the potential linkage zones with the biotic communities' layer.

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[190] Ibid.
[191] http://www.azdot.gov/Highways/OES/AZ_WildLife_Linkages/assessment.asp

> *Biologists and managers working in the Sonoran Desert Ecoregion took an additional step in considering landscape connectivity. Region IV of the Arizona Game and Fish Department (AGFD) identified several linkages that are at this time located within habitat blocks (see Table 4-1). In most cases these are publicly owned desert lowlands between publicly owned desert mountain ranges. Because these lowland areas could be used for roads, bombing ranges, military housing, and other human uses while remaining in public ownership, it is useful to document the connectivity value of these lands before adverse activities are proposed.*[192]

The result of their inventory was that the entire valley area from Soza Wash to San Manuel in the MSPRV is mapped as "Potential Wildlife Linkages" number 82 between the "Habitat Blocks" of the Rincon-Catalina Mountain and Winchester-Galiuro Mountain complexes. These linkage zones are in Fig. 6-1 of the "Arizona's Wildlife Linkages Map."[193]

The AGFD conclusion and recommendation is:

> *This approach should enable future projects to avoid significant barriers to wildlife movement. In the long run, being pro-active will be less expensive, and possibly more beneficial to wildlife, than some of the retrofitting projects needed in fracture zones.*[194]

In addition to these landscape linkages, the canyons and riparian areas have been particularly noted for their connective function. The Arizona Open Land Trust partnered with TNC to map conservation priorities for Cochise, Graham, Greenlee, Pinal and Santa Cruz counties, and in identifying "Imperiled Movement Corridors," included Hot Springs/Paige Canyons and Redfield/Buehman Canyons as the main SPR cross-valley corridors.

As the Sonoran Desert Conservation Plan observed,

> *The Middle San Pedro Subarea encompasses the western portion of several wildlife/openspace corridors connecting the Rincon and Santa Catalina Mountains to the Galiuro Winchester Mountains. These corridors can in part be defined by canyon pairs that exist across the landscape. For example, Buehman Canyon and Redfield Canyon; Paige Canyon and Hot Springs Canyon; Soza Canyon and Soza Wash are all pairs of large drainages that provide travel corridors for various wild species across the basin.*[195]

The Sonoran Desert Conservation Plan considered wildlife corridors a *raison d'être* and main function of their management.

> *Dr. David Gori (October 1997) discussed wildlife corridors in conjunction with The Nature Conservancy's assessment of acquisition of the Bellota Ranch as follows. 'The primary ecological value of the [Bellota] ranch may be in its function as a wildlife corridor, linking up large mammal populations in the Galiuro, Santa Catalina and Rincon mountains. …Forest birds (Mexican spotted*

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[192] Ibid.
[193] Ibid.
[194] Ibid.
[195] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan (March 2000), p. 28.

> *owl) may also benefit as several studies have shown increased immigration rates to habitat patches when corridors are present (Dunning et al 1995, Haas 1995, Suanders and de Rebeira 1991, Machtans et al 1996). The property can function as a corridor (or part of a corridor) in several ways: (1) it can connect higher elevation habitats in the Rincons, Catalinas, and Galiuros and reduce extinction rates from these habitats, increase recolonization rates after local extinction, and permit gene flow between habitats; (2) it can allow an interchange of wildlife between different habitats (e.g., Sonoran desert to desert grassland to juniper-park savannah, etc.); (3) it can allow wildlife to migrate seasonally (e.g., elevational migration in birds, coyotes, bears, desert bighorn); and (4) permit species to change environments in response to environmental change (e.g., global warming).*[196]

The desired outcome was that "Wide-ranging animals (black bear, desert bighorn, mountain lion, bobcat, coati-mundi, Coue's white-tailed deer, mule deer, and possibly jaguar) would continue to move across the valley between the mountain ranges."[197] Wildlife linkages were also important in The Muleshoe Ecosystem Management Plan. "The riparian corridors are important migration and movement corridors for wildlife such as black bear, coati, and neotropical bird species."[198] The AGFD Arizona Wildlife Linkage Assessment makes similar points.

> *The riparian habitat/linkage zones are unique because they function as both habitats and linear linkage zones. They provide essential (core) habitat for aquatic organisms such as fish, aquatic plants, some amphibians, and aquatic invertebrates. In addition, the riparian vegetated areas are important for a variety of wildlife and plant species because they provide the only habitat for some species (cottonwoods, willows, some flycatchers and warblers), prime habitat for many other species, water for an even larger number of species, travel paths for mammals, reptiles, and amphibians, and migratory paths for over half of the bird species that live in or visit Arizona. Thus, each river is critical both as habitat and as the spine of a potential movement corridor.*[199]

It is important to observe that birds, and in particular neotropical migrants, also utilize these riparian areas as connective corridors. That observation is not limited to the SPR. As Susan Skagen found in her renowned USGS study, the SPRV watershed's mountain and canyon riparian oases are as important for migratory birds as the mainstem river.[200]

Further, these riparian areas are improving due to improved land management. For example, significant revegetation has occurred in Hot Springs Canyon due to the upstream efforts of the Muleshoe Ranch and the Saguaro-Juniper Ranch. Repeat photo stations since 1964 indicate that

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[196] Ibid., p. 29.
[197] Ibid., p. 13.
[198] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office (May 1998), p. 26.
[199] http://www.azdot.gov/Highways/OES/AZ_WildLife_Linkages/assessment.asp
[200] Susan K. Skagen (USGS), C.P. Melcher, W.H. Howe and F.I. Knopf, "Comparative Use of Riparian Corridors and Oases by Migrating Birds in Southeast Arizona", in *Conservation Biology* (Vol. 12, No. 4, August, 1998), pp. 896-909.

this revegetation is moving downstream, and anecdotal observation of lower Hot Springs Canyon (protected by TNC and BLM conservation easements) indicate that mesquite bosque and mixed woodland lined banks are migrating upstream from the SPR. As noted before, dryland streams are ecosystems with high resilience.[201] That these riparian areas are improving and extending during a period of drought is hopeful. The erosive impacts of service roads to ephemeral reaches that are improving in riparian and aquatic habitat will be discussed in detail in the following sections.

Private landowners of the MSPRV have also recognized the importance of wildlife corridors by donating conservation easements on their properties. The Hot Springs Canyon Wildlife Corridor Conservation Easement Project focused on connecting protected upstream core habitats in the Galiuro/Winchester Mountains with those on the San Pedro River and in the Rincon/Catalina complex. In the intermediate area, properties had been fragmented by a developer. These ephemeral reaches of the Hot Springs Canyon wildlife corridor through ASLD and private lands were deemed critical for maintaining the integrity and connectivity of the core habitats.

Though the natural habitat of the canyon is important in its own right, it is the connectivity that lent the project its special significance. This is acknowledged in the proposed Hot Springs Canyon easements, and also in the BLM conservation easement at the base of Hot Springs Canyon on the former Taylor place:

> *Protection of the Property will contribute to the ecological integrity of Hot Springs Wash and the San Pedro River; conserve significant relatively natural habitat for wildlife and plants; and contribute to the maintenance of a wildlife corridor between the San Pedro River and the Galiuro Mountains.*[202]

Habitat linkages are also receiving considerable attention for larger prey animals that require extensive areas of unfragmented habitat. Though highly controversial, the region was formerly discussed for Mexican Gray wolf recovery. Presently the USFWS has been requested to designation critical habitat for Jaguar for the San Pedro River corridor from Mammoth south to the Mexican border.[203] Whether or not such designations could or should occur, it is indicative of both the nature of the extensive habitat of the SPRV and its rarity.

Connectivity is also receiving increasing attention due to climate change as habitats alter and species require the ability to change environments in response.

> *Because land protection decisions are long-term, hard to reverse, and resource intensive, these decisions are important to consider in the context of climate change. Climate change may directly affect the services intended for protection and parcel selection can exacerbate or ameliorate certain impacts. Therefore, when considering long-term acquisition strategies, land protection programs should be considering both the mitigation potential of land through carbon sequestration and the adaptation potential of the land for preserving wildlife*

[201] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), pp. 3-4.
[202] BLM conservation easement for the property of Hawkins, Phillips and Wert.
[203] CITIZENS' STATEMENT OF SUPPORT For Recovering the Jaguar as a Native Species of the United States.

migration routes, protecting water sources, and buffering infrastructure and development from storm events.[204]

E.Summary

This first section of the Cascabel Working Group's contributions to the SunZia Draft Environmental Impact Statement primarily considers those unique characteristics, context and ecosystem components of the Middle San Pedro River Valley such that the NEPA process finds germane to direct and indirect cumulative effects of the proposed project over time. In that regard it could be compared to the "coarse filter" component of an ecoregional assessment wherein more generic landscape and habitat issues are reviewed and addressed.

A review of that data is as impressive as for any area in the American Southwest. The San Pedro River Valley is recognized as one of the most biologically diverse ecosystems in North America. It sits at the interface of four "Globally Outstanding" terrestrial ecoregions and a "Continentally Outstanding" freshwater ecoregion. In the midst of that it serves as the main migratory corridor for neotropical migrant birds in the West, and is thereby attributed to be of "continental importance" by both conservation groups and federal agencies, including the BLM.

Further, the Middle SPRV through which the SunZia transmission routes propose to run is the last relatively intact and largely unfragmented extended landscape in the desert Southwest through which courses a major free-flowing river. Likewise, it is an intact cultural landscape in an area of one of the longest and most complex continuous archaeological records in North America. An impressive suite of federal, state and county agencies, NGOs and private partners have attested to this importance by the investment of many millions in a large amalgam of protected conservation sites.

These accolades transcend a mere collection of discrete attributes or particular species counts. Ecological science has undergone a paradigm shift in its understanding that habitat fragmentation increases the vulnerability of suites of species populations. Ecoregional assessments look at continuous blocks of habitat that are a complex of mountain ranges and valleys where ecological processes remain largely intact. In depth ecoregional assessments of southern Arizona have discerned five Conservation Sites of high priority in the MSPRV, and the proposed SunZia transmission routes transect every one of them.

The five MSPRV Conservation Sites include the "desert seas" or Semidesert Grassland and Sonoran and Chihuahuan Desertscrub basins between the "sky islands" which serve as transitional connections between the upland and riverine communities. Because rivers are products of their watersheds, the grasslands and the water systems are not independent units, but are themselves intimately connected. Large swaths of the MSPRV have also been recognized for their connective attributes by Pima County's Sonoran Desert Conservation Plan, by Arizona Game and Fish Department's "Arizona Wildlife Linkages Assessment Document" and Arizona Open Land Trust and TNC's "Imperiled Movement Corridors." It is also implicit therein that since upstream activities are manifested in downstream effects, conservation of the San Pedro River must occur at the watershed scale.

[204] An Assessment of Decision-Making Processes: the Feasibility of Incorporating Climate Change Information into Land Protection Planning. http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=210027

Ecoregional assessments are performed not only by conservation groups but in cooperation with federal agencies such as the USFS and BLM, and a primary purpose is to evaluate areas for priority conservation and to implement policy recommendations. The managerial prescriptions for these large blocks of the MSPRV are uniformly to avoid development and infrastructure fragmentation that would imperil the sustainability of the unique and rare components of such a biologically diverse ecosystem. Given the abundance of biological evidence and consensus to this effect, SunZia's proposed routes that wend their way through discrete protected habitat patches in the MSPRV and Aravaipa must be viewed as either naïve or disingenuous if thereby they suppose to avert major ecosystem impacts.

The evidence of the MSPRV watershed as a biologically critical and connected unit is both scientifically compelling and programmatically confirmed. The situation then becomes comparable to that of the Upper San Pedro wherein Endangered Species Act issues arise about off-site impacts to protected species and habitats. With endangered species such as the southwestern willow flycatcher mitigation sites on the San Pedro River, listed native fish habitat in the canyon tributaries, and a valley-wide neotropical migratory bird corridor of continental importance, similar concerns arise in the Middle SPRV. Here it is not so much below grade aquifer extractions impacting habitat, but above grade impacts to the ecosystem. These issues have been raised to the level of lawsuits in the Upper SPRV, and it is a matter that will be further addressed after cataloguing foreseeable direct impacts of a power transmission corridor.

Although small, this bi-national dryland river has high scientific importance and conservation value, and is oft noted as one of the most studied rivers in the nation. Many watershed groups are looking to the San Pedro as a model for river-protection efforts.[205] It has been noted that the condition of its riparian ecosystems may be the canary in the coal mine with respect to sustainable water use in the desert southwest.[206] A corollary of that statement in the Middle SPRV is that the condition of its watershed may be the canary in the coal mine with respect to the possibility for a largely unfragmented and intact riverine ecosystem persisting in the desert Southwest in the midst of tremendous demographic pressures. It is apparently the last chance. A mitigation site for a last remaining mitigation site is oxymoronic.

To carry forward the metaphor of this first section as a "coarse filter" assessment of the MSPRV, given the special status of the area and the plethora of documented special attributes, the region would be red-lined for conservation priority simply on the basis of "coarse filter" assessments before proceeding to the "fine filter" species concerns. That is, before needing to address the "direct impacts" of a project of SunZia's size and scope to such an area of such great biodiversity and "continental importance," a NEPA judgment of Environmental Objection would likely already be raised. Nonetheless, if data is required, data will be forthcoming, but all as weighted metrics given the uniqueness of the region. That is, the same impacts that might be considered minor to an existing infrastructure corridor become major in an area of such import.

[205] Juliet C. Stromberg and Barbara Tellman, editors , Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), p. 4.
[206] Ibid., p. 2.

Received by
BLM on 6/2/2010
AG

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue..

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Bob Vlalgem

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY 21 PM 1:26
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Shirley J. Owen

epd
JUN 18 2010

George A. Ranney

RECEIVED
B.L.M.-MAILROOM
2010 MAY -3 AM 11:58
STATE OFFICE
SANTA FE, NEW MEXICO

April 28, 2010

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

George A. Ranney

JUN 18 2010

30 W. Monroe Street, 18th Floor
Chicago, Illinois 60603
312/332-8181 phone

George A. Ranney

RECEIVED
B.L.M.-MAILROOM
2010 MAY -3 AM 11:57
STATE OFFICE
SANTA FE, NEW MEXICO

April 28, 2010

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. I have believed for several years this project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

George A. Ranney

JUN 18 2010

30 W. Monroe Street, 18th Floor
Chicago, Illinois 60603
312/332-8181 phone

From: David Aigner
Reply To: daveness@earthlink.net
To: NMSunZiaProject@blm.gov
Cc: Gail Hulslander; Leigh Ann Vradenburg
Subject: Sun Zia Project 500 kv transmission line
Date: 06/06/2010 10:23 AM

Dear Mr. Garcia,

As a member of the Friends of the Bosque del Apache National Wildlife Refuge, and life time resident of New Mexico having raised my children and now grand children here in New Mexico, want to go on record in support of the Friends of the Bosque del Apache National Wildlife Refuge position as stated below with regards to the proposed expanded study area for the Sun Zia Project 500 kv power transmission line between AZ & NM. Having studies the proposed routes on the BLM web site and my familiarity with the eastern boundary route along White Sands I believe this is the only acceptable route for the the project. The land areas adjacent to the Bosque del Apache National Wildlife Refuge must receive the same respect, preservation and protection as the National Wildlife Refuge regarding future land development.

Sincerely, David J. Aigner

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of “M” Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although “green” power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia

must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

David Aigner
daveness@earthlink.net
EarthLink Revolves Around You.

George A. Ranney

RECEIVED
B.L.M.-MAILROOM
2010 MAY -3 AM 11:58
STATE OFFICE
SANTA FE, NEW MEXICO

April 28, 2010

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a land owner in Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in our County, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would increase the cost and impact on the environment through additional miles of transmission lines. We need to be aware that we are competing with other areas for this type of program.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. It has reviewed these matters carefully. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

George A. Ranney

JUN 18 2010

30 W. Monroe Street, 18th Floor
Chicago, Illinois 60603
312/332-8181 phone

From: Lemtiltw@aol.com
To: NMSunZiaProject@blm.gov
Subject: Comment on Study Area Expansion-Arizona Portion
Date: 04/30/2010 05:48 PM

As I was unable to attend the scoping meeting held on April 29, 2010 in Tucson, I hope you can accept my comment in this way. For full disclosure, I own property that could potentially be affected by one or more of the "alternative" routes for the SunZia transmission lines in the Aravaipa Creek area between the Pinalinos and Galiuros Mountains.

The fact that the proposed transmission lines would carry electricity produced by solar and wind is not material to my comment. We cannot continue, in this country, to take ever more land in an undeveloped or limited development state and cover it with utility lines and roads, no matter how that might affect the cost of such a project. Several of the proposed alternative routes for these transmission lines traverse just such land. From what I can tell, one such line proceeds north along the east side of the Pinalinos Mountains, past Mount Graham and then proceeds west, probably through the pass between the Santa Teresa Mountains and the Pinalinos. Another alternative proceeds north through the Aravaipa Creek area and west through the northern reaches of the Galiuros Mountains. Mount Graham, Aravaipa Creek, the Aravaipa Wilderness and the Galiuros Wilderness could all be adversely affected by the construction of these lines. Moving to the west, the map in your meeting advertisement indicates potential alternative lines up the San Pedro River Valley, a sensitive and threatened riparian area, which would be even more threatened by such an encroachment of development.

My hope is that, as you develop an EIS for this project, you look at already developed areas, such as those in the proposed expansion corridors along I-10 or along existing power transmission lines, and find that development in more sensitive areas should be off the table.

Thank you, Lucy M. Almasy

9652 E. Stella Rd.
Tucson, Arizona 85730
(520) 546-7097

April 16, 2010

Bureau of Land Management

New Mexico State Office

SunZia Southwest Transmission Project

PO Box 27115

Santa Fe, NM 87502-0115

Dear Sir or Madam,

As a resident and land owner in Torrance County, NM, I am writing to express my support for the SunZia southwest Transmission Project. This project will help stimulate the local economy, thus bringing needed jobs and tax revenues.

In Torrance County we have an abundance of renewable energy resources; wind, solar, geothermal and biomass. The development of these resources will create income and tax revenues from land sales/leases, construction jobs, fulltime positions in engineering and maintenance of the projects, as well as government income from sales taxes, property taxes, and income taxes.

Unfortunately, the lack of high voltage transmission lines has hampered the development of these resources. The SunZia transmission project would enable the development of our resources , will bring the much needed power to the western states, stimulate our local economy, and bring revenues to New Mexico. The project will provide needed transmission access.

Thank you for your consideration,

Sharolyn Leibold

Bill Leibold

RECEIVED
B.L.M.-MAILROOM
2010 APR 28 AM 11:38
STATE OFFICE
SANTA FE, NEW MEXICO

JUN 18 2010

From: javierapodaca@att.net
To: NMSunZiaProject@blm.gov
Cc: mrormrsrjs@aol.com
Subject: Aternative Routes for project
Date: 06/08/2010 12:05 PM

Mr Garcia, while we are in favor of new technology to end devastating effects on the environment like the present oil spill on the gulf, the sunzia project also has its advantages and disadvantages. You probably have had an earful already so we will stick to the point. The routes we endorse are the least detrimental to Windmill Ranches. Those are E10 and E80. Our concern still lays heavily on the substations however. Please have sunzia keep in mind our home properties when making their decision. Thank you for your time and considerations.
Sincerely
Javier and Dora L. Apodaca
Windmill Ranhes Homeowner Association members
Ancho, NM

RECEIVED
B.L.M.-MAILROOM
2010 APR 30 AM 11:30
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Samta Fe, NM 87502-0115

To Whom It May Concern:

As a member of the Corona Landowners' Association, a landownder in southern Torrance County, and a resident of Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and ways in which it helps diversify the state's economy and achieve energy independence.

The final steps toward fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy production.

Sincerely,

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 APR 23 AM 11:28
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in our County, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

Barbara T. Sultemeier

Barbara T. Sultemeier

JUN 18 2010

From: Susan L. Barclay
To: NMSunZiaProject@blm.gov
Subject: Objection to proposed power line path
Date: 05/29/2010 03:02 PM

Dear SunZia/BLM,

One of the possible routes you have proposed for the SunZia 500 KV power lines passes through San Acacia, Polvadera, and/or Lemitar in Socorro County. I strongly object to your using this corridor and ask that you use one of your alternate corridors instead. All things considered, the corridor(s) along White Sands would seem to be far better alternatives.

My objection is based on (1) scientific evidence indicating possible links between EMFs and childhood leukemia, fibromylagia, Parkinson's disease, Alzheimer's, migraine headaches, sleep disorders, allergies, and asthma; (2) degradation of local property values because of potential buyers' concerns about health, neighborhood aesthetics, quality of life and diminished resale value; (3) possible negative effects on the migratory, reproductive and nesting behavior of the tens (hundreds?) of thousands of birds which migrate here annually; and (4) associated negative effects on the bird-centered tourist industry in the City of Socorro, the Bosque del Apache and surrounding communities.

It is for these reasons that I object to your possibly placing power lines in my area. Please choose an alternative corridor which has a less negative impact on our people and animals.

Thank you.

Susan L. Barclay
Resident of Polvadera, Socorro County, NM

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:
As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,
Barbara T. Sultemeier
Barbara T. Sultemeier

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 APR 23 AM 11:29
STATE OFFICE
SANTA FE, NEW MEXICO

From: Rick/Susan Barclay
To: NMSunZiaProject@blm.gov
Subject: Proposed power line route
Date: 05/29/2010 02:33 PM

Dear Sir or Madam,

I am writing to voice my objection to one of the possible power line routes for the SunZia Transmission Project, specifically, the one within the corridor that passes through San Acacia, Polvadera and or Lemitar in Socorro County.

As a resident of Polvadera, I am concerned about various negative effects of these power lines and associated towers. One major concern is with effects on health. There is evidence which suggests that the EMFs associated with these lines may cause or contribute to a number of health problems, including cancer (particularly among children), migraine headaches, Alzheimer's, Parkinson's, fibromyalgia, high blood pressure, asthma, chronic fatigue, insomnia and allergies.

Another concern regards possible effects on birds' migratory behavior. This proposed route lies directly in the flight path of thousands of birds migrating to the Bosque del Apache and points further south. Disruption would affect not only the birds but also the tourist industry in this area (particularly in the City of Socorro and at the Bosque), due to the large number of "birders" who come here in the fall to observe the many species who winter here.

I am also concerned about the obvious decimation of property values, owing to the fact that many people who might otherwise buy homes in this area would not do so if these high voltage lines were nearby, given concerns about health, aesthetics, quality of life and reseale value.

For these reasons, I strongly object to locating power lines in the above-mentioned corridor and ask that you choose some alternate route that does not have such negative effects on the human and animal populations. The corridors bordering White Sands would seem to be a much better alternative.

Thank you.

Sincerely,
J. R. Barclay
Polvadera, Socorro County, NM

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2010 APR 23 AM 11:29
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Barbara T. Sultemeier

Barbara T. Sultemeier

JUN 18 2010

From: wendy barth
To: nmsunziaproject@blm.gov
Cc: friends@sdc.org
Subject: Power transmission line -- Bosque del Apache NWR
Date: 06/04/2010 02:29 PM

I would like to express my opposition to the building of a power transmission line that will impact the wildlife, in particular the migratory bird life, of the Bosque del Apache National Wildlife Refuge in any way.

I am not a resident of New Mexico, and your decision will not affect my property value. However, as a frequent traveler to New Mexico, and to the Bosque del Apache National Wildlife Refuge in particular, I can see that your decision will make a decided impact on not only the wildlife, but on the tourist economy of that part of the state.

Because of the disastrous British Petroleum well failure in the Gulf of New Mexico, people are much more conscious of the possibilities that energy projects may adversely impact the environment and the local -- and eventually, the national -- economy.

I am not suggesting that your project would have the adverse impacts that BP's well failure has, and will, have. I am advocating that you choose a route for your transmission line that will minimize any impact whatsoever on an important National Wildlife Refuge.

Wendy Barth
Frederick, MD

From: Anne Beckett
To: NMSunZiaProject@blm.gov
Subject: Comment on Sun Zia Project
Date: 06/09/2010 09:36 PM

I respectfully request that the BLM only approve a plan that does NOT cross the Bosque del Apache NWR in anyway, compromise the agricultural fields that provide necessary feed for migratory birds, or cross the Rio Grande River in the migratory flight path of birds such as the Sandhill Crane. There are alternative choices such as on the east side of White Sands Missile Range that would result in substantially less impact on wildlife and the environment. The whole idea of a wildlife refuge is just that - it's a refuge from humans and human activity, including powerlines. The focus of our decisions needs to renewable energy with minimal impact on wildlife and their habitat.

Sincerely,

Anne E. Beckett
10 Cerrado Rd
Santa Fe, NM 87508

RECEIVED
B.L.M.-MAILROOM
2010 MAY -3 AM 11:59
STATE OFFICE
SANTA FE, NEW MEXICO

April 30, 2010

Ms. Linda Rundell, State Director
Bureau of Land Management
New Mexico State Office
ATTN: SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Ms. Rundell:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help Lincoln County and New Mexico achieve the goal of developing this region's renewable energy resources. The final steps towards fully reaching this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal, biofuel and biomass. A county-wide initiative has been underway since November 2009 to identify and develop these resources. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes. However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

The BLM has done an excellent job in soliciting public opinions in Lincoln County and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

James Miller

James Miller Jr. Ph.d.

JUN 18 2010

From: Nancy Benkof
To: NMSunZiaProject@blm.gov
Subject: Rio Grande Valley power transmission corridor
Date: 06/04/2010 07:59 PM

Dear Sirs,

Please know that I am among numerous visitors to Bosque del Apache National Wildlife Refuge who are distressed to learn that the fragile integrity of that wildlife would be threatened by unanswered concerns regarding the Rio Grande Valley power transmission corridor. Daily flight plans will be compromised, the landscape will be scarred for miles and the tourist industry, therefore, at risk.

Please work with the Friends of the Bosque del Apache National Wildlife Refuge to find solutions to these concerns that will benefit not only the wildlife but the quality of life for the local community and visitors.

Best,
Nancy Benkof and Paul Pletka

RECEIVED
B.L.M.-MAILROOM
2010 APR 30 AM 11:30
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 887502-0115

To Whom It May Concern:

As a member of the Corona Landowners' Association, a landowner in southern Torrance County, and a resident of Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in Lincoln county, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job of soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the areas of visual impact, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

Mr. + Mrs. A. J. Gibbs

JUN 18 2010

From: Geraldine Benson
To: NMSunZiaProject@blm.gov
Subject: SunZia Power Transmission Corridor
Date: 06/05/2010 02:04 PM

I support and as a member of the Friends of the Bosque oppose SunZia's proposal to build a power transmission corridor across the Rio Grande Valley in the vicinity of the Bosque del Apache.

Please do not repeat the tragedy of the oil spill in the Gulf of Mexico. Protect the environment and its creatures.

Thank you.

Geraldine M. Benson
1927 San Fernando Drive
Las Cruces, NM 88011

From: James Bergstrom
To: NMSunZiaProject@blm.gov
Subject: Sun Zia proposed route comments
Date: 05/26/2010 08:08 PM

Hello Mr. Garcia,

We briefly met at the SunZiia meeting in Tucson at the Holiday Inn. I had questions concerning the identity of the SunZia participants as well as the question of why BLM was in charge of a project that would probably cross more state, Apache, or US Forest Service lands.....unless
this was BLM's way of hinting that their lands, and the routes that cross them, would be more "available".

My current question: why does anyone feel that this project "has" to happen at all? Just because a powerful consortium of companies, or a single giant, wants to do offshore drilling, does it mean they eventually *must* be able to? Times change.

I still favor the more expensive route, that is, more expensive to the SunZia group, of Winchester to Vail through Tucson via steel towers instead of lattice towers. This right-of-way can be accomplished in a way that will make more "sense". I also want to say that I do not believe that the DOD and Ft. Huachuca are intensely against this route. This is an easy way out for EPG and their consultants concerning this proposed route: the military, our government, seriously opposes it so what can we do but go a different way?

I realize that the path of least public resistance is usually the path these projects seek because it's just that, easier, not better or the "best solution". In this case that path is apparently through Aravaipa after crossing the San Carlos lands and the Santa Teresas.

I personally believe that if the same amount of money that this project's completion will entail was instead made available as extremely affordable and low-cost rooftop PV loans to any homeowners within this total corridor's area, the companies working together to accomplish this transmission line would reap far greater profits for far less work while simultaneously creating an enormous amount of electricity and satisfying tens of thousands of homeowners by eliminating their monthly electric bill over time.

Distributed solar, lining the rooftops of our homes within power-producing PV panel systems, like Germany and Switzerland are doing so well, is the only logical answer. Big business does not think logically or long-term, unfortunately, but rather looks for more ways to stay within the status quo. Such a shame..

Thanks for including my input.

Regards,

Jim Bergstrom
PO Box 444
San Manuel, AZ 85631

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 28
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115
Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

P.O. Box 128
Corona, N. Mexico

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 28
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

epg
JUN 18 2010

RECEIVED
B.L.M.-MAILROOM

2010 MAY 25 PM 12: 29

STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

JUN 18 2010

From: Teresa Bottomly
To: NMSunZiaProject@BLM.gov
Subject: SunZia proposed powerline route
Date: 05/31/2010 07:08 PM

Please consider the proposed power line corridor that was proposed in SunZia's original 2008 filing - the route that follows White Sands Missile Range western fence line and crosses the Rio Grande south of the Caballo reservoir. This route will have the least impact on both bird migration paths and property values than the other proposed routes.

Thank you,

Teresa Bottomly
713 Caine St.
Socorro, NM 87801

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 30
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

JUN 18 2010

From: George & Donna
To: NMSunZiaProject@blm.gov
Subject: SunZia Power Project
Date: 06/10/2010 09:06 AM

I am a resident of the San Pedro River valley, living approximately half way between Benson and San Manuel.

I would like to state that **I am opposed** to the construction of the SunZia Power Lines through the San Pedro River Valley.

I could go on and on about the impact the project would have in the valley, however the Cascabel Working Group has already provided you with volumes of information regarding the delicate nature of the valley.

Sincerely

George Bushno
520-212-2888
bushnelli@dishmail.net

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 30
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

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The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Gustavo Washburn

Joanne Washburn

JUN 10 ...

JUN 18 2010

From: Tom Callahan
To: NMSunZiaProject@blm.gov
Subject: Bosque del apache
Date: 06/04/2010 08:22 PM

Please consider this unique area and the impact it would have. Please consider the least intrusive plan for the transmission wires
Thank you,

Tom Callahan, LCSW, CEAP, BCD, SAP
tomcall@cox.net

From: diana candelaria
To: NMSunZiaProject@blm.gov
Subject: SunZia Powerline Proposal
Date: 06/04/2010 09:31 AM

---

4 June 2010

To: NMSunZiaProject@blm.gov
BLM New Mexico State Office
SunZia Southwest Transmission Project
P>O> Box 27115
Santa Fe, NM 85702

Concerning the proposed route for SunZia's powerline across the northern ends of Socorro and Polvadera, I strongly urge you to reconsider the corridor proposed in SunZia's original 2008 filing, which follows White Sand's western fence line. I agree with the Fish and Wildlife Service that this western boundary route is the most reasonable in that it protects wildlife along the Rio Grande flyway and has the least impact on our communities. As pointed out by Kathryn Albrecht in her column in the May 29 edition of the El Defensor Chieftain, it alone avoids all Wildlife Refuges, Wilderness Areas, WSAs and BLM areas of critical environmental concern.

Thank you for your attention to this vital matter.

Sincerely yours,

Diana Candelaria
General Delivery
San Acacia, NM 87831

RECEIVED
B.L.M.-MAILROOM

2010 MAY 25 PM 12: 30

STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

JUN 18 2010

From: Linda Carson
To: NMSunZiaProject@blm.gov; adrian_garcia@nm.blm.gov
Subject: Comments on SunZia Transmission Line Project
Date: 06/08/2010 08:17 AM
Attachments: Carson comments.pdf

Please find my comments in the attached PDF file. I am mailing the original letter to EPG in Phoenix.

Thank you,

Linda Carson
HC66 Box 611
Mountainair, NM 87036-9419
(575) 423-0645

June 6, 2010

Linda Carson
HC66 Box 611
Mountainair, NM 87036-9419

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

To Whom It May Concern:

I am writing to express my grave concerns regarding one of the proposed routes for the SunZia Southwest Transmission project, specifically the route labeled E10, one of the "alternative routes subject to feasibility study" in the New Mexico Study Area Expansion of April 2010.

I am one of eleven households that are located in the vicinity of alternative route E10. We all live along County Road A-125, which runs south of U.S. Highway 60 at mile marker 191. Your route E10 crosses A-125 approximately three miles south of Highway 60. I have drawn County Road A-125 on your map entitled "Resource NM Ownership" for your reference and included it on the next page.

As you consider alternative route E10 for your transmission line, please be aware of the following:

1. The northernmost portion of A-125 is a one-lane bridge that crosses Abo Arroyo. This bridge has been condemned by the New Mexico Department of Transportation. While it remains open to local residents, it is not safe for commercial vehicles or other heavy equipment.

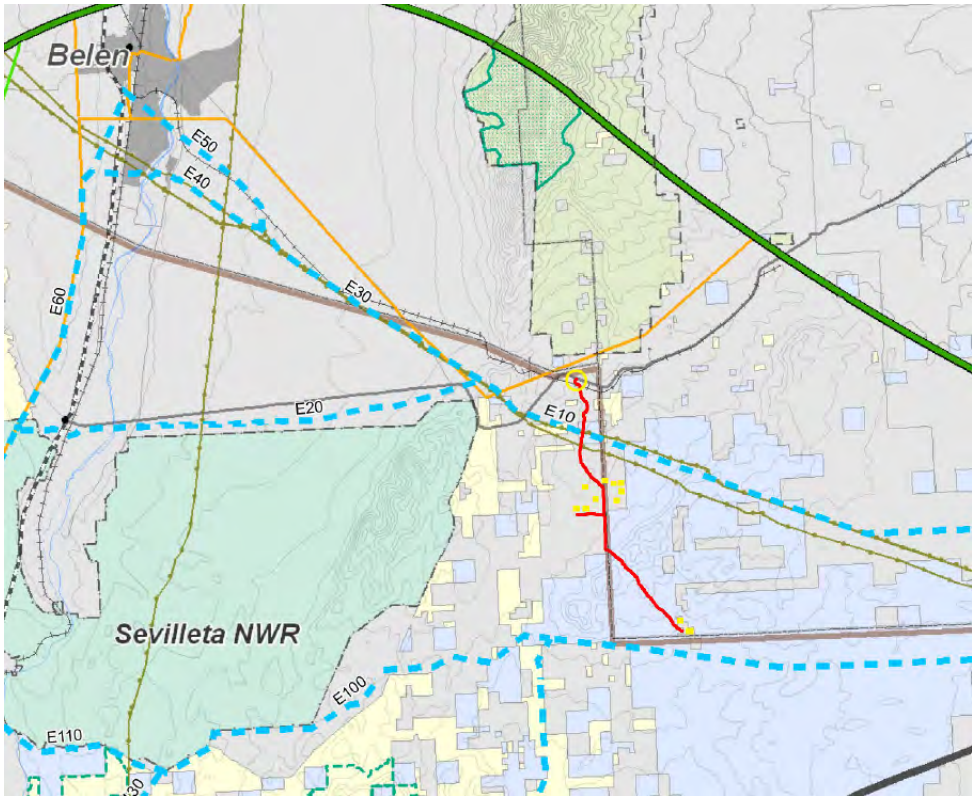
2. A-125 is a one-lane dirt road that winds through a rugged canyon and across many arroyos, but it is our most direct access to Highway 60, and our only access to Highway 60 when mud renders our only other access road, B-127, impassable. In essence, it is our lifeline, and it cannot be jeopardized by increased usage from transmission line construction and maintenance activities, nor can it be closed at any time during construction of a transmission line without jeopardizing the livelihoods and safety of the local residents.

3. All of the residents in the vicinity of your route E10 rely on individual wells for their water - we have no other option for water services. Residents living approximately two miles north of the your proposed route E10 have, within the past year, suffered from the collapse of their wells due to drilling and blasting associated with the construction of the Burlington Northern Santa Fe railroad track in Abo Canyon, northwest of the area. Any drilling and blasting associated with the construction of a transmission line in the area must not and cannot jeopardize the aquifer or infrastructures which provide local residents their sole source of water.

In light of the significant negative impacts a transmission line along route E10 would have on area residents, I strongly urge you to remove this route from consideration.

Sincerely,

Linda Carson


Belen
E50
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Sevilleta NWR
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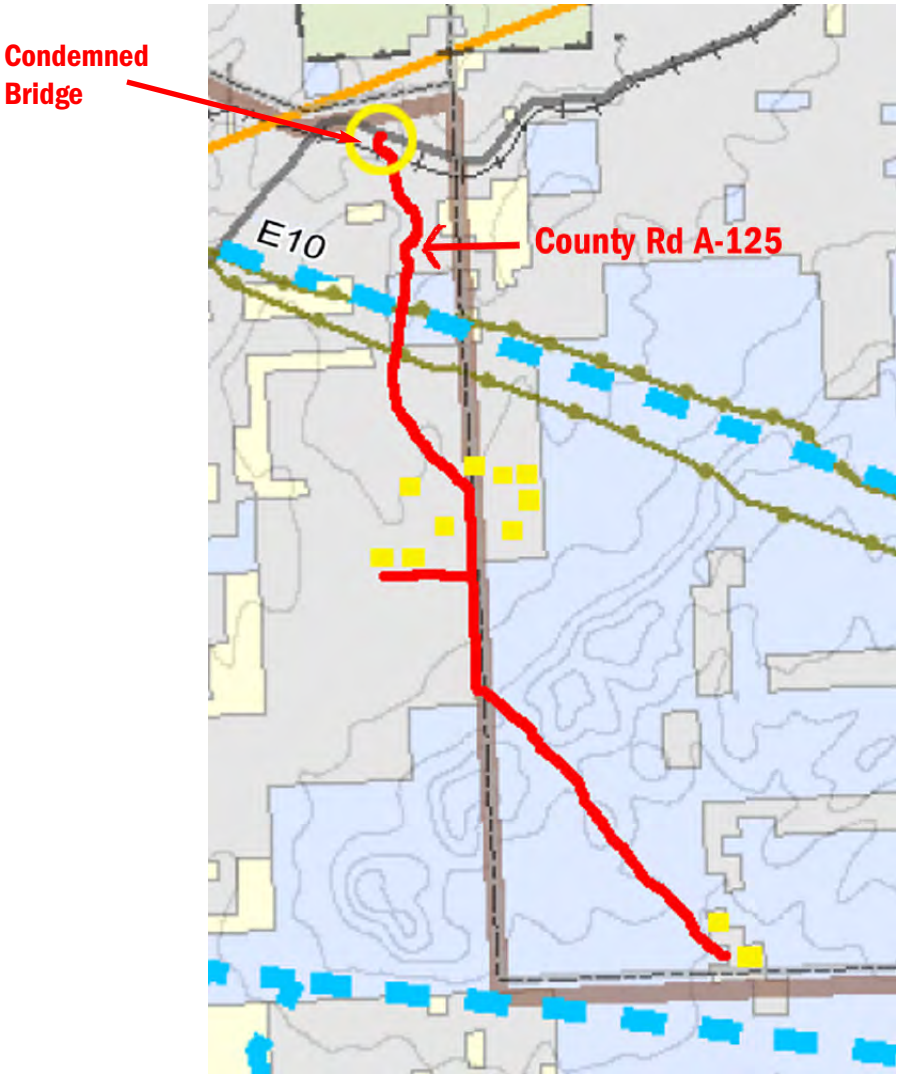
Condemned Bridge
E10
County Rd A-125

From:	Elizabeth Livingston
To:	NMSunZiaProject@blm.gov
Cc:	Albert Elias; Christopher Avery; Jim Mazzocco; Leslie Ethen; Nicole Ewing-Gavin; Rebecca Waid; Sean McBride
Subject:	Re: Comment on the SunZia Southwest Transmission Project - letter
Date:	06/10/2010 06:16 PM
Attachments:	Adrian Garcia - 6-10-2010.pdf

Hi Adrian,

Attach you will find the comments on the SunZia Southwest Transmission Project.

Thank you
Elizabeth Livingston
(520) 837-6959

CITY OF TUCSON

HOUSING & COMMUNITY DEVELOPMENT DEPARTMENT

June 10, 2010

Adrian Garcia
Project Manager/Realty Specialist
Bureau of Land Management
New Mexico State Office
301 Dinosaur Trail
PO Box 27115
Santa Fe, New Mexico 87502

Dear Mr. Garcia:

The City of Tucson would like to provide the following comments regarding the study area expansions for the SunZia Southwest Transmission Project (SunZia Project).

The expanded study area now shows several possible routes for the SunZia Project transmission lines that run through or near the City of Tucson. While, the City strongly supports the development and use of renewable energy resources, we feel that this must be balanced with a respect for local environmental, social, and economic development values and goals.

As the Bureau of Land Management (BLM) develops the Environmental Impact Statement (EIS) for this project and evaluates the impacts of various proposed routes, we request that you consider the following factors.

- The City of Tucson (City) is engaged in a long-term economic development and revitalization process for the Tucson Downtown. This effort is often referred to as Rio Nuevo. Siting of transmission lines could have a detrimental impact on this effort of they reduced the look and feel of the Downtown area. Rejuvenation of the Downtown is extremely important to the economic vitality of the entire region. Factors such as aesthetics play a critical role in the success of such efforts.

- The City has a long-standing commitment to the preservation of sensitive environmental resources including watercourses and associated riparian habitat, and habitat for vulnerable wildlife and plant species. Lands within the City, particularly those south of Interstate 10, and lands owned by the City of Tucson in Avra Valley, west of the Tucson Mountains, provide habitat for several endangered, threatened, and candidate species. Both areas are shown as potential locations for transmission lines.

  The City has been involved in the development of Habitat Conservation Plans (HCPs) under Section 10 of the Endangered Species Act for these two areas. Those plans are available for your review and we request that they be considered in the development of the SunZia Project EIS. The City also recognizes the significant value provided by riparian habitat and has regulated impacts to watercourses for more than 20 years. Major watercourses such as the Santa Cruz, Rillito, and Pantano are especially important and the City, Pima County, the Town of Marana,

EQUAL HOUSING OPPORTUNITY

Administration◆310 N. Commerce Park Loop◆P. O. Box 27210 Tucson, AZ 85726-7210
(520) 791-4171 FAX (520) 791-5407 TDD (520) 791-5481

and Army Corps of Engineers have invested millions of dollars in developing restoration plans for portions of these watercourses. These restoration plans, and the City's overall goal of minimizing impacts to riparian habitat, should also be taken into consideration.

- The City owned lands in Avra Valley are the site for both existing and proposed water supply facilities. Current facilities include recharge basins and recovery wells. Water supply is a major concern for the region and it is important that land uses adjacent to these lands not impair the function of existing facilities or the ability of the City to develop additional facilities.

- Many residents in the Midtown region of the City have had a long-standing concern with the impact of growth and changes in land use on quality of life. Issues such as air traffic, road congestion, and interface between residential areas and non-residential uses have been significant topics of discussion. Any transmission lines alignments that run through the City proper will need to be considered in an open and transparent dialogue with the residents that would be impacted.

Regardless of the route chosen, the City requests that BLM take every opportunity to engage the residents, businesses, agencies, and stakeholder groups of this community. We support the overall goal of bring renewably-generated energy to areas currently served by carbon-intensive energy supplies, but the development of this project will be a success only if it respects and compliments our local goals for environmental preservation, quality of life, economic development, and sense of place.

Sincerely,

Albert Elias

Albert Elias, AICP
Director
Housing and Community Development Department

c: Sean McBride, City Manager's Office
Nicole Ewing Gavin, City Manager's Office
Leslie Ethen, Office of Conservation and Sustainable Development
Jim Mazzocco, Planning and Development Services
Chris Avery, Tucson Water
File

EQUAL HOUSING OPPORTUNITY

Administration◆310 N. Commerce Park Loop◆P. O. Box 27210 Tucson, AZ 85726-7210
(520) 791-4171 FAX (520) 791-5407 TDD (520) 791-5481

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 24
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Linda Green

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 25
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Janice Bonds

PO Box 263
Carona, NM 88318

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 26
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
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Sincerely,

Phoebe Coydell

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 26
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Kathy Palomary

JUN 18 2010

From: Mary Clark
To: NMSunZiaProject@blm.gov
Subject: Power line construction across Bosque del Apache
Date: 06/07/2010 06:10 PM

I am very concerned about the possible and probable downside of constructing a power line across lands dedicated to The Bosque del Apache Wildlife Area. I strongly advocate abandoning this proposal.
Mary G. Clark 7 Chapala Road, Santa Fe NM 87508 (505) 466-3236

From: Joe Baker
To: Adrian Garcia
Subject: Comment on SunZia proposal, also sent by USPS
Date: 06/04/2010 12:19 PM

PO Box 332
Monterey, MA 01245
June 4, 2010

SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Mr. Garcia,

I am writing to express my belief that routing the proposed SunZia transmission lines, with associated towers and roads, through the San Pedro Valley would be wrong. Further, it would be the kind of action that future generations will look back on as an unforgiveable act of disregard for the health of the world we share with each other.

In my most recent trip to the Cascabel and Benson area, I spent considerable time studying the terrain and topography, trying to envision how the proposed route might be constructed without irrevocable damage to the area. My attempts were in vain; no matter how I placed the towers, the roads and the lines, there was no escaping the fact that the proposal is monstrous. This valley is one of the last remaining corridors in the Southwest which is more or less intact and available to animal and plant life for growth and dispersal. To alter it in the way proposed by the SunZia project would be unforgiveable.

Not just in the USA, but all over the world, people will need to change their approach to "using" the land. I believe that in the long run as well as in the short run, here in our country, we would be best off to focus on producing the bulk of our energy where we live, and on living sustainably within the constraints of our climate, seasons, geology and geography.

Where routes must be found for projects such as this (and I question the necessity of them; re-shaping our thinking again), would we be not be better off to make use of existing areas already remodeled by human activity? In this case, the I-10 pathway is available. To the investors in SunZia who think that the San Pedro might be preferable due to offering a shorter route, I would say that the San Pedro Valley is not, and will not ever be, an option.

Thank you for your hard work and consideration.

Sincerely,
Clifford Baker

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 28
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Amanda L Hunlap

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 MAY 25 PM 12: 16
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:
As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Gustav Washburn
Joanne Washburn

JUN 10 2010

From: Dick Colby
To: NMSunZiaProject@blm.gov
Subject: SunZia Transmission Line Project
Date: 06/08/2010 06:04 PM

I am in opposition of any route configurations that ignore flyway and view scape issues. SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. It has been demonstrated that better route and underground placement are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds.

BP has thoroughly demonstrated the complete lack of stewardship of the sea air and land, and concern for other than profit that permeates the energy extraction business. It is time for some branch of our government to grow a spine and start taking care of the land. It would be a surprise if BLM is the agency to do that. You decisions do affect us here in Western Colorado, as the Bosque Sandhill Cranes travel through here and a few summer in Northwestern Colorado as well as Wyoming, Montana and Idaho.

Richard Colby
130 Kennedy Ave.
Grand Junction, Co 81501

From: Jim Cook
To: B LM Adrian
Subject:
Date: 06/03/2010 11:35 AM

Hello we are land owners in Windmill Ranch. We have also written to you before about our hope that Zun Zia would not put a transmission line through Windmill Ranch, Ancho, New Mexico. We believe that the decision has been made to go around the ranch and are hopeful that it is true. This message is both Jim and I to encourage that decision and support all efforts to by pass Windmill Ranch. Sincerely, Pam and Jim Cook

From: Alex Daue
To: NMSunZiaProject@blm.gov
Cc: Adrian_Garcia@blm.gov
Subject: TWS, NRDC, SI and Partners SunZia Scoping Comments (6-10-10)
Date: 06/10/2010 09:11 AM
Importance: High
Attachments: TWS, NRDC, SI and Partners Sunzia Scoping Comments (6-10-10).pdf
Attachment A - TWS and Partners Scoping Comments 2009.pdf
Attachment B - SunZia Scoping 2010 Routes Intersections with NMWA Wilderness Inventory Units.pdf
Attachment B - SunZia Scoping 2010 Routes Intersections with NMWA Wilderness Inventory Units.pdf

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Hello Adrian,

Please accept and fully consider the attached comments on behalf of the groups signed on to the document. Thank you for the opportunity to comment. Please let us know if you have any questions.

Sincerely,

Alex Daue

Alex Daue
Renewable Energy Coordinator
The Wilderness Society - BLM Action Center
1660 Wynkoop St. Suite 850
Denver, CO 80202
(303) 650-5818 x108

The Wilderness Society Sonoran Institute Natural Resources Defense Council
Sierra Club – Rio Grande Chapter Western Resource Advocates
New Mexico Wilderness Alliance Defenders of Wildlife

June 10, 2010

*Delivered via electronic mail (*NMSunZiaProject@blm.gov*) and U.S. mail.*

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115

Re: Scoping Comments on Proposed SunZia Transmission Project

Dear Mr. Garcia:

Please accept and fully consider these scoping comments on the proposed SunZia transmission project on behalf of The Wilderness Society, Sonoran Institute, NRDC, the Rio Grande Chapter of the Sierra Club, Western Resource Advocates, New Mexico Wilderness Alliance, and Defenders of Wildlife. We appreciate your continued consideration of additional routes for SunZia and providing the opportunity to comment.

Clearly, our nation's growing addiction to fossil fuels, coupled with the unprecedented threats brought about by global warming, imperil the integrity of our wildlands as never before. To sustain both our wildlands and our human communities, the undersigned believe the nation must transition away from fossil fuels as quickly as possible. To do this, we must eliminate energy waste, moderate demand through energy efficiency, conservation, and demand-side management practices, and rapidly develop and deploy clean, renewable energy technologies, including at the utility-scale. New transmission lines will also be necessary in some cases to bring remote renewable energy resources to population centers. Renewable energy and associated transmission development is not appropriate everywhere on the public lands, however, and thorough review under the National Environmental Policy Act of 1969 (NEPA) is an essential part of determining which of the many proposed utility-scale projects should be permitted to go forward.

We strongly believe that long-term, environmentally responsible success of the Bureau of Land Management's renewable energy and transmission program depends on developing policy and guidelines that guide projects to the most appropriate locations, thus limiting environmental impacts and reducing obstacles to construction of the most appropriate projects. We are submitting these comments in the hope that SunZia can find a route that provides transmission access to renewable energy without unacceptable impacts to the wildlands, water and wildlife of our southwestern landscape.

Summary of Findings

These comments build upon and incorporate by reference the three sets of scoping comments we submitted in 2009 (attached for your reference (Attachment A). Note that we have not included

additional copies of the attachments from our three previous sets of scoping comments. If you need additional copies of these attachments, please contact Alex Daue at The Wilderness Society). We also continue to gather additional new information important to this process, and will be submitting supplemental comments including that information after June 10th. We understand that although BLM has not formally extended the scoping deadline, the agency will continue to accept comments after June 10th.[1]

Additional recommendations are provided here on several key issues:

I. Ensuring the Draft Environmental Impact Statement (DEIS) for SunZia includes a clear and robust statement of purpose and need for the project, including mention of potential benefits in achieving a clean energy economy;
II. Continuing to improve and expand opportunities for stakeholder involvement, which will be critical for minimizing impacts and building stakeholder support in the often extremely contentious process of siting transmission lines;
III. Additional information on resources and values that could be impacted along the routes
IV. Recommendation that SunZia follow-through with their intended plan to include a detailed Construction, Operation and Maintenance Plan as part of the DEIS;
V. Additional information on technologies that could be implemented to minimize impacts;
VI. Recommendation of robust cumulative impacts analysis for the many additional projects planned for the area, including but not limited to additional transmission lines;
VII. Recommendations on consideration of a full range of off-site mitigation strategies, in addition to on-site mitigation;
VIII. Recommendation on continued coordination with the Department of Defense to identify potential siting and mitigation solutions that could minimize impacts to the environment while also minimizing impacts to military missions;
IX. Recommendation that BLM make all GIS data developed as part of the EIS process available for download on the BLM project website.

I. Statement of Purpose and Need Should Reflect Potential Project Benefits

The purpose and need statement for this project should be well defined in the DEIS to fully comply with National Environmental Policy Act (NEPA) regulations and reflect the potential benefits of the project. Many DEISs recently published for solar energy projects on public lands include purpose and need statements that are far too narrow. For example, in the original DEIS for the Ivanpah solar project the purpose and need is explicitly limited to a stark dichotomy: "approve" or "deny" the company's application for a solar project and, as the result, the document addressed only the "no action" option and the "proposed project." A supplemental draft with a revised purpose and need and additional alternatives was recently issued in an attempt to remedy this egregious approach to "the heart" of the process established by NEPA.

[1] BLM website for SunZia: "The BLM will continue to accept comments received after the June 10th, 2010 public comment period for the proposed SunZia Southwest Transmission Project." *See* http://www.blm.gov/nm/st/en/prog/more/lands_realty/sunzia_southwest_transmission.html

The BLM should avoid both this mindset as well as too narrow a statement of purpose and need in order to help ensure that its EISs are legally defensible documents.

Recommendation: BLM should avoid a narrow definition of purpose and need for SunZia in the DEIS. Instead, we recommend that BLM adopt language such as:

> The purpose of the proposed action is to facilitate environmentally responsible commercial development of transmission lines to support renewable energy, consistent with the statutory authorities and policies applicable to the Bureau of Land Management, including those providing for contributions towards achieving the renewable energy and economic stimulus and renewable energy development objectives under the Energy Policy Act of 2005 (EPAct), the American Recovery and Re-Investment Act, and Presidential and Secretarial orders.
>
> The need for this action is to implement Federal policies, orders and laws that mandate or encourage the development of renewable energy sources and associated transmission, including the Energy Policy Act of 2005, which requires the Department of the Interior to seek to approve at least 10,000 MW of non-hydropower renewable energy on public lands by 2015, and the Federal policy goal of producing 10% of the nation's electricity from renewable resources by 2010 and 25% by 2025; to enable effective implementation of the economic incentives for qualifying projects intended by the American Recovery and Reinvestment Act; and to support the States of New Mexico and Arizona's renewable energy and climate change objectives, consistent with BLM's mandates and responsibilities.

II. BLM and SunZia Should Expand Public Education and Engagement Before the DEIS is Released

We realize the tremendous challenge of engaging communities and other stakeholders across 500-mile corridor. We also wish to acknowledge SunZia's efforts to engage environmental organizations and other stakeholders early and frequently in the planning process to date. However, we are concerned that the public process and meeting schedule has not been adequate in both educating the broader public about the need for a renewable energy transmission line like SunZia and in engaging a number of communities potentially impacted by transmission line (in Arizona, these include the Avra Valley, Vail, Sulphur Springs, and a number of Tucson neighborhoods). We have some suggestions to address these concerns:

- First, we believe that a comprehensive outreach program is still necessary in order to provide the public with a clearer understanding of how SunZia may contribute to our nation's reduced dependence on carbon fuels and increased reliance on clean, safer, and reliable sources of energy. Such a program should specifically address how the proposed transmission line fits into a broader set of plans for renewable energy development and transmission in the West and the extent to which the proposed transmission line can (or cannot) be characterized as a "renewable energy transmission line."

- Second, we are extremely concerned that releasing a draft EIS with a set of preferred routes without additional public engagement may foster significant public opposition that does not consider the project's potential public benefits. We strongly encourage SunZia and the BLM to consider initiating a stakeholder engagement process that goes beyond the minimum NEPA requirements for public meetings and comment as part of the EIS. Ideally, this should have been started prior the scoping process and engaged representative stakeholders along the entire route. However, we believe that starting such a process before a draft EIS is released could prove extremely valuable in providing constructive suggestions and minimizing conflicts over route selection, project design, and mitigation activities. This process would build on ongoing consultations SunZia has had with community leaders, private landowners, environmental groups, local jurisdictions, and state and federal agencies. We refer you to the Boardman to Hemingway process (www.boardmantohemingway.com), led by Idaho Power, the BLM, the Forest Service, and the Oregon Department of Energy, as a model stakeholder engagement process. In the event that SunZia and the BLM does not initiate such a stakeholder engagement process, we recommend that, at a minimum, additional public meetings in communities likely to be impacted by potential routes are conducted before the draft EIS is released.

III. Additional Information on Opportunities, Constraints, Resources and Values that Could be Impacted Along the Routes, as Well as Potential Modifications to Improve Routes

a. Arizona – Tucson Area

Significant opportunities exist in the Tucson area to avoid impacts to remote, mostly intact ecosystems by co-locating SunZia along existing transmission lines, highways, and other infrastructure. We understand that there are also sensitive and valuable environmental resources in some parts of the Tucson area, as well, and that there are additional challenges to siting transmission lines in urban areas.

We note that the Cascabel Working Group (CWG) is submitting comments that propose an alternative route through the Tucson basin. We believe their proposal may be a viable route and expect the BLM to conduct a thorough analysis of this alternative route. We also recommend that BLM analyze the potential benefits to the reliability of Tucson's electrical grid and ability to meet future load growth if SunZia were routed through or near the city. BLM should also analyze the potential for selection of a Tucson area route for SunZia to obviate the need for construction of other already planned transmission lines, primarily by Tucson Electric Power, in some of the same sensitive regions outside of Tucson that have raised significant concerns in this process.

There are also a number of ongoing planning processes that may have an impact on the SunZia project. We note that the Pima Association of Governments recently released its draft regional transportation plan. The plan outlines a number of enhancements to existing roads and suggests a number of new roads. The BLM should first consider opportunities to align SunZia's transmission line with these suggested road enhancements and, second, opportunities to route its transmission lines with proposed new roads. Pinal County has recently completed its

comprehensive plan. This plan should be consulted as it identified open space, transportation corridors, and other elements that may present constraints or opportunities for the SunZia line. We also recommend consultations with the Arizona Department of Transportation regarding the status of the Phoenix-Tucson intra-city rail feasibility study. Finally, Arizona Game and Fish Department continues to refine their wildlife corridor data that may identify areas where energy development and transmission are not appropriate.

b. Arizona – San Pedro Valley

Biological Resources

The San Pedro Valley has significant habitat value for avian and mammal species and has been a conservation priority for both public agencies and NGOs for several decades. The biological resources in this valley are particularly rich due to the convergence of the Sonoran and Chihuahuan deserts and the presence of numerous Sky Islands which act as connectors between the temperate Rocky Mountains and the semi-tropical Sierra Madres. These four major eco-regions merge in the San Pedro Valley, and bring with them great biodiversity. In this arid part of the southwest the presence of year round water in Hot Springs Canyon and Paige Canyon also adds to the high quality of the habitat and rich biodiversity in the valley.

Mammal species that have been documented in the valley include mountain lion, black bear, coati, javelina, fox, coyote, badger, three skunk species, mule and white-tail deer, ringtail cat, raccoon, bobcat, beaver, and many other smaller or lesser known species. In addition, the valley is a renowned birding area which serves as one of the most important north-south bird flyways in the West. In recognition of its biological importance, the American Bird Conservancy picked the San Pedro as its first "Globally Important Bird Area." In 1988, Congress recognized its value by establishing the nation's first Riparian National Conservation Area along a 45-mile stretch of the upper San Pedro, south of the area crossed by several SunZia alternatives.

We understand that the Cascabel Working Group will soon be submitting a detailed, annotated report of the San Pedro Valley's biological resources to the BLM, and we expect the BLM to fully consider all of the information provided in said document.

Cultural Resources in the San Pedro Valley

As detailed in Attachment A, the San Pedro Valley is also home to numerous cultural resources. We appreciate that you've incorporated the priority cultural resource areas identified by the Center for Desert Archaeology and the National Trust for Historic Preservation in the lower San Pedro Area into your analysis of SunZia routes, as well as additional areas identified as part of the analysis. We also understand that CDA and NTHP will be submitting detailed comments about potential impacts from SunZia in those areas, and we expect BLM to thoroughly consider those comments.

<u>It is important to note that</u> there are also sites outside of these areas so avoidance of these areas does not mean there are not cultural resource issues to analyze but it does try to separate geographically the most significant areas.

c. Arizona – Aravaipa Canyon

Aravaipa canyon is a remote and minimally fragmented area with significant environmental resources that could be impacted by SunZia. Aravaipa is part of a significant set of roadless areas running from the Apache Reservation down to Cochise County in a 100 mile long swath. Attachment A details resources and values in the Aravaipa area.

d. New Mexico – Region North of the Bosque del Apache National Wildlife Refuge

As detailed in Attachment A, any crossing of the Rio Grande River will entail significant impacts to migrating bird populations and other wildlife. We have particular concerns, also detailed in Attachment A, about the impacts of any route which crosses the Rio Grande River north of the Bosque del Apache National Wildlife Refuge (NWR). All routes north of the Bosque del Apache NWR (including the original route and the additional new routes further north) would have unacceptable impacts to migrating birds and wildlife habitat. Unless analysis shows that running the lines underground in this area is feasible and reduces impacts to a level deemed acceptable by the Refuges, these routes should not be brought forward for more thorough evaluation or adopted as the preferred alternative. Based on current knowledge, this recommendation applies to any routes in this area north of Caballo Reservoir.

We understand from personal communication with staff at both Bosque del Apache NWR and Sevilleta NWR that they share the concerns we raised in previous comments regarding any routes crossing the Rio Grande north of the Bosque, and share our support for the route east of the White Sands Missile Range as the least impacts route based on current knowledge.

We also understand Audubon New Mexico is submitting detailed comments on potential impacts from SunZia routes in New Mexico and expect that BLM will thoroughly consider those comments as well.

The new routes would also impact several Citizens' Wilderness Inventory (CWI) areas inventoried by the New Mexico Wilderness Alliance. The importance and sensitivity of these wilderness quality lands is detailed in Attachment A. As shown in the enclosed map (attached as Attachment B), four CWI areas would be impacted by the new routes. SunZia route segments E120, E110, E100 and A90 intersect the Polvadera Mountain, Veranito, Sierra de la Cruz and Stallion CWI areas, respectively, along their boundaries. SunZia route segments E130 and E90 cut through significant portions of the Sierra de la Cruz and Stallion CWI areas, respectively. As described in detail in Attachment A, BLM should avoid any impacts from SunZia on CWI areas and other lands with wilderness characteristics.

Recommendations: BLM should fully analyze the potential opportunities, constraints and impacts for the SunZia routes, including but not limited to those noted in sections III a-d above.

IV. SunZia Should Follow-Through on Their Intended Plan to Include a Detailed Construction, Operation and Maintenance Plan as part of the Draft and Final EISs

We understand that SunZia plans to prepare a detailed Construction Operations and Maintenance (COM) plan and include it as part of the DEIS.[2] Inclusion of a detailed COM plan will be extremely important to allow the public to fully understand, analyze and provide substantive comments on the DEIS.

Recommendation: BLM should include SunZia's detailed COM plan as part of the DEIS.

V. Additional Information on Technologies that Could be Implemented to Minimize Impacts

Transmission technology continues to improve, as do examples of successful implementation of new techniques to minimize impacts, some of which are detailed in Attachment A. These include but are not limited to undergrounding lines, advanced tower designs, using double circuits on compact monopoles and performing tower installation and maintenance with helicopters. Though these advanced approaches can increase technical and economic challenges for projects, they will only become more important to consider as transmission siting continues to grow more difficult and contentious. We note that CWG is submitting comments detailing additional examples of advanced technologies, and recommend BLM fully analyze opportunities to employ these technologies in the DEIS.

Recommendation: BLM should analyze potential implementation of advanced technologies to minimize impacts in the DEIS, and where appropriate, require that they be used.

VI. BLM Should Include a Robust Cumulative Impacts Analysis in the DEIS

In order to properly site transmission projects, it is essential that a cumulative impacts analysis be conducted to fully evaluate the implications of this type of development on public lands. We are aware of several other projects planned in the SunZia project area, including several new transmission lines planned by Tucson Electric Power. It is highly likely that there are other projects planned along the 460 mile route of which we are not aware. These projects will contribute to overall cumulative impacts to sensitive resources in this area, and while some of them are not being permitted by BLM, all reasonable efforts must be made to obtain information regarding their potential impacts and construction timing so that a full picture of cumulative impacts can be presented in the DEIS.

A comprehensive cumulative impacts analysis including the evaluation of such projects will strengthen the DEIS, including defining appropriate associated mitigation measures, and will contribute to more informed decision-making.

Recommendation: BLM should conduct a thorough cumulative impacts analysis for the DEIS, including but not limited to additional transmission lines planned for the area.

VII. BLM Should Analyze and Require Implementation of a Full Range of Off-site Mitigation Strategies, as well as On-Site Mitigation

[2] Personal communication with Tom Wray, SunZia project manager, May 21, 2010.

Though SunZia has the possibility of providing significant benefits by facilitating renewable energy development and thus reducing greenhouse gas emissions from electricity production, there will be significant environmental impacts from developing the project. These impacts should be avoided to the greatest extent possible by siting in areas with low resource values and minimized and mitigated to the best degree possible, using best management practices, the best available technology (also discussed in section V above), and innovative strategies for both on and off-site mitigation. For this EIS, we request development of a mitigation component that provides for no net loss in habitat for wildlife species. We also request that this component be included in the preferred alternative in the DEIS.

In accordance with BLM policy, the following factors indicate that off-site mitigation is appropriate for this project:

- The SunZia SW Transmission Project is a major electrical right-of-way project, one of the types of large development projects for which offsite mitigation may be appropriate;
- The SunZia SW Transmission Project line is likely to affect resources and values of high public importance;
- The SunZia SW Transmission Project line may have permanent impacts that cannot be mitigated onsite.

a. BLM should implement a "no net loss" or a "net gain" requirement for resources and values

BLM should ensure that any loss of resources or values associated with the SunZia project is compensated with the addition and protection of equivalent or better resources and values offsite. For example, for high quality habitat which is relatively scarce or becoming scarce on a national basis or in the ecoregion section, BLM should ensure no net loss of in-kind habitat value. Additions of lands and resources should equal or exceed the value of any resources or values which are lost. BLM should also make a determination about the value of the habitat to be impacted and adopt direction for mitigation requirements for the specific habitat types impacted.

Additions could be gained through some combination of three primary mechanisms; however, requirements should ensure that the majority of mitigation efforts be focused on the first two mechanisms, with the highest priority given to acquisition:

- Purchase of additional private lands to be put in the federal estate under conservation management to guarantee the maintenance of the equivalent or better values and resources lost on the project site, or
- Additional conservation designations on existing federal lands which would permanently protect the equivalent or better resources and values lost on the project site, or
- Restoration and research efforts to improve the quality and quantity of equivalent resources and values off-site.
- If the selected route impacts water resources, mitigation for those impacts could be addressed by purchase of water rights

b. Off-site mitigation should be required to take place in the same ecoregion as the project site, and as locally as possible wherever feasible

The World Wildlife Fund defines an ecoregion as a "large unit of land or water containing a geographically distinct assemblage of species, natural communities, and environmental conditions."[3] Ecoregional health is critical for maintaining the health of individual ecosystems within the ecoregion. In addition to ensuring that off-site mitigation meets a “no net loss” requirement for resources and values lost on the project site and is tied to the species being impacted, BLM should require that mitigation take place in the same ecoregion as the project site, to ensure the continued health of the overall ecoregion. In situations where availability of private lands for purchase and addition to the federal estate under conservation protection is limited additional conservation designations on existing BLM land, as well restoration, research, and other mitigation measures, will be necessary.

As impacts from SunZia will vary significantly across the 460 mile project distance, wherever possible BLM should require that off-site mitigation be implemented on a far more local scale than simply in the same ecoregion as the impact.

Recommendations: BLM should analyze and require implementation of a full range of off-site mitigation strategies, including those outlined above, as well as requiring robust on-site mitigation.

VIII. BLM Should Continue Coordination with the Department of Defense

Military readiness, healthy natural resources, and the development of renewable energy are all essential to our national interests. Therefore, BLM should continue coordination with the Department of Defense (DOD) to identify potential siting and mitigation solutions that could minimize impacts to the environment while also minimizing impacts to military missions. It is our understanding that some of the routes which appear to have the least environmental impacts have raised concern at some local military installations because of potential impacts to their mission.

There are significant opportunities for collaboration and compromise with DOD, as detailed in Attachment A. Thorough analysis of potential mitigation opportunities is critical to define what the true impacts of SunZia will have on military missions. Renewable energy generation and transmission projects across the west are facing challenges with potential impacts to DOD, and BLM should proactively work with all stakeholders to identify solutions for individual projects as well establishing better coordination at the programmatic level.

Recommendation: BLM should continue coordination with DOD to identify potential siting and mitigation solutions that could minimize impacts to the environment while also minimizing impacts to military missions.

IX. BLM Should Provide All GIS Data Gathered as Part of the EIS Process for Download on the Project Website

[3] http://www.worldwildlife.org/science/ecoregions/delineation.html

Significant and important GIS data are being gathered as part of the EIS process for SunZia, and it is critically important for the public to have access to it to help understand, analyze and make substantive comments on the proposed project. BLM should follow the model set in other EIS processes run by BLM, including the Solar Programmatic EIS (PEIS), Geothermal PEIS, and West-wide Energy Corridors PEIS, as well as processes such as the Western Governors' Association Western Renewable Energy Zone Project, and provide the data for download on the project website.[4]

Thank you for your thorough consideration of these comments.

Sincerely,

Alex Daue, Renewable Energy Coordinator
The Wilderness Society – BLM Action Center
1660 Wynkoop St. Suite 850
Denver, CO 80202

John Shepard, Senior Adviser
Sonoran Institute
7650 E. Broadway Blvd., Suite 203
Tucson, Arizona 85710

Helen O'Shea, Deputy Director, Western Renewable Energy Project
Natural Resources Defense Council
111 Sutter Street, 20th Floor
San Francisco, CA 94104

Dan Lorimer, Conservation Coordinator
Sierra Club – Rio Grande Chapter
300 N. Downtown Mall
Las Cruces, NM 88001

Gary Graham, Transmission Project Director
Western Resource Advocates
2260 Baseline Rd., Suite 200
Boulder, CO 80302

Nathan Small, Conservation Coordinator
New Mexico Wilderness Alliance

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[4] *See* http://solareis.anl.gov/eis/maps/index.cfm; http://www.blm.gov/wo/st/en/prog/energy/geothermal/geothermal_nationwide/Documents/GIS_Data.html; http://corridoreis.anl.gov/eis/fmap/gis/ ; http://www.westgov.org/index.php?option=com_content&view=article&id=224:wrez-zone-identification-a-technical-analysis&catid=102:initiatives

275 N Downtown Mall
Las Cruces, NM 88001

Matt Clark, Southwest Representative
Defenders of Wildlife
110 S. Church Ave. Suite 4292
Tucson, AZ, 85701

The Wilderness Society Sky Island Alliance Western Resource Advocates
New Mexico Wilderness Alliance Coalition for Sonoran Desert Protection
Sierra Club – Grand Canyon Chapter Natural Resources Defense Council
Arizona Wilderness Coalition Southwest Environmental Center
Audubon New Mexico New Mexico Audubon Council
Sierra Club – Rio Grande Chapter

August 28th, 2009

Delivered via electronic mail (adrian_garcia@nm.blm.gov; nmsunziaproject@blm.gov) and U.S. mail.

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

Re: Scoping comments on the proposed SunZia transmission project

Dear Mr. Garcia,

Please accept and fully consider these comments on the proposed SunZia transmission project (SunZia) by The Wilderness Society, Sky Island Alliance, Western Resource Advocates, and the New Mexico Wilderness Alliance; and on behalf of the Coalition for Sonoran Desert Protection, the Grand Canyon Chapter of the Sierra Club, Natural Resources Defense Council, the Arizona Wilderness Coalition, the Southwest Environmental Center, Audubon New Mexico, the New Mexico Audubon Council, and the Rio Grande Chapter of the Sierra Club. These comments supplement the comments submitted on July 13th, 2009, with additional signatories and additions and revision to sections II D and III D. Additional copies of the original attachments are not included, but we are happy to provide them upon request. The new attachment referenced in the revised section II D is included.

The mission of The Wilderness Society is to protect wilderness and inspire Americans to care for our wild places. We have worked for more than 70 years to maintain the integrity of America's wilderness and public lands and ensure that land management practices are sustainable and based on sound science to ensure that the ecological integrity of the land is maintained. With over 500,000 members and supporters nation-wide, TWS represents a diverse range of citizens.

Sky Island Alliance is a grassroots organization dedicated to the protection and restoration of the rich natural heritage of native species and habitats in the Sky Island region of the southwestern United States and northwestern Mexico.

Founded in 1989, Western Resources Advocates (WRA) is a non-profit environmental law and policy organization dedicated to restoring and protecting the land, air, water and wildlife resources within the interior Western United States. Specifically, our team of

lawyers, policy analysts and economists works to: (1) promote a clean energy future for the Interior West that reduces pollution and the threat of global warming; (2) restore degraded river systems and to encourage urban water providers to use existing water supplies more efficiently; and (3) protect public lands and wildlife throughout the region.

The New Mexico Wilderness Alliance and its more than five thousand members are also dedicated to the protection, restoration and continued enjoyment of New Mexico's wildlands and wilderness areas.

It is clear that the nation's growing addiction to fossil fuels, coupled with the unprecedented threats brought about by global warming, imperil the integrity of our wildlands as never before. To sustain both our wildlands and our human communities, The Wilderness Society and the undersigned believe the nation must transition away from fossil fuels as quickly as possible. To do this, we must eliminate energy waste, moderate demand through energy efficiency, conservation, and demand-side management practices, and rapidly develop and deploy clean, renewable energy technologies, including at the utility-scale.

Our public lands harbor substantial wind, solar, and geothermal resources. Developing some of these resources will be important to creating a sustainable energy economy and combating climate change, and The Wilderness Society and the undersigned support such responsible development of renewable energy. Renewable resource development is not appropriate everywhere on the public lands, however, and development that does occur on the public lands must take place in a responsible manner.

Though renewables should be developed first in areas close to existing transmission and demand, new transmission will be necessary to access stranded resources with no current access. Like renewables siting and development, this transmission must be sited and built in the best way possible, using an open, stakeholder driven process to identify and address siting conflicts early and aggressively pursuing all available options to minimize and mitigate any unavoidable impacts. This approach is of even more importance in the case of SunZia, because if the rich wind and solar resources accessed by the lines are to be developed fully, multiple additional lines will be necessary going forward. These additional lines should be sited in the same corridor as the SunZia lines to minimize impacts. With the potential for multiple high-voltage lines paralleling SunZia, it is of paramount importance that the SunZia corridor be chosen well.

Issues Addressed

I. Sun Zia's Proactive, Collaborative Approach to Siting To Date: A Model for Transmission and Energy Project Planning

Active public engagement to identify and address siting and development issues early in the process provides the best chance for renewables and transmission projects to succeed, both in terms of limiting environmental and other impacts and avoiding serious conflicts that can prevent good projects from being built. SunZia, LLC (the applicant) has

proactively sought input from the environmental community for nearly a year prior to the initiation of scoping and the public NEPA process. This proactive engagement has allowed siting and development issues to be identified and begun to be addressed as early as possible, providing more flexibility in identifying alternative locations and measures to minimize impacts. This approach does not guarantee success – only through completion of a robust Environmental Impact Statement (EIS) will all impacts and mitigation measures be identified, at which point the project can be evaluated for whether it should be built or not. However, a proactive approach offers the best chance of a positive outcome.

A. Need for Ongoing Open Collaboration Throughout the Project Permitting and EIS process

The proactive approach begun by the applicant should be maintained throughout the development of the EIS, in coordination and cooperation with the BLM and the consultant hired to prepare the EIS, Environmental Planning Group (EPG). Every opportunity available should be afforded the public to understand and participate in the EIS process.

Recommendations: The applicant, BLM, and EPG should maintain a proactive approach to maximizing public engagement in the EIS process. This could include additional public meetings, opportunities for site visits and field tours, publication of preliminary draft alternatives prior to the publication of the Draft EIS, and other efforts to ensure robust public involvement.

B. Importance of Adopting this Model for All Planning Efforts

The proactive approach maintained by the applicant to-date should be a model for all planning efforts, and BLM should highlight this approach and employ and continue to improve it in all its planning efforts.

Recommendations: BLM should highlight the proactive approach of the applicant and employ and continue to improve this model for all its planning efforts.

II. Flexibility for Alternatives and Better Options for Siting and Constructing Transmission Lines

Development of large-scale transmission facilities will have significant impacts on the lands upon which they are located. These impacts include direct impacts from road construction, siting of tower pads and support infrastructure, and potential for bird and bat collisions with towers and wires; as well as indirect impacts such as habitat fragmentation, increased predation from perching raptors, and viewshed impacts. An inappropriately sited and constructed transmission line has the potential to cause significant damage to the environment and to human health. Accordingly, it is crucial that the BLM commit to avoiding sensitive areas, obtain necessary information on lands with

wilderness characteristics and consider maximizing use of existing development corridors in siting transmission lines.

A. Areas to Avoid

We appreciate the BLM's acknowledgment that study of potential impacts to sensitive resources will be necessary as part of the EIS process. In addition to study of these potential impacts, BLM should identify areas to avoid in determining proposed and alternate routes for SunZia. Certain places are not appropriate for large-scale transmission lines and certain categories of lands should be avoided. Based on their important natural values and potential for damage from the construction, use and maintenance of transmission lines, we recommend that the Draft EIS include a commitment to not siting proposed and alternative routes in the following areas on BLM lands:

1. Wilderness Areas;
2. Wilderness Study Areas (WSAs);
3. National Monuments;
4. National Conservation Areas;
5. Other lands within BLM's National Landscape Conservation System (NLCS), such as Outstanding Natural Areas;
6. National Historic and National Scenic Trails;
7. National Wild, Scenic, and Recreational Rivers, study rivers and segments, and eligible rivers and segments;
8. Areas of Critical Environmental Concern (ACECs);
9. Special Recreation Management Areas;
10. Threatened, endangered and sensitive species habitat, as well as critical cores and linkages for wildlife habitat;
11. Citizen-proposed wilderness areas; and
12. Other lands with wilderness characteristics.

This category should also include lands that are included in pending legislation for designation in one of the above categories or would otherwise include provisions that prohibit siting of large-scale transmission lines.

Recommendations: SunZia should not be sited in the categories of lands listed above.

B. Maximizing Use of Impaired Lands and Existing Infrastructure

In addition to avoiding ecologically-sensitive lands, we recommend that already impaired lands be considered first for siting SunZia. We appreciate BLM's commitment to prioritizing siting in these areas, as stated in the Federal Register Notice of Intent (NOI) - "To the extent feasible, the proposed route would use existing transmission line corridors and designated utility corridors located on Federal land." (NOI p. 3)

Existing ROWs, degraded agricultural lands, and other already impacted areas provide opportunities for siting transmission lines without loss of other uses and values. Such

sites are often close to existing infrastructure, which provides additional benefits. Proximity to existing infrastructure will minimize new road construction or major roadway improvements (such as paving and widening), avoiding another set of impacts on the public lands.

Recommendations: Proposed and alternative routes for SunZia should specifically prioritize use of degraded lands that are not identified for restoration and sites with proximity to existing infrastructure to avoid unnecessary impacts on public lands.

C. Identification of Additional Feasible Alternative Routes

BLM should identify additional feasible alternative routes as part of the EIS. Significant resource conflicts exist in several locations along the proposed and alternative routes identified in the Map of Preliminary Study Corridors[1], and additional alternatives should be identified and evaluated. These alternatives include, but are not limited to:

i. A route inside of the White Sands Missile Range in New Mexico

A route should be considered running east of the existing alternative route along the western border of the White Sands Missile Range (WSMR). An alternative route just inside the border of the WSMR would allow SunZia to cross the Rio Grande River between Arrey and Derry while avoiding the Antelope and Jornada del Muerto WSAs and Citizens' Wilderness Proposal units south of there. A Rio Grande crossing between Arrey and Derry is far preferential to a crossing near San Antonio, where impacts to birds flying back and forth between the Bosque del Apache National Wildlife Refuge and Bernardo State Wildlife Area would be significant. The Rio Grande is also much more narrow and channelized, with much less ecologically important bosque adjacent, between Arrey and Derry. The route could enter the WSMR just south of the Dugout Canyon Citizens' Wilderness Proposal area, about halfway between the Sierra and Dona Ana County lines (also see attached GIS data for Citizens' Wilderness Proposal areas).

ii. A route which continues to follow I-10 in Arizona

A route should be considered heading west in Arizona which continues to follow I-10 where the existing alternative route heads northwest to the proposed Willow substation, then continuing along existing highways and transmission lines NW to the Tortola substation. Such a route would avoid the sensitive resources in the Aravaipa Valley, Aravaipa Canyon, the northern Pinaleño Mountains, the northern Galiuro Mountains, and the San Pedro River Valley.

Recommendations: BLM should consider alternative routes, including those identified above, which avoid significant impacts along existing proposed and alternative routes.

D. Possible Mitigation Strategies

Though SunZia has the possibility of providing significant benefits by facilitating renewable energy development and thus reducing greenhouse gas emissions from

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1 http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/more/lands_and_realty/sunzia/sunzia_maps.Par.12943.File.dat/SZSW_OV%20Mar%205%202009.pdf

electricity production, there will be significant environmental impacts from developing the project. These impacts should be minimized and mitigated to the best degree possible, using best management practices, the best available technology, and innovative strategies.

BLM is obligated to manage the public lands to protect their varied natural resources. For instance, the Federal Land Policy and Management Act requires the BLM to "minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved." 43 U.S.C. §1732(d)(2)(a). In order for the agencies to rely on mitigation to reduce potentially significant impacts, NEPA requires that the agencies make a firm commitment to the mitigation and discuss the mitigation measures "in sufficient detail to ensure that environmental consequences have been fairly evaluated…"[2] NEPA defines "mitigation" of impacts (at 40 C.F.R. § 1508.20) to include:

- Avoiding the impact altogether by not taking a certain action or parts of an action;
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
- Compensating for the impact by replacing or providing substitute resources or environments.

BLM must "analyze the mitigation measures in detail [and] explain how effective the measures would be . . . A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA."[3]

Valuable mitigation measures include siting as much of the project as possible on already disturbed lands and developing restoration plans for all temporarily used areas. Specific mitigation strategies for transmission projects can be found in the Final PEIS for West-wide Energy Corridors (Chapter 2.4).

i. Burying Lines in Key Places

Underground transmission lines could be used to avoid impacts from large-scale transmission development along the SunZia route. Where consistent with environmental goals such as conservation of soil quality and plant life, the option to bury transmission lines should be considered where lines pass through high quality desert viewsheds or sensitive wildlife habitat of birds and/or bats.

While undergrounding Extra High Voltage (EHV) lines poses some additional technical challenges related to reactive power management and resistive heating losses, these can ultimately met through appropriate compensation and increased conductor cross-

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[2] Communities, Inc. v. Busey, 956 F.2d 619, 626 (6th Cir. 1992).
[3] Northwest Indian Cemetery Protective Association v. Peterson, 764 F.2d 581, 588 (9th Cir. 1985), rev'd on other grounds 485 U.S. 439 (1988).

sections/conductivities[4]. Ultimately the technical hurdles associated with installing underground lines are cost and engineering issues, not fundamental constraints. Furthermore, if underground portions are limited to short distances where impact is most acute, additional compensation requirements can be minimized or eliminated. Such targeted undergrounding of critical paths would also greatly contain impact on total project costs while protecting critical species and viewsheds.

Underground segments carefully planned for cost-effectiveness and feasibility at a site-specific level have the potential to maintain natural landscapes while facilitating the development of location-constrained renewable generation far from load centers.

Several technologies exist for undergrounding EHV lines[5]. Some underground Extra High Voltage systems involve placing three conductors in a large underground pipe that becomes very hot and is filled with pressurized oil for insulation. Above ground pressure stations are erected at frequent intervals along the path to maintain pressure. A breach of the underground system is not only extremely difficult to locate, but could have severe environmental impacts, leaking pressurized oil into the earth and groundwater. For these reasons, careful analysis of potential impacts from both running lines above and below ground will be necessary to determine which option is more environmentally sensitive. A report by Argonne National Laboratory, *The Design, Construction, and Operation of Long-Distance High-Voltage Electricity Transmission Technologies*, explores the potential environmental costs and benefits from burying transmission lines (attached, p. 57). Other technologies may help limit these risks. Underground lines can also be insulated with gas or cross-linked polyethelene (XPLE), which may have fewer potential environmental risks[6]. These alternatives should be studied in the EIS.

Recommendations: Specific mitigations strategies should be analyzed and committed to in the EIS. Mitigation measures must be mandatory and based on credible science. BLM should consider the option of requiring construction of underground transmission lines where proposed rights-of-way pass through sensitive wildlife habitat, viewsheds and wherever possible to maintain the natural character of the desert landscape. BLM should carefully consider the impacts on soil and plant life that such underground transmission lines may have, as well as any potential impacts from leaks or spills from the underground system. BLM should study the potential impacts of both burying lines (including analysis of all available technologies for burying lines, including but not limited to oil cooled, gas cooled, and XPLE insulated lines) and keeping them above ground, weigh the pros and cons of these alternatives, and make recommendations in the EIS for the most environmentally sensitive alternative. BLM should also require the use of best management practices and innovative technologies, including but not limited to

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[4] Overview of the Potential for Undergrounding the Electricity Networks in Europe, Report for the European Commission. ICF Consulting, 2003. http://ec.europa.eu/energy/gas_electricity/studies/doc/electricity/2003_02_underground_cables_icf.pdf

[5] Important Factors Affecting Underground Placement of Transmission Facilities. American Electric Power. http://www.aep.com/about/i765project/docs/UGvsOVHDPaper.pdf

[6] Ibid.

those identified above, to minimize impacts. These strategies will only work if they are mandatory and likely to tie in to the challenges specific to this project.

ii. Require the Use of Best Management Practices and Innovative Technologies to Minimize Impacts

BLM should require the use of best management practices and innovative technologies to minimize impacts. These could include, but are not limited to the best management practices and mitigation strategies identified in the Final PEIS for West-wide Energy Corridors (Chapter 2.4).

Recommendations: Specific mitigations strategies should be analyzed and committed to in the EIS. Mitigation measures must be mandatory and based on credible science. BLM should consider the option of requiring construction of underground transmission lines where proposed rights-of-way pass through sensitive wildlife habitat, viewsheds and wherever possible to maintain the natural character of the desert landscape. BLM should carefully consider the impacts on soil and plant life that such underground transmission lines may have, as well as any potential impacts from leaks or spills from the underground system. BLM should study the potential impacts of both burying lines (including analysis of all available technologies for burying lines, including but not limited to oil cooled, gas cooled, and XPLE insulated lines) and keeping them above ground, weigh the pros and cons of these alternatives, and make recommendations in the EIS for the most environmentally sensitive alternative. BLM should also require the use of best management practices and innovative technologies, including but not limited to those identified above, to minimize impacts. These strategies will only work if they are mandatory and likely to tie in to the challenges specific to this project.

E. The Department of Defense Should Become a Cooperating Agency

In order to explore opportunities to for alternative siting within the WSMR which would avoid significant impacts to both the Rio Grande River corridor and the Antelope and Jornada del Muerto WSAs, as well as other resources, the Department of Defense should become a cooperating agency.

Recommendations: BLM should work with DOD to ensure that DOD joins the EIS process as a cooperating agency.

III. Issues Already Identified – to be Analyzed in Sufficient Detail and in Continuing Analysis After Scoping

A. Land Use, with Special Attention to Consistency with Local Government Land Use Plans

Wherever possible, consistency with local land use plans is of paramount importance in ensuring compatibility of SunZia with existing laws, ordinances, regulations and standards.

Recommendations: BLM should ensure SunZia is as consistent as possible with local land use plans, laws, ordinances, regulations and standards.

B. Potential Impacts on Wildlife Habitat, Plants and Animals Including Threatened, Endangered and Sensitive Species

Significant biological resources could be impacted by construction of SunZia. The following is a description of some of the resources along parts of the proposed and alternative routes.

In New Mexico, it appears that the preferred route goes through the Nutt Grasslands, a sensitive grasslands ecosystem with rich and varied wildlife and plant species.

There is an existing major gas pipeline and utility corridor that mostly follows I-10 from at least the Lordsburg area to Tucson. This pipeline has undergone a major upgrade over the past three years and the area is currently disturbed. This utility corridor would make a good location for additional energy infrastructure and should be explored.

The preferred route from the Safford area west would likely cause significant impacts and is likely to cause significant concern and controversy. The route would run directly between two (Mt. Turnbull/Santa Teresa Mountains, and the Pinaleno Mountains/Mt. Graham) of the four sacred mountains of residents on both the San Carlos and White Mountain Apache Tribes. The Pinaleno Mountains (aka Mt. Graham) have been found by the Forest Service to be eligible for a “Traditional Cultural Property” designation.

Continuing west, the preferred route passes between the Galiuro Wilderness, and the Aravaipa Canyon Wilderness. Aravaipa in particular, is widely considered to be one of ecological and aesthetic gems of the region, and a very popular destination for folks looking to “get away” from civilization and have a unique outdoor experience. This is very remote land with little sign of human impacts. This route would likely cause significant impacts and is likely to cause significant concern and controversy.

Aravaipa Canyon is nationally recognized as one of Arizona’s most valuable biological areas. It is known for its scenic towering cliffs, lush riparian vegetation, multiple species of native fish and wildlife and its astounding beauty and naturalness. The perennial flow of Aravaipa Creek links 3 mountain ranges, 3 wilderness areas and maintains migratory corridors for both large mammals and birds, making it a crucial component to maintaining biodiversity and ecological integrity in southeastern Arizona.

The integrity of Aravaipa Creek’s stream flow depends heavily on the ecological health of the surrounding watershed. The Aravaipa Canyon watershed is bounded on the east by a low divide in the northwest Sulphur Springs Valley and on the west by the San Pedro River south of the town of Winkleman, Arizona. On the northeast the canyon is bounded by the Pinaleño and Turnbull-Santa Teresa ranges and on the southwest by the Galiuro Mountain range, the very north end of which is traversed by the creek. The watershed comprises approximately 1,400 km^2 and the perennial flow of the creek originates from

unconsolidated sediments of the streambed 6.4 to 5.5 km northwest of the town of Klondyke. The watershed to the north and south of the existing Aravaipa Canyon Wilderness consists of tablelands cut by numerous tributary drainages that feed into Aravaipa Creek.

Three Areas of Critical Environmental Concern (ACEC) lie within the Aravaipa Canyon Watershed Management area including Turkey Creek, Table Mountain and Desert Grasslands. Table Mountain and Desert Grasslands are also designated as Research Natural Areas (RNA). Areas of Critical Environmental concern are defined by the BLM to be areas where "special management attention is required to protect and prevent irreparable damage to public land and/or related waters containing resources, values, systems, processes, or hazards identified, designated, and protected through the land-use planning process." These areas must have significant cultural, scenic value; fish or wildlife resources; or other natural processes or systems, and must have substantial significance or value. This requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. Research Natural Areas are areas that contain important ecological and scientific values and are managed for minimum human disturbance. They are primarily used for non-manipulative research and baseline data gathering on relatively unaltered community types. They make excellent controls for similar communities that are being actively managed.

The Turkey Creek ACEC consists of 2,326 acres that adjoins a portion of the Aravaipa Canyon Wilderness at its southeast end and contains two riparian woodlands. The area has significant cultural and scenic values and is an important wildlife resource and riparian area. The area is threatened by off road vehicle (ORV) use, unregulated camping and current and potential resource extraction.

The Table Mountain ACEC contains two plant communities of concern. These include an alligator juniper savanna at the top of Table Mountain that exists in less than 20 locations and a white oak woodland containing Mexican blue oak in the adjoining Sycamore and Saddle Canyons. The total area encompasses 1,220 acres to the south of the canyon and of concern in this area is ORV use, prescribed fire and preventing mineral withdrawal and vegetation impacts.

The Desert Grasslands ACEC is significant due to its relict desert grasslands which are an important baseline for management objectives. Desert grasslands are widely used for the majority of grazing in the desert southwest but also provide critical habitat for 13 state-listed wildlife species and are important for watershed stabilization. The retention of undisturbed tracts of relict desert grasslands is of value to BLM management and scientific research (BLM, 1991). The Desert Grasslands area is greatly threatened by ORV use, livestock grazing, and could benefit from a prescribed fire plan. It consists of 840 acres with three areas of undisturbed desert grasslands on two different soil types.

Today in Arizona, these riparian and wetland communities have become totally restricted to drainages that provide the necessary water supply throughout the growth season. Riparian corridors are the most endangered of Arizona's environments, with less than 10

percent remaining in an essentially natural state. These remaining corridors support an amount of species that is very disproportionate to their size. They are crucial corridors for species movement and stopover points for migrating species.

Table 1, below, lists special status species in the Aravaipa Canyon watershed.

Table 1. Special Status Species in the Aravaipa Canyon Watershed

COMMON NAME	SCIENTIFIC NAME	STATUS
Allen's big-eared bat	*Idionycteris phyllotis*	S
American peregrine falcon	*Falco peregrinus anatum*	SC, WC
Aravaipa sage	*Salvia amissa*	S
Aravaipa wood fern	*Thelypteris puberula var. sonorensis*	S
Arizona giant sedge	*Carex spissa* var. *ultra*	S
Bald eagle	*Haliaeetus leucocephalus*	LT, WC
Belted kingfisher	*Ceryle alcyon*	WC
Black-bellied whistling-duck	*Dendrocygna autumnalis*	WC
Buff-collared nightjar	*Camprimulgus ridgwayi*	S
Catalina beardtongue	*Penstemon discolor*	HS
Cave myotis	*Myotis velifer*	S
Common black-hawk	*Buteogallus anthracinus*	WC
Desert sucker	*Catostomus clarki*	S
Fringed myotis	*Myotis thysanodes*	S
Gila chub	*Gila intermedia*	WC
Gila topminnow	*Poeciliopsis occidentalis*	LE, WC
Loach minnow	*Tiaroga cobitis*	LT, WC
Longfin dace	*Agosia chrysogaster*	S
Lowland leopard frog	*Rana yavapaiensis*	WC
Mexican spotted owl	*Strix occidentalis lucida*	LT, WC
Northern goshawk	*Accipiter gentilis*	WC
Northern gray hawk	*Asturina nitida maxima*	WC, S
Roundtail chub	*Gila robusta*	WC
San Carlos wild-buckwheat	*Eriogonum capillare*	SR
Sonora sucker	*Catostomus insignis*	S
Sonoran desert tortoise	*Gopherus agassizii*	LT, WC
Speckled dace	*Rhinichthys osculus*	S
Spikedace	*Meda fulgida*	LT, WC
Toumey agave	*Agave toumeyana* var *bella*	SR
Western red bat	*Lasiurus blossevillii*	WC
Western yellow-billed	*Coccyzus americanus*	WC

cuckoo	*occidentalis*	
LE – Listed Endangered under the Endangered Species Act LT – Listed Threatened under the Endangered Species Act	WC – Wildlife of Special Concern in Arizona. S – BLM Sensitive HS – Arizona Native Plant Law Highly Safeguarded SR – Arizona Native Plant Law Salvage Restricted	

The route up the Sulphur Springs Valley (between the Galiuros and Pinalenos) would likely cause significant impacts and is likely to cause significant concern and controversy. This is an open valley with farms and some limited development for about 15 miles north of Wilcox, with limited development (very few and very scattered houses past that point into the upper valley).

The route up and across the San Pedro Valley will also pose significant impacts. The local residents are very conservation minded and there are a number of protected area along and adjacent to the river, including one owned by Pima County, and several owned and/or administered by The Nature Conservancy. The San Pedro River is world renowned conservation and birding area (one of the designated "Last Great Places") and highly treasured for its natural setting.

***Recommendations*:** BLM should thoroughly analyze impacts to biological resources and minimize and mitigate impacts through alternative siting and other mitigation strategies.

C. Visual Resources and Related Viewsheds

A viewshed is the entire landscape seen from a single observation point. Unobstructed viewsheds contribute to the sense of solitude and remoteness that is an important quality to the visitor experience. Visual resource management should be an integral planning consideration for transmission lines. To the greatest extent possible, viewshed areas designated as visual resource management Class II should be avoided, and Class I areas should be excluded from development altogether.

Recommendations: BLM should direct transmission line development to alternate locations away from sensitive viewshed areas that qualify as visual resource management Class II and areas identified as high quality viewsheds in public comments. BLM should exclude Class I visual resource management areas from development. Any impacts which are unavoidable should be minimized and mitigated to the greatest extent possible.

D. Adequately Identify the Historic and Cultural Resources Potentially Impacted by the Proposed Project and Evaluate the Project's Direct, Indirect and Cumulative Impacts

This section of comments is included with permission of the National Trust for Historic Preservation (the National Trust) and Center for Desert Archaeology (CDA), the authors of this section. With their permission, slight modifications of their original comments have been made to fit the tone and format of this comment document.

Pursuant to NEPA and NHPA, BLM must seek to identify significant historic and cultural resources within the area proposed for the SunZia project. Adequate identification of these resources is critical for evaluating the project's potential direct, indirect and cumulative impacts. In turn, this evaluation will help to direct BLM to choose or propose additional alternatives that best avoid and mitigate adverse effects to historic and cultural resources. CDA and the National Trust want to emphasize that impacts come not simply from physical construction, but rather also can stem from the creation of new vehicular access routes that could increase the likelihood of looting and vandalism of many archaeological sites and inappropriate and destructive use of Native American sacred sites.

Below are descriptions of some of the specific resources and resource areas that BLM should carefully consider when identifying and evaluating the potential impacts associated with the proposed project:

Archaeological Sites in Arizona

Many prehistoric and historic cultural resources are located along the path of and in close proximity to the proposed 1000-foot primary transmission line right-of-way and alternative rights-of-way. Direct impacts to these resources, such as from ground disturbing construction activities, should be evaluated in the EIS. Indirect impacts to resources are of equal concern and also require evaluation. They include erosion and/or increased sedimentation resulting from construction activities, as well as artifact collecting and vandalism resulting from increased public access. Below we describe some specific locations that contain significant and sensitive cultural resources that should be thoroughly considered in the SunZia project EIS.

The most sensitive locations for cultural resources within the proposed project area in Arizona occur in the foothills of the Pinaleno Mountains, upper Aravaipa Creek, the lower San Pedro River valley and the Picacho Mountains—all of which are crossed by proposed or alternate routes. This fact again highlights the importance of considering using existing transmission corridors to meet additional demand.

First, the segment of the proposed route from the future Willow substation to the existing 500kV line in eastern Pinal County that traverses the Safford Basin, Aravaipa Valley and lower San Pedro Valley is of particular concern regarding cultural resources. The San Pedro and Aravaipa drainages contain near-complete records of 12,000 years of past human activity, including both Native American and Euro-American. This scale of regional preservation provides an opportunity to interpret sites as part of a broad cultural and economic landscape rather than as isolated phenomena. The great time depth allows us to study changes in this human landscape over the full time span during which people

have inhabited the New World. Such opportunities are no longer available in many Arizona valleys (e.g., Phoenix, Tucson, Safford) where agricultural and, subsequently, urban development destroyed much of the archaeological record before adequate documentation could take place.

Considering the non-renewable character of cultural resources, CDA has worked diligently over the last 27 years to help preserve this important cultural landscape for current and future stakeholders, including Native American groups, archaeologists, local residents and the interested public. While doing so, CDA and other researchers have identified over 500 archaeological sites in the lower San Pedro Valley. About one third of these sites contain architecture and probably human remains. Furthermore, at least 40 sites were villages inhabited by 100 to 250 people for a century or more and they are marked today by rich archaeological deposits that include thousands of ancient houses and scores of public structures such as ballcourts and platform mounds, as well as large burial areas. To date, a great deal of effort and money has been invested in preserving the cultural resources in this valley, such as through land acquisitions and the establishment of conservation easements by multiple agencies and institutions. The lower San Pedro valley also has received considerable attention from many conservation interests over the last 20 years due to the significance of the riparian and aquatic habitats and the pristine nature of the landscape. These natural riches have great time depth and help account for the equally rich cultural landscape of the San Pedro Valley.

When evaluating options for energy transmission, the potential for causing adverse effects to this last intact landscape in Arizona requires serious consideration. Every effort should be made to utilize the existing 345kV corridor through the area before considering a new corridor that would further impact this region. The preferred and alternative routes deviate from the existing 345kV line without adequate justification. As we state previously, use of the existing corridor would greatly minimize, if not completely avoid, impacts to cultural resources, particularly in the lower San Pedro River valley. Furthermore, the location and manner in which routes cross the river are especially critical for minimizing impacts to cultural resources. Crossings designed to avoid any ground disturbance within the riparian corridor of the river will facilitate protection of prehistoric cultural resources that typically are found within a mile-wide corridor centered on the river. CDA's intensive research into cultural resources along the lower San Pedro River has yielded excellent spatial data on the locations, condition and significance of archaeological sites there. CDA respectfully offers to use this data to assist BLM in identifying corridor crossings that have the lowest potential for disruption of prehistoric sites in the lower San Pedro River valley.

Second, the proposed and alternative routes that traverse the foothills of the Pinaleno Mountains have the potential to impact important but relatively understudied prehistoric sites associated with the Hohokam, Mogollon and Mimbres cultures. While many of the prehistoric sites located in the foothills of the Pinalenos and along the Gila and San Simon Rivers have been seriously vandalized, they still retain evidence that is vital for understanding the migrations of ancestral Puebloan people into southern Arizona. Potential impacts to these sources of indispensable information require careful

consideration. Anna Neuzil's research in the Safford Basin is the most comprehensive treatment of the prehistory of the area, so we recommend reviewing her publications for more details about the importance of the area's cultural resources for understanding Arizona prehistory. In addition to the research value of these prehistoric sites, Hopi and Zuni people claim ancestral ties to the area and have noted that the habitation sites, petroglyphs and agricultural fields are significant to them.

Third, several alternative routes are depicted in the vicinity of the Picacho Mountains. This area has been subject to a number of investigations over the years that have documented a rich heritage of Archaic, Hohokam and Historic period archaeological sites and rock art localities. Most notable are the Classic period Hohokam archaeological complexes associated with platform mounds at Brady Wash, McClelland Wash (a National Register of Historic Places [NRHP]-listed Archaeological District) and the Tom Mix Mound area. The McClelland District site is especially noteworthy, given its extensive area of Classic period habitation and its proximity to several nearby pre-Classic villages and agricultural and resource procurement areas. This archaeological complex is located immediately north of the CAP aqueduct and appears to be located within the proposed alternative right-of-way. Rock art panels with overlapping Archaic and Hohokam elements, identified by the Arizona SHPO as eligible for the NRHP, also are present in the Picacho Mountains and surrounding areas.

Historic Trails in New Mexico and Arizona

At least six historic trails—not all of which are shown on SunZia's project maps—may be directly or indirectly adversely affected by the SunZia transmission project: the Camino Real de Tierra Adentro National Historic Trail and the Janos Copper Road in New Mexico; the Juan Bautista de Anza National Historic Trail in Arizona; and the Mormon Battalion Trail/Cook's Wagon Road, the Butterfield Trail and the Gila Trail in both states. In the EIS, BLM should identify any "high potential route segments" and "high potential historic sites" that are located within the project area, and should develop alternatives to the proposed action that place the transmission lines preferably within existing transmission corridors or, alternatively, as far from the trails as possible to avoid or minimize visual impacts to trail viewsheds.

For example, proposed alternate SunZia transmission routes are shown to cross El Camino Real de Tierra Adentro in New Mexico in four separate places. While each crossing appears to occur in the same location as an existing transmission line, there may be cumulative effects on trail viewsheds from the multiple transmission lines. The effects of building additional new roads, such as increased construction traffic and public access to the trail and associated cultural resources, must also be taken into account during the evaluation of project alternatives.

The proposed route for the SunZia transmission line crosses a new section of the Butterfield historic trail less than 20 miles east of Lordsburg, New Mexico. Because no

transmission line currently exists there, the trail and any other cultural resources around that location should be carefully evaluated for potential adverse physical and visual impacts. In that location, burying the transmission line may be appropriate as long as mechanical excavation does not disturb subsurface archaeological deposits.

Landscapes of Significance to Native American Groups

An evaluation of potential physical, visual, and social/psychological impacts to Native American traditional cultural properties (TCPs) and sacred landscapes also must be included in the EIS. Early and thorough consultation with Native American groups that may have connections to lands within and adjacent to the transmission line corridors is extremely important. Because TCPs and sacred landscapes are highly susceptible to visual impacts, such as from above-ground transmission lines, and because mitigating such impacts is very difficult, BLM should attempt to resolve tribal concerns by avoiding TCPs and sacred landscapes all together.

Mount Graham, for example, is well known for its cultural significance to several Native American tribes. Modern day Akimel O'odham, Tohono O'odham, Hopi and Zuni peoples consider themselves descendants of the Hohokam and Ancestral Puebloan peoples who inhabited the lower San Pedro, Pinaleno foothills and Safford Basin. Therefore, these modern groups view landscapes containing prehistoric Hohokam and Ancestral Puebloan archaeological sites as significant to their histories and cultures. CDA can provide BLM with information about the relationship between the archaeological record of southern Arizona and the oral traditions of these tribes.

Recommendations: BLM must prioritize protection of the area's outstanding historic and cultural resources, including significant concentrations of prehistoric and historic archaeological sites, historic trails and Native American traditional cultural properties and sacred landscapes. Accordingly, BLM should insist on thorough documentation of cultural resources within the proposed project's area of potential effect through consultation with tribes, SHPOs, local communities and other interested parties and through archaeological and historical surveys. Then, BLM should consult with the above parties to develop measures to avoid adverse effects of the transmission lines on significant historic and cultural resources. If impacts are unavoidable, BLM should develop strategies and adequate measures in the EIS to minimize and mitigate impacts to historic and cultural resources. Such measures should include creative ways to resolve difficult impacts associated with the visual intrusion and disruption caused by high voltage powerlines and facilities. Measures could include, for example, burying lines and/or co-locating lines. Identifying effective mitigation measures will be a critical step in satisfying both NEPA and NHPA.

E. Soil and Water Resources, Including Floodplains, Wetlands and the Rio Grande River corridor

BLM should consider impacts to soil and water resources in the EIS. Surface disturbances run the risk of harming delicate desert soils that take decades to regenerate. The line may come in contact with priority conservation areas such as floodplains and wetlands where it crosses the Rio Grande River in New Mexico and other similar riparian areas along the route. The potential environmental impacts to riparian vegetation and wildlife should be considered. In these areas, alternative locations should be carefully weighed to minimize disturbances to wetlands, floodplains and water resources from transmission line construction.

Recommendations: Consider all impacts to soil and water resources along the SunZia transmission route. Mitigation options and alternative location must be considered where transmission lines cross wetlands and floodplain areas, especially where the lines cross the Rio Grande River corridor in New Mexico, a critical bird migration route.

IV. Issues for Further Analysis

A. Protection of Lands with Wilderness Characteristics

The public lands being considered for this project contain lands that have wilderness characteristics and are under consideration for protection under the Wilderness Act, 16 U.S. C. § 1131-1136, or under specific administrative prescriptions. Both of these categories of lands require special management; they should be carefully identified and protected from the impacts of transmission.

i. BLM Must Inventory for and Protect Lands with Wilderness Characteristics outside WSAs

BLM has committed to continuing to protect wilderness values in the wake of the Utah Settlement, in which the BLM abandoned its authority to establish new Wilderness Study Areas (WSAs). We maintain this settlement is invalid and will be overturned in litigation; however, the agency has other obligations to identify and protect wilderness characteristics. Instruction Memoranda (IMs) Nos. 2003-274 and 2003-275 contemplate that BLM can continue to inventory for and protect land "with wilderness characteristics," such as naturalness or providing opportunities for solitude or primitive recreation, through the planning process. The IMs further provide for management that emphasizes "the protection of some or all of the wilderness characteristics as a priority," even if this means prioritizing wilderness over other multiple uses. (emphasis added). The guidance issued by the BLM's Arizona State Office serves to elaborate upon this guidance by providing for identification of lands with wilderness characteristics and development of management prescriptions to protect and enhance these values (*See* IM No. AZ-2005-007).

Construction of power lines will unquestionably affect the wilderness characteristics of these lands, since they will affect their "naturalness" as well as opportunities for solitude and/or opportunities for primitive or unconfined recreation. FLPMA specifically identifies "scenic values" as a resource of BLM lands for purposes of inventory and management (43 U.S.C. § 1711(a)), and the unspoiled landscapes of lands with

wilderness characteristics generally provide spectacular viewing experiences. The scenic values of these lands will be severely compromised if destructive activities or other visual impairments are permitted.

"[W]ilderness characteristics are a value which, under the FLPMA, the Bureau has the continuing authority to manage, even after it has fulfilled its 43 U.S.C. § 1782 duties to recommend some lands with wilderness characteristics for permanent congressional protection." *Oregon Natural Desert Ass'n v. Bureau of Land Management*, 531 F.3d 1114, 1142 (9th Cir. 2008). Pursuant to FLPMA, "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values." 43 U.S.C. §1711(a). Wilderness character is a resource for which BLM must keep a current inventory. As the U.S. Court of Appeals for the Ninth Circuit recently held: "wilderness characteristics are among the 'resource and other values' of the public lands to be inventoried under § 1711. BLM's land use plans, which provide for the management of these resources and values, are, again, to 'rely, to the extent it is available, on the inventory of the public lands, their resources, and other values.' 43 U.S.C. § 1712(c)(4)." *Oregon Natural Desert Ass'n v. Bureau of Land Management*, 531 F.3d 1114, 1119 (9th Cir. 2008). Therefore, BLM is required to consider "whether, and to what extent, wilderness values are now present in the planning area outside of existing WSAs and, if so, how the Plan should treat land with such values." *Id*. at 1143.

BLM has identified "wilderness characteristics" to include naturalness and providing opportunities for solitude or primitive recreation. *See* Instruction Memoranda 2003-274, 2003-275, Change 1. These values are to be *identified and protected* in the land use planning process. *See* BLM Land Use Planning Handbook (H-1601-1, 2005); *Oregon Natural Desert Ass'n v. Bureau of Land Management*, *supra*. Further, BLM's national guidance provides for management emphasizes "the protection of *some or all* of the wilderness characteristics as a priority" over other multiple uses. IM 2003-275, Change 1 (emphasis added). This guidance does not limit its application to lands suitable for designation of WSAs; for instance, the guidance does not include a requirement for the lands at issue to generally comprise 5,000-acre parcels or a requirement that the lands have *all* of the potential wilderness characteristics in order to merit protection.

In addition, where the BLM has not inventoried its lands for wilderness characteristics, the agency is obligated to consider substantive new information regarding wilderness character. In *Oregon Natural Desert Association v. Rasmussen*, CV 05-1616-AS, Findings and Recommendations (D. Or. April 20, 2006); Order (D.Or. Dec. 12, 2006), the court found that BLM had violated NEPA by failing to consider significant new information on wilderness values and by relying on its previous wilderness inventory, concluding:

> The court finds BLM did not meet its obligation under NEPA simply by reviewing and critiquing [a local environmental group's] work product. It was

> obligated under NEPA to consider whether there were changes in or additions to the wilderness values within the East-West Gulch, and whether the proposed action in that area might negatively impact those wilderness values, if they exist. **The court finds BLM did not meet that obligation by relying on the one-time inventory review conducted in 1992**.

Where wilderness inventory information submitted has not yet been analyzed in the existing land use plan, it must be considered before making other management decisions, such as authorizing a new transmission line. In a recent decision, the U.S. District for the District of Utah found that information regarding wilderness characteristics that was not considered in the existing land use plan was:

> **a textbook example of significant new information** about the affected environment (the **wilderness attributes and characteristics** of the Desolation Canyon, Floy Canyon, Flume Canyon, Coal Canyon, and Flat Tops unit) that would be **impacted by oil and gas development**; information that was **not reflected in BLM's existing NEPA analyses**.

Southern Utah Wilderness Alliance v. Norton, 457 F. Supp. 2d 1253 (D. Utah 2006) (also submitted with our comments on the Draft RMP). A compliant NEPA analysis requires not only assessment of potential impacts but also a consideration of potential mitigation measures, such as protecting lands with wilderness characteristics. 40 C.F.R. §§ 1502.14, 1502.16.

The RMPs governing the lands at issue for this project have not completed re-inventories for wilderness characteristics. The Socorro Field Office published its Proposed RMP/Final EIS in December 2008. The EIS identifies lands with wilderness characteristics outside of designated WSAs that will be managed to protect these characteristics (Proposed RMP at 2-13). To fulfill this management direction, the SunZia project should not impact these lands or their wilderness values. Further, although the Socorro RMP evaluated the wilderness characteristics of newly-acquired lands, it did not evaluate the wilderness inventory prepared by the New Mexico Wilderness Alliance and submitted during the planning process.

The Las Cruces District Office is currently in the process of preparing the Tri-County Draft RMP/EIS, which also governs lands in the study area. As part of this process, BLM is required to inventory for wilderness characteristics, including giving consideration to information about wilderness-quality lands provided by the public. The same information is applicable to consideration for locating the SunZia project.

The Safford and Tucson Field Offices have neither recently revised their RMPs (although the Tucson RMP has been scheduled to begin revision for a number of years), nor completed inventories for lands with wilderness characteristics. Lands in these field offices that are considered for the SunZia project should also be inventoried for wilderness characteristics, to ensure wilderness values are not impacted, including use of

the inventory information provided by the Arizona Wilderness Coalition (GIS data attached).

The Draft EIS should acknowledge the wilderness values present on the affected lands and consider the impacts of locating transmission lines on or adjacent to them.

As currently identified, the proposed and alternate routes intersect several Citizens' Proposed Wilderness areas inventoried by the New Mexico Wilderness Alliance and Citizens' Wilderness Inventory areas inventoried by the Arizona Wilderness Coalition. Some of these intersections appear to be on the extreme edges of the units, and can likely be avoided with simple route shifts. Other intersections go directly through units, and will be more difficult to address. BLM should address these intersections in the EIS and SunZia should avoid intersections with these areas. Intersected units include:

New Mexico:

- Antelope
- Antelope South
- Big Yucca North
- Big Yucca
- Brushy Mountain
- Chupadera Wilderness Addition
- Dugout Canyon
- Gyp Hills
- Jornada del Muerto
- Lordsburg Playas North
- Massacre Peak
- Padilla Gonzales
- Point of Rocks
- Nutt Mountain
- Sierra de las Uvas

Arizona:

- Whitlock Mountains
- Winchester

Recommendations: Lands with wilderness characteristics must not be adversely impacted by the SunZia project. The project should not be sited in or adjacent to lands BLM is managing to protect wilderness characteristics. Further, areas that have not recently been inventoried for wilderness characteristics should be inventoried before being committed to this project. The BLM should specifically consider the significant new information encompassed by the wilderness inventories prepared by the New Mexico Wilderness Alliance and Arizona Wilderness Coalition that address lands in the study areas, which are provided with these scoping comments (GIS data attached, along with narratives for New Mexico units).

i. The SunZia project Cannot be Located in Wilderness Study Areas

BLM is obligated to manage the WSAs in accordance with the Interim Management Policy (IMP) for Lands Under Wilderness Review (BLM Manual H-8550-1), which requires that WSAs be managed to protect their wilderness values. The IMP requires management of WSAs in accordance with the nonimpairment standard, such that no activities are allowed that may adversely affect the WSAs' potential for designation as wilderness. As stated in the IMP, the "overriding consideration" for management is that:

> . . . preservation of wilderness values within a WSA is paramount and should be the primary consideration when evaluating any proposed action or use that may conflict with or be adverse to those wilderness values. (emphasis in original)

Recommendations: In order to fulfill the mandates of the IMP, the SunZia project cannot be located in WSAs and the location of the SunZia project must show that it does not impair wilderness suitability.

B. Amendment of RMPs

The Scoping Notice acknowledges that approval of the SunZia project may require amendment of one or more of the affected RMPs. Per FLPMA and its implementing regulations, "a resource management action [must] be specifically provided for in the [RMP], or if not specifically mentioned, shall be clearly consistent with the terms, conditions, and decisions of the approved plan or plan amendment." 43 C.F.R. § 1601.0-5(b). An amendment is needed if there is "a change in circumstances or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions and decisions of the approved plan." 43 C.F.R. § 1610.5-5.

NEPA requires the BLM to include within an EIS "alternatives to the proposed action." 42 U.S.C. § 4332(2)(C)(iii). NEPA also requires that BLM discuss mitigation measures to avoid or minimize environmental consequences from proposed actions in an EIS. 40 C.F.R. §§ 1502.14, 1502.16. NEPA's implementing regulations underscore this requirement by requiring agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a). This evaluation extends to considering more environmentally-protective alternatives and mitigation measures. See, e.g., 40 C.F.R. § 1505.2(b); 40 C.F.R. § 1502.14(f).

We appreciate the agency's acknowledgment that the construction and resulting impacts from the SunZia project may merit amendment of the subject RMPs and hope that the BLM will ensure that protection of the many values of the affected public lands are thoroughly addressed.

Recommendations: Given the age of the affected RMPs, the circumstances under which these RMPs were originally prepared have certainly changed and the evaluation of the SunZia project provides an important opportunity to ensure that new circumstances and new data are addressed. Where the subject RMPs are under revision, data collected on

sensitive resources and protective management prescriptions already identified should be carried forward. New information, including inventories of lands with wilderness values, should be considered. Opportunities to protect the natural resources of these public lands should be considered and incorporated into the EIS and RMP amendments, including by designation of special management areas and application of protective management prescriptions.

C. Preserving Opportunities for Recreation

Many lands in the SunZia study area are valued by public lands users for their opportunities for recreation. FLPMA identifies "outdoor recreation" as a valuable resource to be inventoried and managed by BLM. 43 U.S.C. § 1711(a), and the field offices impacted by this project administer areas specially managed for recreational uses. Outdoor experiences such as hiking, hunting, fishing, and biking can be negatively impacted by the degradation of scenic values.

On BLM lands, the public wants to experience a variety of recreational opportunities including naturalness, quiet natural soundscapes, undeveloped scenery, an undisturbed natural landscape, the timelessness and geological sweep of the BLMs remote and rugged landscapes, a low level of facilities presence, and opportunities for solitary experiences. Many want to be able to recreate in primitive, undeveloped, natural appearing settings. BLM should ensure that opportunities for experiences such as these are preserved in selecting a location for the SunZia project.

Recommendations: BLM manages public lands to accommodate a wide range of uses, including many recreation settings. Recreational values and uses should be considered in preserved in siting the SunZia transmission line.

D. Accounting for Cumulative Impacts and Connected Actions in the Scope of the Environmental Analysis

i. Benefits for Greenhouse Gas Reductions and Climate Change

Addressing climate change begins with reductions of greenhouse gas emissions. This cannot be achieved without well-planned transmission connecting new renewable energy sources to load centers. A reduction in GhG emissions from developing renewable energy is based on comparative emissions from fossil fuel-based energy production. The proposed SunZia transmission line is a very important step toward facilitating greater renewable energy development to meet national clean energy goals and state renewable energy portfolios.

Under FLPMA, BLM is directed to act consistently with state policies by "coordinating the land use inventory, planning and management activities of or for such lands . . . . of the states or local governments within which the lands are located." 43 U.S.C. §1712(c). Arizona and New Mexico have renewable portfolio standards that mandate a certain

percentage of generation to come from renewable energy, 15% by 2025 and 20% by 2020, respectively.

FLPMA also requires BLM to "provide for compliance with applicable pollution control laws including state . . . pollution standards[.]" 43 U.S.C. §1712(c)(8), (c)(9); 43 C.F.R. §2920.7(b)(3). In addition to supporting state renewable energy portfolios, the SunZia line could also serve as an important asset for pushing forward state and regional policies to reduce greenhouse gas emissions. Through executive order 2006-69, the New Mexico Governor set an emission reduction target to meet 2000 levels by 2020. Arizona, with the fastest growing emissions rate of any state in the United States, targets the same GHG reduction schedule as New Mexico in their state climate action plan.

Furthermore, both states in the SunZia path are members of the Western Climate Initiative, a multi-state climate registry targeting emissions reduction goals and developing a cap-and-trade system. Arizona and New Mexico are also members of the Southwest Climate Change Initiative, through which the Governors of both states have committed to identify and utilize opportunities for reducing GHG emissions. BLM planning and the SunZia transmission line could serve an integral role in meeting the goals outlined by these initiatives.

Because a reduction in GhG emissions is a primary public benefit of transmission development to facilitate renewable energy projects, it is critical that the agencies quantify this reduction to the extent possible. The agencies' analysis of GhG reductions should also include a comprehensive look at both SunZia's impacts, along with impacts from reasonably foreseeable renewables projects development facilitated by SunZia, including GhG emissions during manufacture, construction, operation, decommissioning, and reclamation of the projects.

The results of this analysis should then be compared to similar analyses for fossil-fuel based energy production, including combined-cycle natural gas fired and coal fired power plants.

Such an analysis will provide the public a clear indication of the costs and benefits of the proposed project and allow stakeholders to make decisions regarding the project based on the best available science and data.

ii. Cumulative and Connected Impacts

The EIS must account for cumulative and connected actions associated with the proposed transmission line. Under NEPA, BLM must take a "hard look" at the effects of proposed actions, including, "ecological, aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8. A cumulative impact may be "an impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7.

BLM should account for any future possibility that the SunZia transmission line carries non-renewable energy sources, such as coal, that produce greater GHG emissions. Department of the Interior Secretarial Order 3226, as amended in 2001, requires BLM to "consider and analyze potential climate change impacts. . . . when making major decisions." Federal case law also underscores the responsibility of federal agencies to scrutinize reasonably foreseeable cumulative environmental impacts from carbon dioxide emissions involving coal-fired power generation through the NEPA review process. *See Mid-states Coalition for Progress v. Surface Transportation Board* 345 F.3d 520 (8th Cir. 2003) (finding NEPA violation by failing to consider emissions from increased coal consumption from new rail lines carrying coal); *Border Power Plant Working Group v. Department of Energy* 260 F.Supp.2d 997 (S.D. Cal. 2003) (finding NEPA violation for failure to analyze reasonably foreseeable cumulative impacts from carbon dioxide with proposed transmission lines). In accordance with these decisions, and due to reasonably foreseeable GHG emissions and environmental impacts from power lines supporting coal-fired generation, BLM should consider options for allowing interconnection from only low-carbon generation (equal to or less than that of a combined-cycle natural gas fired power plant).

On the ground impacts are also important to consider when assessing cumulative and connected actions. Surface disturbance from the transmission lines should be considered in the EIS and minimized to the greatest extent possible. The need for new infrastructure to accommodate construction workers could be reduced or eliminated by giving special attention to where opportunities exist to utilize pre-existing roads or housing in close proximity to project locations.

SunZia will also provide transmission access to wind, solar and possibly geothermal generation plants that would otherwise not be feasible. The EIS should analyze the potential cumulative impacts of any reasonably foreseeable development of these resources.

Recommendations: The SunZia project proposes to utilize federal public lands – 211 of the planned 460 miles are on federal public lands. BLM should take measures to ensure that use of our public lands and the SunZia rights-of-way support a forward-thinking energy policy and current policy objectives that favor clean, renewable energy generation such as wind, solar and geothermal resources. BLM should ensure this by considering options for allowing interconnection from only low-carbon generation (equal to or less than that of a combined-cycle natural gas fired power plant). BLM should also require the applicant to thoroughly examine and provide a report in the Draft EIS, various tariff structures for the proposed power lines with the Federal Energy Regulatory Commission (FERC), in such a way to favor/limit interconnection to low-carbon resources while also not charging a premium for transmission access.

There are presently 120,000 linear miles of high-voltage power lines in the West that already impact a significant amount of public lands. We understand that – in many instances – location-constrained renewable energy resources need new transmission investments to develop and deliver these resources to market. These new power lines and

attendant rights-of-way, including SunZia, however, will unavoidably create additional impacts to our nation's public lands. These additional impacts are only acceptable – in addition to siting, mitigation and the environmental concerns herein being addressed – if the approved projects advance the region towards a forward-thinking energy policy, and are therefore limited to low-carbon resources and predominantly serve wind, solar and geothermal resources.

Importantly, BLM has the ability to set reasonable conditions of approval for rights-of-way on public lands. Section 505 of the Federal Land Management Policy Act provides that each right-of-way shall contain:

(a) terms and conditions which will . . .

- (ii) minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment;
- (iii) require compliance with *applicable air* and water quality standards established by or pursuant to applicable Federal or State law; and
- (iv) require compliance with State standards for public health and safety, environmental protection, and siting, construction, operation, and maintenance of or for rights-of-way for similar purposes if those standards are more stringent than applicable Federal standards; and

(b) such terms and conditions as the Secretary concerned deems necessary to . . .

- (ii) manage efficiently the lands which are subject to the right-of-way or adjacent thereto and protect the other lawful users of the lands adjacent to or traversed by such right-of-way;
- (iii) protect lives and property;
- (iv) protect the interests of individuals living in the general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes;
- (v) require location of the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors; and
- (vi) otherwise protect the public interest in the lands traversed

43 U.S.C. § 1765 (emphasis added).

As noted above, there is precedent in the controlling law (FLPMA) that allows for air quality to be a valid consideration in terms of conditioning a ROW permit to protect the public health, air quality and environmental concerns such as global warming. Therefore, in the DEIS BLM should consider conditioning the right-of-way approvals to ensure that each new connecting power source does not exceed the CO_2 and other emissions of a combined-cycle natural gas plant (roughly 1,100 lbs. of CO_2 per megawatt-hour of produced energy).[7]

[7] This standard is derived from the 2007 decision of the California Public Utilities Commission setting a green house gas performance standard for new long-term commitments for base-load energy generation

In Border Power Plant v. Dept. of Energy, 260 F.Supp.2d 997 (S.D. Cal. 2003), the projects under immediate consideration for approval were federal rights-of-way to build power lines connecting coal power plants in Mexico with the power grid in Southern California. To help ensure that the connecting power plants would have the least impacts on regional air quality, the plaintiffs in Border Power Plant advanced a novel theory: condition the right-of-way permits "on the commitment of the project proponents to implementation of state-of-the-art emissions control systems, mitigation through offsets in existing sources, and the use of dry cooling or parallel dry-wet cooling." Border Power Plant, 260 F.Supp.2d at 1029. The defendant permitting agencies argued that such a condition would frustrate the purpose and need of the proposed action, which only dealt with the construction of power lines in a right-of-way and not the operation of the connecting power plants.

The court agreed with the plaintiffs, and its analysis is worth quoting in full:

> Here, the scope of the action relates only to the transmission lines, but the nature of the action includes the full scope of the analysis, including the effects of the action. The nature of the action therefore includes the importation of power generation in Mexico. Indeed, to leave out the secondary impacts would be at odds with the purpose of the alternatives analysis, which is to provide a way for an agency to calculate and compare the various predicted effects of alternative courses of action. The analysis would be arbitrary in itself if it did not take into account all effects of a proposed action. Accordingly, defendants' arguments that they need not consider alternatives related to the [coal power plant] facilities fails.
>
> Given this nature, the agencies were obligated to set forth in the EA 'the range of alternatives . . . sufficient to permit a reasoned choice.' Although defendants argue that 'international sensitivities' preclude conditioning the permits from being a reasonable and feasible alternative, such a discussion belongs in the EA's alternative analysis rather than a litigation brief.

Border Power Plant, 260 F.Supp.2d at 1030-31 (citations omitted).

Accordingly, there is judicial precedent for the proposition that NEPA approval processes for rights-of-way that will house power lines should consider alternatives that place performance-based conditions on the right to use public lands. For the SunZia project, we ask BLM to develop this type of permit condition in order to ensure that America's public lands are being used to support a forward-thinking energy policy and are furthering climate change solutions. Fuel-neutral, a performance standard is an appropriate condition for the use of the country's public lands and allows the public assurances that support for a particular corridor or right-of-way will not result in future actions connecting polluting and carbon-heavy power sources to the electric grid.

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serving California consumers. See "PUC Sets GHG Emissions Performance Standard to Help Mitigate Climate Change" attached as Exhibit __.

Cumulative and connected actions, such as potential benefits from reducing greenhouse gas emissions from electricity generation, decreased impacts from climate change, and potential impacts from additional infrastructure and reasonably foreseeable development of renewable energy generation plants, should be accounted for in the Draft EIS.

Further, the agencies should comprehensively analyze SunZia's net reductions to GhG emissions, including GhG emissions during manufacture, construction, operation, decommissioning, and reclamation SunZia and reasonably foreseeable renewable energy development facilitated by SunZia. The analysis should consider both the potential for the project to reduce GhG emissions as well as potential for the project to increase GhG emissions, for example, by disturbing undisturbed land currently useful for carbon sequestration. The results of this analysis should then be compared to the same type of analysis for fossil-fuel based energy production, including combined-cycle natural gas fired and coal fired power plants.

E. Socioeconomic Impacts

These comments refer to type and scope of socioeconomic analyses which should be performed as part of the BLM Environmental Impact Statement and Resource Management Plan Amendments for the SunZia Southwest Transmission Project (SunZia EIS).

The socioeconomic impacts of transmission for potential renewable energy development go far beyond the value of the electricity produced by such projects or the construction, operation and maintenance jobs which may be created. While certainly beneficial in advancing our national quest for renewable energy and our important goal of reducing global warming pollutants, transmission for renewable energy (as is the case with all industrial developments) will leave permanent impacts on the landscape of the West – a landscape which is both iconic and an important economic driver in this region. The public lands that may be impacted by this proposed transmission project are likely to include places which are important and valuable to all Americans. Development of these lands for energy transmission should be considered carefully and should account for all their potential values – both market and non-market.

Several specific areas of analysis which we feel should be addressed in the SunZia EIS are noted here and discussed in more detail below.

I. In assessing the benefits of this transmission project, the BLM account for all the potential costs and benefits associated with such development.

    A. The SunZia EIS should address the potential benefits to the local area economies that arise from undeveloped public lands, and which will be impacted by the development of the SunZia transmission project.

    B. All opportunity costs of energy transmission on public lands, including potential economic benefits from job creation for transmission and renewables development, revenue from energy generation, and climate benefits, along with negative opportunity costs from loss of other opportunities and values on public lands, should be fully examined in

the SunZia EIS to ensure that net socioeconomic value of the transmission project is maximized.

C. The SunZia EIS should include an assessment of the potential benefits of siting transmission for utility scale renewable energy projects on private lands compared with this development on public lands. The potential fiscal returns to the American public from siting transmission on public lands should be compared with the potential fiscal benefits that might accrue to a private landowners through siting transmission on private lands (ROW, rental fees)

D. The SunZia EIS should consider the benefits as well as mitigation of costs by siting energy transmission on Brownfields. By avoiding costs to the ecological integrity and outdoor opportunities, the net benefits of siting the transmission project on contaminated lands may be considerable.

II. The SunZia EIS should account for all conceivable non-market values, including the impacts on local quality of life, which are associated with the undeveloped public lands that may be impacted by the development of this transmission project.

III. The socioeconomic analysis in the SunZia EIS should avoid the use IMPLAN and economic base models to assess the economic impacts of the proposed energy transmission project on local communities. If the use of such models is unavoidable, these should not be the sole analytical tool for assessing the economic impacts. The socioeconomic analyses should include an assessment of the potential impacts of this transmission project on all segments of the local economies (non-labor income, amenity driven development, tourism, etc) along with impacts to residential and other private property values.

i. Energy Transmission Development Should Maximize Net Public Benefits

In developing the socioeconomic analysis for energy transmission projects on public lands, the BLM should favor those projects which provide the greatest net benefits to the American public, by accounting for all the potential costs and benefits associated with such development.

We expect that the SunZia EIS will recognize that energy transmission for renewable energy development, like any industrial development sited on public lands, will have negative impacts on these lands. These impacts may be as great as those associated with other energy development; however, we also recognize that the production and use of renewable energy, if it replaces that of fossil fuel energy, will also have benefits. These include the lessening of greenhouse gas emissions from electricity production which, in turn, will be beneficial to undeveloped public lands by reducing the already measureable impacts of climate change.

At the same time, in light of climate change, undeveloped public lands are also increasingly important as a source of habitat for species impacted by climate change, as a source of forest and other vegetation which acts as a "carbon sink" and is thus important

for mitigation of climate change. Undeveloped lands are also a source of increasingly scarce clean water and other ecosystem services. Any energy transmission projects (even those targeting renewable energy) sited on undeveloped lands (both public and private) will reduce these benefits. These costs should be included in the SunZia EIS's assessment of net public benefits.

The SunZia EIS should recognize that this transmission project will result in public benefits and costs. The siting and development of the transmission project should be done such that it will produce the largest net benefits, accounting for both market and non-market impacts on the public, the ecosystem, and the climate change mitigating abilities of western lands, both public and private.

1. Benefits to the Local Economy from Undeveloped Public Lands

The SunZia EIS should address the potential benefits to the local area economies that arise from undeveloped public lands which may be impacted by the development of the proposed transmission project. The mere presence of undeveloped public lands and the natural and recreational amenities that they provide produce measurable economic benefits for local communities.

The SunZia EIS should fully address the impacts that the development of energy transmission corridors on undeveloped public lands will have on the local economies throughout the study area. The economic benefits of undeveloped lands for local economies is well documented and has grown in importance as the U.S. moves from a primary manufacturing and extractive economy to one more focused on service sector industries. This shift means that many businesses are free to locate wherever they choose. The “raw materials” upon which these businesses rely are people, and study after study has shown that natural amenities attract a high-quality, educated and talented workforce – the lifeblood of these businesses.

As the economy of the West evolves public lands, especially areas protected from development, are increasingly important for their non-commodity resources – scenery, wildlife habitat, wilderness, recreation opportunities, clean water and air, and irreplaceable cultural sites. A vast and growing body of research indicates that the economic prosperity of rural Western communities depends more on the natural amenities found on public lands and less on the extraction of natural resource commodities.[8] In a letter to the President and the Governors of all the Western states, 100 economists from universities and other organizations throughout the United States pointed out that, "The West's natural environment is, arguably, its greatest long-run economic strength" (Whitelaw et al. 2003).

[8] See Whitelaw and Niemi 1989, Rudzitis and Johansen 1989, Johnson and Rasker 1993 and 1995, Freudenburg and Gramling 1994, Snepenger et al. 1995, Deller 1995, Power 1995 and 1996, Bennett and McBeth 1998, Duffy-Deno 1998, McGranahan 1999, Nelson 1999, Rudzitis 1999, Morton 2000, Lorah 2000, Deller et al. 2001, Johnson 2001, Shumway and Otterstrom 2001, Lorah and Southwick 2003, Rasker et al. 2004, Holmes and Hecox 2004 and Reeder and Brown 2005, Sonoran Institute 2006, and Barrens et al. 2006 for some examples. See Haefele et al. (2007) for a detailed description of the research on the amenity economy and the ways in which local economies benefit from protected public lands.

New residents in the rural West often bring new businesses, and these are rarely tied to resource extraction or other development on public lands. Some are dependent directly on the recreation opportunities on the surrounding public lands. Entrepreneurs are also attracted to areas with high levels of natural amenities. The Federal Reserve Bank of Kansas City has found that the level of entrepreneurship in rural communities is correlated with overall economic growth and prosperity (Low 2004). These businesses may be harmed or deterred if the quality of the scenic and natural amenities is degraded due to renewable energy developments. The SunZia EIS must assess the value of undeveloped public lands and include criteria which will ensure that the economic role of these lands is not deterred when renewable energy developments and any associated transmission lines are constructed.

Retirees and others who earn non-labor income are also important to rural western communities. Investment and retirement income makes up 26% of total personal in New Mexico and 28% in Arizona.[9] If investment and retirement income were considered an industry it would be one of the largest in both states potentially impacted by the proposed transmission project. Retirees are attracted by natural amenities that are available on undeveloped public lands. The potential impact that the development of energy transmission will have on this source of income and economic activity must be accounted for in the SunZia EIS.

Growth in the professional and service sector is also tied to the natural and other amenities in the area. Protected public lands in the region enhance the West's attractiveness for both skilled workers and employers. Protected public lands provide indirect support for local and regional economies, a fact that is increasingly being recognized by communities throughout the West. These lands provide a scenic backdrop, recreation opportunities and a desirable rural lifestyle, and many other tangible and intangible amenities that attract new residents, businesses and income to the rural West. Many businesses are able to conduct national or international commerce from any location they choose. Other entrepreneurs simply choose to live in a particular place and build businesses in response to local needs. Research conducted by The Center for the Study of Rural America, at the Federal Reserve Bank of Kansas City (the Rural Center) has found that entrepreneurship is a strong indicator of rural economic health (Low 2004, Low et al. 2005, Thompson et al. 2006). The Rural Center has included entrepreneurship along with several other indicators of rural economic potential into a set of Regional Asset Indicators (Center for the Study of Rural America 2006a). These indicators include the natural and human amenities of a region – many of which are closely tied with undeveloped public lands (Weiler 2004). Both states impacted by the proposed SunZia transmission have levels of human and natural amenities which are higher than the national average due in part to protected and undeveloped public lands. The role of these lands in these states' economies and the potential impact that energy transmission development might have should be addressed in the SunZia EIS.

Research into what motivates entrepreneurs and businesses to choose particular locations consistently finds that amenities and quality of life top the list (Rasker and Hansen 2000,

[9] Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System (http://www.bea.gov/)

Snepenger et al. 1995, Rasker and Glick 1994, Whitelaw and Niemi 1989). Developing the proposed energy transmission project on undeveloped public lands may hinder the impacted communities' ability to attract more small businesses into the region to further enhance this sector.

These findings together point to the value of public lands to strong local economies. Inappropriate development of the proposed energy transmission project on these western lands could be seriously problematic, and this must be addressed in the SunZia EIS. To site transmission, even for renewable energy development, in a way that impairs these natural amenities would be short-sighted at best. The SunZia EIS should address this issue and provide detailed criteria to protect the economic benefits associated with undeveloped public lands.

Recommendations: The SunZia EIS must include a thorough examination of the full socioeconomic impacts likely to occur if the proposed energy transmission project impacts undeveloped lands. Some suggested analyses and sources of data can be found in *"Socio-Economic Framework for Public Land Management Planning: Indicators for the West's Economy"* (attached).

2. Opportunity Costs

The stated purpose of the SunZia Transmission Project is to facilitate the development of renewable energy and this intention should be adhered to. All relative costs of energy production and transmission on public lands should be fully examined in the SunZia EIS, especially benefits to the public and local economies. As discussed above, there is potential for the loss of economic opportunity from tourism, hunting, fishing, wildlife viewing, and other forms of recreation if transmission is constructed on lands that hold special value to people, wildlife, and other elements of the ecosystem. These costs should be assessed by the BLM for the entire proposed transmission development corridor.

However, it is also true that local communities can certainly benefit from the presence of new renewable power-generating and transmission infrastructure. Temporary jobs are created to manufacture transmission lines and to construct the new power facilities that the transmission will support. Once up and running, permanent positions are also needed to operate and maintain the facilities. Table 1 presents estimates on employment information for different types of power-generating facilities.

Table 1. Annual Jobs Created Per Megawatt of Generating Capacity

Energy Source	Temporary Jobs(per MW)	Permanent Jobs(per MW)
Solar-PV[a]	1.2[1]-33[3]	0.25[1]-2.5[3]
Solar-CSP[b]	3.25[4]-10[5]	0.275[4]-1.0[5]
Central Solar*	3.42[2]	1.62[2]
Wind	0.15[1]-0.88[1]	0.1[1]
Coal	0.21[1]-3.57[4]	0.5[4]-0.59[1]
IGCC Coal	2.54[6]	0.36[6]
Gas	0.21[1]	0.6[1]

a) PV: Photovoltaic

b)CSP: Concentrated Solar Power
*Central Solar makes use of both PV and CSP technologies
[1] Daniel M. Kammen, Kamal Kapadia, and Matthias Fripp (2004) *Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate?* RAEL Report,
University of California, Berkeley. P. 10.
[2] Navigant Consulting, Inc. estimates, June 2006.
[3] Clean and Diversified Energy Initiative. Solar Task Force Report. January, 2006. Western Governors' Association.
[4]Suemedha Sood. Harnessing the Sun: The Future of Green Jobs. April 11, 2008. The Washington Independent. http://washingtonindependent.com/view/harnessing-the-sun
[5] Dr. Franz Trieb. Powerpoint: Concentrating Solar Power Now: Clean Energy for Sustainable Development. German Aerospace Center. P. 11. 2007
[6] Frequently Asked Questions. FutureGen Alliance, Inc. 2006.
http://www.futuregenalliance.org/faqs.stm

Typically, construction of a power plant takes between 2 and 3 years. Even if we assume that a coal/gas power plant takes 30% longer to construct, solar facilities still provide more employment hours per MWh produced (Kammen, et al.). In addition, for every MW of power capacity, solar plants employ a greater number of workers than do fossil fuel-based facilities.

Integrated Gassification Combined Cycle (IGCC) coal power plants, however, are an exception. They have the potential to offer up to 3.4 more manufacturing/construction jobs per MW capacity than either normal coal or gas plants. This is directly linked to greater initial capital costs for an IGCC coal plant.[10] An IGCC coal facility requires the manufacture of more complex equipment, which also may require skilled installation. All of this raises the costs of providing electricity, which is then passed on to the consumer. However, as discussed above and below, clean energy such as solar or wind power is likely to have higher net pubic benefits when the impacts associated with lower pollution levels are also considered.

The absence of harmful effluence is another serious benefit of implementing renewable energy. For a single megawatt-hour (MWh) of energy, a coal plant may produce between 0.3 and 1.5 tons of carbon dioxide (Carma.org). Over a year at a run-of-the-mill coal plant, this comes to about 3.7 million tons of CO2 and thousands of tons of other effluent.[11] Natural gas combined cycle plants are one of the leading "clean" fossil fuel-based energy producers. Still, they emit about 1900 tons of CO2, 0.045 tons of CO, and 0.075 tons of NOx per MW of total capacity.[12] IGCC coal facilities boast near-zero emissions from the technologies they implement. CO2 effluence is largely eliminated, and SO2 and NOx effluence is considerably lower than standard coal/gas power plants. However, it is still effluence that could be curbed completely by using solar energy

[10] EnergyJustice.net. Fact Sheet: "Clean Coal" Power Plants (IGCC).
http://www.energyjustice.net/coal/igcc/factsheet-long.pdf
[11] Environmental Impacts of Coal Power: Air Pollution. Union of Concerned Scientists. August 18, 2005.
http://www.ucsusa.org/clean_energy/coalvswind/c02c.html
[12] L. Stoddard, J. Abiecunas, and R. O'Connell. Economic, Energy, and Environmental Benefits of Concentrating Solar Power in California. National Renewable Energy Laboratory. April, 2006.

systems. In general, for every 1 MW of coal/gas power replaced by a renewable source: approx. 3,640 tons CO2, 9.2 tons SO2, 11.2 tons NOx is avoided.[13]

These emissions have costs beyond the impairment of ecological services. Each year, effluence affects people across the country. Annually, there are hundreds of thousands of hospital visits and millions of lost worker days attributed to gases and particulate emitted by fossil fuel-based power plants.[14]

There are a number of additional costs to coal/gas power facilities. First, the fuel required to generate electricity is a resource into which considerable resources must be invested. Recovering gas/oil/coal often requires seismic analysis to locate the resource. Then the fuel must be extracted, processed, and transported to where it is needed. Solar power plants require only natural sunlight, which costs nothing to locate or transport. Coal power plants also use copious quantities of water. Traditional facilities annually use about 4.4 million gallons of water for every MW of capacity.[15] IGCC plants may be worse, requiring up to 2500 gallons every minute.[16] Even if significant water recycling is performed, the need still ads up. Furthermore, both traditional and IGCC coal facilities release waste water. Even if this waste water complies with EPA standards, contaminants are still released into natural water systems.[17] Depending on the type of development, solar projects can use more or less water. Parabolic trough and central tower systems both use steam to power a conventional generator. These types of plants can either be "wet cooled" with water or "dry cooled" with air. Using up to 1,000 gallons per MWh, wet cooled plants equal or even exceed water intensive nuclear and coal plants – see Table 1 on page 7.. Though they are slightly less efficient, dry-cooled plants are preferable in many arid solar development areas as wet cooled plants have the potential to strain water resources. In addition to using dry-cooling, another potential solution to water concerns is to site CSP arrays on degraded agricultural lands that retain their water rights.

Table 1. Water Use by Power Plant Type[18]

[13] Concentrated Solar Power. American Solar Energy Society, Solar Electric Division. www.ases.org/divisions/electric/facts_csp.pdf

[14] Data for U.S. Moving Toward Ban on New Coal-Fired Power Plants. Earth Policy Institute. February 14, 2008. http://www.earth-policy.org/Updates/2008/Update70_data.htm

[15] Environmental Impacts of Coal Power: Water Use. Union of Concerned Scientists. August 18, 2005. http://www.ucsusa.org/clean_energy/coalvswind/c02b.html

[16] Frequently Asked Questions. FutureGen Alliance, Inc. 2006. http://www.futuregenalliance.org/faqs.stm

[17] EnergyJustice.net. Fact Sheet.

[18] Unless otherwise noted, the reference for data in this table is: *Fuel from the Sky: Solar Power's Potential from Western Energy Supply*, Dr. Arnold Leitner, Senior Consultant, RDI Consulting, NREL/SR-550-32160. July 2002. p. 34 http://www.nrel.gov/csp/pdfs/32160.pdf

Power Plant Type	Water Use (Gallons/MWh)
Nuclear	620
Coal	670
Combined Cycle Natural Gas	250-300
Parabolic Tough (Wet Cooled)[19]	1,000
Parabolic Trough (Dry Cooled)[20]	80
Dish/Stirling	4.4
Photovoltaic (PV)	4.4

Land is another finite resource that is necessary for all types of infrastructure, including power facilities. Table 2 shows estimates of the acreage needed for every MW of capacity for different facilities.

Table 2. Acres Per Megawatt of Generation Capacity

Energy Source	Acres/MW
Solar-PV	2.47[7]-12.36[7]
Solar-CSP	5.0[10]-12.33[8]
Wind	24.71[7]-50[9]
Coal	0.35[9]-1.1[11]
IGCC Coal	1.31[12]-2.36[12]
Gas	0.29[13]-0.41[13]

[7] PV FAQ's. U.S. Department of Energy, Energy Efficiency and Renewable Energy. National Renewable Energy Laboratory. (www.hubbertpeak.com/Apollo2/photovoltaics/HowMuchLandNREL.pdf)
[8] Concentrating Solar Power: From Research to Implementation. European Commission. European Communities, 2007.(ec.europa.eu/energy/res/publications/doc/2007_concertrating_solar_power_en.pdf)
[9] Cure for the Common Coal: Can Wind Power Replace Traditional Fossil Power? Time2Time.June 3, 2008. (http://uva72.blogspot.com/2008/06/cure-for-common-coal-can-wind-power.html)
[10] Concentrating Solar Power. U.S. Department of Energy, Energy Efficiency and Renewable Energy. National Renewable Energy Laboratory. (solareis.anl.gov/documents/docs/NREL_CSP_1.pdf)
[11] Jonah Lamb. Killer Coal. Salt Lake City Weekly. May 3, 2007. (http://www.slweekly.com/index.cfm?do=article.details&id=1CA7B2DC-2BF4-55D0-F1FC484A425B4016)
[12] Final Site Selection Report. FutureGen Industrial Alliance, Inc. Submitted to Department of Energy, Dec. 18, 2007.
[13] Eleanor Charles. A Flurry of Proposals for Gas-Fired Power Plants. The New York Times. October 24, 1998. (http://query.nytimes.com/gst/fullpage.html?res=9507E6D8123DF937A15753C1A96E958260&sec=&spon=&pagewanted=all)

[19] U.S. Department of Energy Energy Efficiency and Renewable Energy. "Cooling for Parabolic Trough Power Plants." 2006. http://www.nrel.gov/csp/troughnet/pdfs/40025.pdf
[20] Ibid.

In this category, fossil fuel-based power facilities appear to more efficient. However, the land necessary to extract and process their respective fuel sources should be reviewed in any adequate cost/benefit breakdown. There are also the costs of reclaiming sites where coal, oil, and gas have been extracted. These cost taxpayers hundreds of millions of dollars every year.[21] Without considering all of the costs behind every unit of power produced, any analysis of costs and benefits is insufficient.

The SunZia Transmission Project should focus primarily on the transmission of new renewable energy rather than fossil fuel energy. We recognize that some open lands may be developed for this project and this development should be done is such a way that maximize the net public benefits. It is clear when the environmental costs of fossil energy are considered that net public benefits will be higher with renewable energy.

Furthermore, regardless of the type of facility, there are some means of abating the costs of installing energy transmission. Undeveloped lands may be worth considerably more for recreational purposes and the ecosystem than are lands that have already been disturbed from their natural states. Therefore, locating new facilities and corridors near existing infrastructure keeps essentially all of the benefits of a facility located anywhere while simultaneously reducing the market and non-market costs of installing the new infrastructure.

Recommendations: In order to ensure that the proposed energy transmission results in maximum net public benefits, the analysis of this development in the SunZia EIS must account for the all opportunity costs. This includes the costs associated with siting utility-scale renewable energy development on undeveloped public lands, and the resulting loss of economic benefits, as well as the potential jobs and income to local communities. The analysis should also compare the relative costs of other forms of energy development and the proposed transmission should adhere to its stated purpose and favor renewable energy transmission over fossil fuel energy.

3. Benefits of Siting on Brownfields

There are millions of acres of contaminated lands in the U.S.[22] Serious potential exists for installing new renewable power generation and the associated transmission, such as that proposed in the SunZia EIS, on these lands.

While we recognize that the siting of particular power generating facilities is outside the scope of the SunZia EIS, the analysis of the connected actions should account for the location of the renewable energy this transmission is proposed to support. The conditions of many brownfields are particularly well-suited for the development and operation of power facilities. There are many sites where the ground is relatively level and significant vegetation is absent; much of this was done when these sites were originally established.

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[21] Data Tables and Figures. 2006 Annual Report. OSM/DOI Strategic Plan Measures. Office of Surface Mining. 2006. http://www.osmre.gov/annualreports/06AR11.pdf

[22] Powerpoint: Land-Based Initiatives and Climate Change. SRA International. EPA Land Revitalization Staff Office. June, 2007. http://www.authorstream.com/Presentation/Margherita-45877-NARUC-Pres-July-15-Land-Based-Initiatives-Climate-ChangeJune-2007-Opportunities-GHG-Education-ppt-powerpoint/

In addition, most brownfields are located within 5 miles existing electricity transmission infrastructure, reducing the need to further impact the nearby area by developing transmission corridors.[23] Furthermore, most of these sites already exist in a "heavy industry" zoning classification that a power facility requires. This also provides access to established waste streams.[24]

Installing renewable power transmission infrastructure on brownfields also avoids many of the costs associated with developing open public and private lands. Ecological integrity and opportunities for recreation are already largely absent. In fact, many of these contaminated land sites can be improved. Progressive land restoration would improve environmental conditions and help to mitigate carbon emissions.[25]

Recommendations: The SunZia EIS should include an analysis of the relative benefits of siting the proposed energy transmission (and the concurrent energy generation) on brownfields and other degraded lands, both public and private. The analysis should examine the net public benefits of siting on these lands relative to siting on undeveloped lands, especially undeveloped public lands which may be more important for the climate change mitigation properties, the provision of recreation opportunities, their role in local economies and their provision of passive use and other non-market values.

ii. Non-Market Values Should be Included in the Economic Analysis

One of the most important purposes of public lands, including those administered by the Bureau of Land Management, is the provision of public goods or non-market goods. Opportunities for solitude, outdoor recreation, clean air, clean water, the preservation of wilderness and other undeveloped areas would be underprovided if left entirely to market forces.

In the assessment of the socioeconomic impacts of solar energy development, the SunZia EIS must account for the non-market values associated with undeveloped wild lands. The BLM has an inherent responsibility to see that these lands are not impaired in order to ensure that the public goods they produce continue to be provided and in quantities that meet the demand of all U.S. citizens.

Non-market values have been measured and quantified for decades. There is a well-established body of economic research on the measurement of non-market values, and the physical changes (which result in decreases in the source of these values) brought about by development are very easy to measure quantitatively.

This analysis is especially important when considering actions which would degrade or damage roadless areas or other lands with wilderness characteristics since these lands produce benefits and values that are seldom captured in the existing market structure. The literature on the benefits of wilderness and other undeveloped lands is well-established and should be used by BLM to estimate the potential value of these lands where the SunZia energy transmission is proposed. Krutilla (1967) provides a seminal paper on the

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[23] Ibid.
[24] Energy Department Announces National Initiative to Redevelop Brownfields with Renewable Energy. U.S. Environmental Protection Agency. April 4, 2008. http://www.epa.gov/brownfields/html-doc/brightfd.htm
[25] Land-Based Initiatives and Climate Change. 2007.

valuation of wilderness and has led the way for countless others who have done additional research all providing compelling evidence that these lands are worth much more in their protected state. Morton (1999), Bowker et al. (2005), Krieger (2001) and Loomis and Richardson (2000) provide overviews of the market and non-market, use and non-use values of wilderness and wildlands. See Walsh et al. (1984), Bishop and Welsh (1992), Gowdy (1997), Cordell et al. (1998), Loomis and Richardson (2001) and Payne et al. (1992) for several more examples.

Peer-reviewed methods for quantifying both the non-market and market costs of changing environmental quality have been developed by economists and are readily applicable to solar energy development. For a catalog of these methods see Freeman (2003). For a complete socioeconomic analysis, BLM should adapt these methods to conditions in the impacted areas in New Mexico and Arizona to obtain a complete estimate of the economic consequences of the proposed transmission development.

The socioeconomic analysis in the SunZia EIS must also adequately address the potential impacts on the quality of life for residents of communities that will be impacted by the transmission development. The quality of life in many communities with abundant protected public lands is often tied inextricably with those lands. Any negative impacts on these lands from transmission development may deteriorate aspects of the western quality of life. As discussed above, such a decline will create more than simply emotional or psychological impacts. Areas with high quality of life are better able to attract the entrepreneurs, skilled and creative workers, retirees and others who are important economic drivers of many western communities.

Recommendations: The SunZia EIS must measure and account for changes in non-market values associated with the proposed energy transmission development. To do otherwise omits a very important socioeconomic impact that would directly result from this development. The analysis must assess the non-market economic impacts to all Americans, including the passive use values of undeveloped public lands.

The SunZia EIS must also include an assessment of impacts on the local quality of life that are may result from the development of energy transmission on surrounding public lands. The potential resulting economic impacts of any decline in quality of life must also be assessed in order to fully evaluate the proposed development.

iii. Recommended Methods for Socioeconomic Analysis

1. Economic Base Models

The use of economic base models such as IMPLAN is insufficient to predict future economic impacts from the development of energy transmission facilities. While these models can be useful as a tool to develop static analyses of the regional economy, the BLM and local communities potentially impacted must be aware of the shortcomings and poor track record of such models as predictive tools. Economic base models do not consider the impacts of many important variables that affect regional growth in many rural communities, especially in the West. Attributes such as natural amenities, high quality hunting, fishing and recreational opportunities, open space, scenic beauty, clean air and clean water, a sense of community, and overall high quality of life are not measured or accounted for in economic base models, however these amenities are

associated with attracting new businesses and migrants as well as retaining long-time residents. Many residents of Western communities (both long-time and new) earn retirement and investment income, and while it is technically possible, most economic base models completely fail to consider the important economic role of retirement and investment income.

Many economists have offered constructive critiques of the such models. See for example: Krikelas (1991), Tiebout (1956), Haynes and Horne (1997), Hoekstra, et al. (1990), Richardson, 1985 and the Office of Technology Assessment (1992). The ease of data acquisition for estimating the impacts of manufacturing, construction and resource extractive sectors combined with the difficulty of estimating the impacts of recreation and tourism underscores the potential bias favoring development in economic base models. The concern over the accuracy of these models combined with concern over the use of such models for planning, suggests that it is not only inappropriate but a disservice to rural communities to rely on economic base analyses to estimate the economic impacts of public land management on rural communities.

Recommendations: We recommend that the analysis performed for the SunZia EIS not rely solely on IMPLAN or on other models derived from economic base theory to predict the economic impacts of energy transmission development. As these comments demonstrate the relationship between public land management and local and regional economic prosperity and growth is far more complex than these models assume, and given the potentially significant impacts on many of the region's public lands, use of such models will result in an incomplete and inadequate analysis of the socioeconomic impacts.

2. Estimation of the Impacts to Property Values

There is a large body of work which looks at the positive impacts of open space and protected public lands on property values.[26] These studies can be applied to infer the inverse decline in property values associated with the loss of protected public lands and open spaces that may occur when energy transmission facilities are sited on such lands. Numerous studies show that there is a positive correlation between property values and open spaces and protected public lands. McConnell and Walls (2005) provide a good overview of both property values and non-use values associated with open spaces. All of these studies provide empirical evidence of the potential losses to western citizens from the conversion of open space to industrial use. Given that the proposed energy transmission development will impact public land and open space throughout the area, it is likely to have negative impacts on the property values in New Mexico and Arizona.

Recommendations: The SunZia EIS should include an examination of the impacts of the development of the proposed energy transmission on residential and other property values. The agencies should make a quantitative assessment of these potential impacts.

[26] Several examples of studies of the impact of open space on property values include Earnhart (2006), Bengochea Moranco (2003), Espey and Owosu-Edusei (2001), Bolitzer and Netusil (2000), Lutzenhiser and Netusil (2001), Geoghegan et al. (2003), Geoghegan (2002), Acharya and Bennett (2001), Irwin (2002), Tajima (2003), Luttik (2000), Loomis et al. (2004) and Breffle et al. (1998).

F. Right of Way Terms and Conditions

i. Restoration and Bonding

Bonding should be sufficient to cover the costs of restoration, as well as the cost of compliance with other terms of the ROW grant, including actions that the agency may take if the ROW grant is terminated for noncompliance. *See*, IM No.2007-097.

Restoration of the site includes not only removal of equipment but also reclamation of surface disturbance, including the facility footprint and access roads, and revegetation with native species in a distribution comparable to that of surrounding lands.

ii. Management Practices to Limit Impacts on the Environment

Right-of-way grants should include a standard term requiring that operations are conducted in a manner that minimizes and seeks to avoid adverse impacts to land, air and water, and to cultural, biological, visual, and other resources, as well as to other land uses and users. The BLM should also retain the right to require reasonable measures be taken to fulfill this requirement, such as modification to facility siting or design, timing and location of construction activities, and specification of interim and final reclamation measures. The agency's standard oil and gas lease terms contain a comparable term, which could be used as a starting point. However, because the ROW should also include a right to require phased development and other changes based on monitoring results, the BLM's ability to require "reasonable measures" should be more broadly defined.

Other management practices that will limit the overall impact of transmission development should also be included in the terms of the ROW, such as:

1. locating roads and maintaining the site to avoid erosion and sedimentation, limit number of roads needed, minimize habit disruption;
2. preconstruction surveys for threatened and endangered species, as well as state listed species;
3. protection plans for adjacent habitat and species;
4. off-site mitigation where habitat disruption is unavoidable;
5. locate facilities in proximity to existing roadways and sources of other necessary resources;
6. minimize the overall size of the project;
7. include avian protection plans (*see* www.aplic.org)
8. periodically assess feasibility of incorporating technological advances that improve efficiency and/or reduce impacts on wildlife and other natural resources.

iii. Termination for Noncompliance

Should the ROW holder fail to comply with any of the terms set out in the grant or the plan of development, the BLM should have the ability to terminate the ROW if the failure continues for 30 days after written notice. The ROW grant should also explicitly provide

that, in the event of termination, the BLM has the right to use the bonded funds to dispose of the facility and restore the site. Once again, while the agency's standard oil and gas lease contains a comparable term, it is important that the ROW grant for development of high voltage transmission lines contain explicit remedies for not only termination but also for restoring the land to its previous condition.

Recommendation: The BLM should develop an expanded set of standard terms that will be set out in the Draft EIS and incorporated into all ROWs and plans of development where applicable.

Thank you for your consideration of these comments.

Sincerely,

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Attachments and References

Attachments

Note: Attachments 1, 2 and 4 were included with the original scoping comments submitted July 13th, 2009. Those attachments are not included again here, but are available upon request. Attachment 3 is a new attachment, and is included here.
Attachment 1: GIS data and explanatory excel spreadsheet for Arizona Wilderness Coalition's Citizens' Wilderness Inventory areas; GIS data and explanatory excel spreadsheet for New Mexico Wilderness Alliance Citizens' Wilderness Proposal areas.
Attachment 2: Detailed narratives for New Mexico Wilderness Alliance Citizens' Wilderness Proposals in the SunZia project area.
Attachment 3: Argonne National Laboratory. 2007. *The Design, Construction, and Operation of Long-Distance High-Voltage Electricity Transmission Technologies.*

Attachment 4: The Wilderness Society. 2006. *Socio-Economic Framework for Public Land Management Planning: Indicators for the West's Economy* Washington DC: The Wilderness Society.

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The Wilderness Society Natural Resources Defense Council
Audubon New Mexico New Mexico Wilderness Alliance Western Resource Advocates
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November 25th, 2009

Delivered via electronic mail (adrian_garcia@nm.blm.gov; nmsunziaproject@blm.gov) and U.S. mail (with attachments).

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Re: Scoping comments on new alternative routes for the proposed SunZia transmission project

Dear Mr. Garcia,

Please accept and fully consider these comments on the proposed SunZia transmission project (SunZia) by The Wilderness Society, Natural Resources Defense Council, Audubon New Mexico, and the New Mexico Wilderness Alliance, and on behalf of the Grand Canyon Chapter of the Sierra Club, Western Resource Advocates, the Arizona Wilderness Coalition, Sky Island Alliance, the Coalition for Sonoran Desert Protection and the New Mexico Audubon Council. These comments supplement the comments submitted August 28th, 2009, which built upon the comments submitted July 13th, 2009. The August 28th, 2009 comments are attached and incorporated by reference (Attachment 1).

The comments below are organized into five sections: 1) additional information on opportunities to use cutting edge technologies for undergrounding lines in key areas; 2) identification of additional routes which should be considered in the Draft Environmental Impact Statement (EIS); 3) identification of routes with the least environmental impacts, based on current knowledge; 4) identification of route with unacceptable environmental impacts, based on current knowledge; and 5) identification of potential conflicts with military operations and possible solutions.

Introduction

The mission of **The Wilderness Society** is to protect wilderness and inspire Americans to care for our wild places. We have worked for more than 70 years to maintain the integrity of America's wilderness and public lands and ensure that land management practices are sustainable and based on sound science to ensure that the ecological integrity of the land is maintained. With over 500,000 members and supporters nationwide, TWS represents a diverse range of citizens.

Natural Resources Defense Council (NRDC) is a non-profit environmental organization with 1.3 million members and online activists. NRDC uses law, science and the support of its

members and activists to protect the planet's wildlife and wild places and to ensure a safe and healthy environment for all living things. NRDC has worked to protect wildlands and natural values on public lands and to promote pursuit of all cost-effective energy efficiency and sustainable energy development for many years.

Audubon New Mexico is the state office of the National Audubon Society with the mission to conserve and restore natural ecosystems in New Mexico focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity. With 5,000 members and volunteers statewide, Audubon aims to enhance the knowledge of New Mexico citizens to make informed decisions about the protection of wildlife. There are four local Audubon chapters throughout New Mexico – Mesilla Valley Audubon Society, Southwestern New Mexico Audubon Society, Central New Mexico Audubon Society, and Sangre de Cristo Audubon Society – which are community-based organizations providing Audubon with a local constituency and leadership in many of New Mexico's largest and fastest growing communities including Albuquerque, Belen, Las Cruces, Santa Fe, and Silver City.

The **New Mexico Wilderness Alliance** is a non-profit 501 C3, grassroots, environmental organization dedicated to the protection, restoration, and continued enjoyment of New Mexico's wildlands and Wilderness areas. The primary goal of the New Mexico Wilderness Alliance is to ensure the protection and restoration of all remaining wild lands in New Mexico through administrative designations, federal Wilderness designation, and on-going advocacy.

It is clear that the nation's growing addiction to fossil fuels, coupled with the unprecedented threats brought about by global warming, imperil the integrity of our wildlands as never before. To sustain both our wildlands and our human communities, we believe the nation must transition away from fossil fuels as quickly as possible. To do this, we must eliminate energy waste, moderate demand through energy efficiency, conservation, and demand-side management practices, and rapidly develop and deploy clean, renewable energy technologies, including utility-scale projects. For these reasons, it is important to the undersigned that the SunZia line is planned to transport renewable energy and we are seeking to ensure that it both supports renewable energy and protects the natural values of the lands it will cross.

Though renewables should be developed first in areas close to existing transmission and demand, new transmission will be necessary to access stranded resources. Like renewables siting and development, this transmission must be sited and built in the best way possible, using an open, stakeholder driven process to identify and address siting conflicts early and aggressively pursuing all available options to minimize and mitigate any unavoidable impacts. This approach is of even more importance in the case of SunZia, because if the rich wind and solar resources accessed by the lines are to be developed fully, multiple additional lines will be necessary going forward. These additional lines should be sited in the same corridor as the SunZia lines to minimize impacts. With the potential for multiple high-voltage lines paralleling SunZia, it is of paramount importance that the SunZia corridor be chosen well.

I. Additional information on possibility for economical burial of lines using new American Superconductor technology.

As discussed in Attachment 1, undergrounding power lines can have significant environmental benefits, obviate airspace and/or military conflicts, and allay many local concerns that are raised in the context of new transmission line proposals, such as impacts to property values, view shed and quality of life. By minimizing, or avoiding these concerns entirely, undergrounding can help avoid costly delays in the permitting process, benefitting project proponents and speeding the delivery of renewables to market.

With the advent of new technologies some of the engineering and economic barriers to undergrounding cables are being addressed. New high-temperature superconductor cables (HTS), such as those produced by American Superconductor, have three to five times the capacity of conventional underground AC cables and up to ten times the capacity of DC cables. These new cables operate between about 65 and 75 degrees Kelvin (about –210 C and –200 C), which is a significant advancement from previous superconductors, which had to be operated at just a few degrees Kelvin. The wires are kept at these temperatures by running liquid nitrogen through the cables, unlike other technologies which use oil and other mediums for temperature control.[1]

One of the factors limiting the use of undergrounding to date has been cost. Underground cable system costs are driven by site-specific design and installation parameters while ballpark estimates are often predicted using a uniform cost ratio of underground to overhead cables.[2] Costs for undergrounding different cable technologies will continue to fluctuate with market conditions and vary from project to project, but preliminary data suggests that there can potentially be long term cost savings over the life of these newer, more efficient technologies.[3]

As discussed in Attachment 1, undergrounding cables has great potential for avoiding and minimizing environmental impacts on sensitive resources. HTS cables in particular have significant promise to minimize unacceptable impacts. According to American Superconductor, these cables can be installed in existing rights of way – some as narrow as three feet – with a 25 foot construction easement.[4]

Given the presence of sensitive environmental resources along many of the proposed routes and the proximity of several military installations with flight operations, strategic use of undergrounding must be considered as a way to minimize or possibly avoid some of the proposed project's impacts. The use of undergrounding along specific proposed routes is discussed in greater detail in the analysis of each proposed route.

Recommendations: BLM should consider the option of requiring construction of underground transmission lines where proposed rights-of-way conflict with sensitive biological resources, and where conflicts with military activities may reduce the feasibility of environmentally preferable routes. BLM should study the potential impacts of both burying lines (including analysis of all available technologies for burying lines, including but not limited to HTS lines, oil cooled, gas

[1] http://www.amsc.com/pdf/HTSC_AN_0109_A4_FINAL.pdf
[2] http://www.aep.com/about/i765project/docs/UGvsOVHDPaper.pdf
[3] Ibid.
[4] Presentation, American Superconductor, attached to these comments for your reference (Attachment 2)

cooled, and XPLE insulated lines) and keeping them above ground, evaluating the pros and cons of these alternatives, and then recommend the approach that best protects the environment.

II. Additional route which should be considered in the Draft EIS in Southern Arizona: a route following I-10 and skirting Tucson by following the existing 345 kV line to the southwest.

As described in Attachment 1, a route should be considered heading west in Arizona which continues to follow I-10 where the existing alternative route heads northwest to the proposed Willow substation. This new route could continue on along I-10 and then skirt Tucson by following the existing 345 kV line to the southwest. Such a route would avoid the sensitive resources in the Aravaipa Valley, Aravaipa Canyon, the northern Pinaleño Mountains, the northern Galiuro Mountains, and the San Pedro River Valley.

Recommendations: BLM should thoroughly evaluate an alternative route along I-10, which then follows the existing 345 kV line around Tucson, which avoids significant impacts along existing proposed and alternative routes. If this route is determined to be viable and have fewer environmental impacts than other alternatives, BLM should select it as its preferred alternative in the Draft EIS. In evaluating all alternatives, BLM should consult with local stakeholders in the area of these routes, including local communities and Native American Tribes, in addition to completing detailed analysis of potential impacts from these routes and requiring measures to avoid, minimize and mitigate those impacts.

III. Among routes already identified in BLM scoping materials, routes with least environmental impacts, based on current knowledge, should be pursued.

a. New Mexico route with least environmental impacts, based on current knowledge: around the east side of the White Sands Missile Range (WSMR)

The New Mexico route with the least environmental impacts (Least Impact Route), based on current knowledge, is shown in red in the attached map of New Mexico Routes with Least Environmental Impacts (Attachment 3). This is the route which runs furthest south in the area of the proposed Organ Mountains National Conservation Area (through "Parcel B", as shown in Attachment 3), then along Hwy 54 in the McGregor Range Utility Corridor to the northeast. This route then runs along the east side of the WSMR and meets back up with Hwy 54 just south of the Otero/Lincoln County line and follows Hwy 54 northeast to the eastern terminus of the route. As detailed in Attachment 1, all of the routes west of the WSMR would have significant environmental impacts. The Least Impact Route would still have significant environmental consequences, but appears to have the least environmental impacts, based on current knowledge, for the following reasons:

i. Least impacts to Rio Grande River and avian migration routes

As detailed in Attachment 1, any crossing of the Rio Grande River will likely cause significant impacts to migrating bird populations and other wildlife. The crossing north of the Bosque del Apache National Wildlife Refuge (Unacceptable Route), in particular, would have unacceptable

impacts to migrating birds and other wildlife. The Least Impact Route would have the least amount of impacts because it decreases the effect on waterbirds and the migratory, wintering, and breeding bird populations that rely on the middle Rio Grande Valley.

ii. Least impacts to lands with wilderness characteristics

As shown in Attachment 3, the Least Impact Route would directly intersect the fewest number of Citizens' Wilderness Proposal (CWP) areas inventoried by the New Mexico Wilderness Alliance. As described in detail in Attachment 1, lands that have wilderness characteristics and are under consideration for protection under the Wilderness Act, 16 U.S. C. § 1131-1136, or under specific administrative prescriptions, require special management; they should be carefully identified and protected from the impacts of transmission. Attachment 1 also details the many specific resources and values in these CWP areas the need to be protected from the impacts of transmission. Further, the Least Impact Route avoids crossing the CWP area west of Lordsburg (since the route passes north of Lordsburg), so it has the least impacts of the routes west of Doña Ana County.

iii. Limited impacts to cultural resources

The information in this section was produced by the National Trust for Historic Preservation and the Center for Desert Archaeology and is included with their consent. Attachment 1 details potential impacts to cultural resources from routes west of the WSMR. The Least Impact Route has fewer potential impacts to cultural resources, based on current knowledge, because it largely avoids historic trails and concentrations of medium to large prehistoric pueblo sites. Still, adverse physical and visual impacts to trails that may be crossed by this easternmost SunZia alternative must be avoided, minimized, or mitigated. Relevant important trails include: the Janos Copper Road that runs from Santa Rita south to Mexico; the Butterfield Overland Mail route that runs across western New Mexico and down through El Paso; and the Mormon Battalion Trail/Cook's Wagon Road that runs through the southwestern corner of New Mexico, up the Rio Grande, and then through the northeast corner of New Mexico. Similarly, because some large prehistoric pueblo sites are concentrated in the Mesilla Valley south of Las Cruces and along the Mimbres River farther west, BLM must ensure that impacts to cultural resources at river crossings are ideally avoided, at the very least minimized or, as a last resort, mitigated.

iv. In the Las Cruces Area, the Least Impact Route has the least impacts on the proposed Organ Mountains National Conservation Area

Of the routes which run through the proposed Organ Mountains National Conservation Area, the Least Impact Route would have the least impacts on the purposes established for the proposed NCA. This route runs in close proximity to an existing paved road, an existing pipeline, and an existing 115kV transmission line.

v. BLM should consider a modification to the Least Impact Route, continuing to follow Hwy 54 towards Alamogordo

As shown in blue in Attachment 3 (Recommended Modification), there is potential for a modification to the Least Impact Route which would further limit impacts. The Least Impact Route could be modified to continue to follow Hwy 54 where the Least Impact Route currently heads northwest roughly 15 miles southwest of Alamogordo. In general, siting transmission lines along existing infrastructure provides the opportunity to limit impacts by concentrating development in areas which have already been impacted by existing development. For this reason, BLM should consider the modification to the Least Impact Route shown in blue in Attachment 3.

Recommendations: In the Draft EIS, the BLM should thoroughly evaluate the potential for modifying the Least Impact Route to incorporate the Recommended Modification as another alternative or sub-alternative. BLM should thoroughly evaluate both the Least Impact Route and the Recommended Modification to identify their potential environmental benefits and should adopt one of these routes as the preferred alternative, due to the substantially reduced impacts to natural and cultural resources.

In evaluating all alternatives, BLM should consult with local stakeholders in the area of these routes, including local communities and Native American Tribes, in addition to completing detailed analysis of potential impacts from these routes and requiring measures to avoid, minimize and mitigate those impacts.

b. New Mexico route with second least environmental impacts, based on current knowledge: crossing Rio Grande River near Arrey and Derry, heading northwest along the existing 345 kV line at the southeast corner of Sierra County, turning east to the western border of WSMR and following the border north, then entering the WSMR to avoid the Antelope and Jornada del Muerto Wilderness Study Areas (WSAs).

The New Mexico Route with the second least environmental impacts (Second Least Impact Route), based on current knowledge, is shown in yellow in Attachment 3. The Second Least Impact Route crosses the Rio Grande River near Arrey and Derry, then heads northwest along the existing 345 kV line at the southeast corner of Sierra County, turns east to the western border of the WSMR and follows the border north, then enters the WSMR to avoid the Antelope and Joranada del Muerto WSAs. This route appears to have the second least environmental impacts for the following reasons:

i. Second least impacts to Rio Grande and avian migration routes

As detailed in Attachment 1 and below, any crossing of the Rio Grande River will cause significant impacts to migrating bird populations and other wildlife. The Second Least Impact Route decreases the effect on waterbirds and the migratory, wintering, and breeding bird populations that rely on the Middle Rio Grande Valley by avoiding the crossing near the Bosque del Apache National Wildlife Refuge.

ii. Second least impacts to lands with wilderness characteristics

As shown in Attachment 3, the Second Least Impact Route would directly intersect several CWP areas, but would affect fewer CWP areas than the other alternatives west of the WSMR. As described above and in Attachment 1, these areas require special management and should be carefully identified and protected from the impacts of transmission.

iii. Limited impacts to cultural resources

The information in this section was produced by the National Trust for Historic Preservation and the Center for Desert Archaeology and is included with their consent. The Second Least Impact Route would have relatively moderate impacts to cultural resources because it generally avoids historic trails and concentrations of prehistoric sites, such as those located along the northern crossing of the Rio Grande near the Bosque del Apache National Wildlife Refuge. Still, BLM must ensure that any adverse physical and visual effects to nearby historic trails (e.g., the Mormon Battalion Trail/Cook's Wagon Road) are ideally avoided, at the very least minimized or, as a last resort, mitigated.

iv. BLM needs to ensure that this route truly does not intersect the Antelope and Jornada del Muerto WSAs and associated CWPs

Though BLM's apparent intention in moving this route east into the WSMR was to avoid intersecting the Antelope and Jornada del Muerto WSAs, GIS analysis indicates that the Second Least Impact Route may still intersect these WSAs, as well the CWPs in the same area. BLM should adjust the route as necessary to truly avoid intersection with these sensitive areas, which would only require minor adjustments.

v. Potential conflict with the Spaceport

We understand that the Second Least Impact Route follows an existing 345 kV transmission line through the Spaceport that is currently under construction. We trust that BLM will work with the Spaceport to avoid or otherwise limit to acceptable level the potential impacts to Spaceport operations.

Recommendations: In the Draft EIS, the BLM should thoroughly evaluate the potential for reducing damage to environmental and cultural resources by adopting the Second Least Impact Route.

In evaluating all alternatives, BLM should consult with local stakeholders in the area of these routes, including local communities and Native American Tribes, in addition to completing detailed analysis of potential impacts from these routes and requiring measures to avoid, minimize and mitigate those impacts. BLM should also ensure that the Antelope and Jornada del Muerto WSAs and associated CWPs are not intersected by the route. Further, BLM should also work with the Spaceport to avoid or minimize impact to operations.

IV. Route that should not be considered because of unacceptable impacts to avian migration routes and wildlife habitat (unless undergrounding in this area is

determined to be feasible and environmentally acceptable): crossing the Rio Grande River north of the Bosque Del Apache NWR

As detailed in Attachment 1, any crossing of the Rio Grande River will entail significant impacts to migrating bird populations and other wildlife. We have particular concerns about the impacts of the route (Unacceptable Route), shown in Attachment 3, which crosses the Rio Grande River north of the Bosque del Apache NWR. This route would have unacceptable impacts to migrating birds and wildlife habitat. Unless analysis shows that running the lines underground in this area is feasible and reduces impacts to a level deemed acceptable by the Refuge, this route should not be brought forward for more thorough evaluation or adopted as the preferred alternative.

The Socorro Valley has been identified as the most critical landscape in the annual cycle of the Rocky Mountain Population of Sandhill Cranes (approximate population 20,000 annually) due to the density of wintering birds in one location, the limited availability of foods (natural and wintering), and the small size of this wintering area.

a. The Middle Rio Grande Valley – Critical for Migratory Birds

The Unacceptable Route will cause impermissible harms to the migratory, wintering, and breeding bird populations that use the Socorro Valley and will compromise the establishment purpose of the Bosque del Apache NWR.

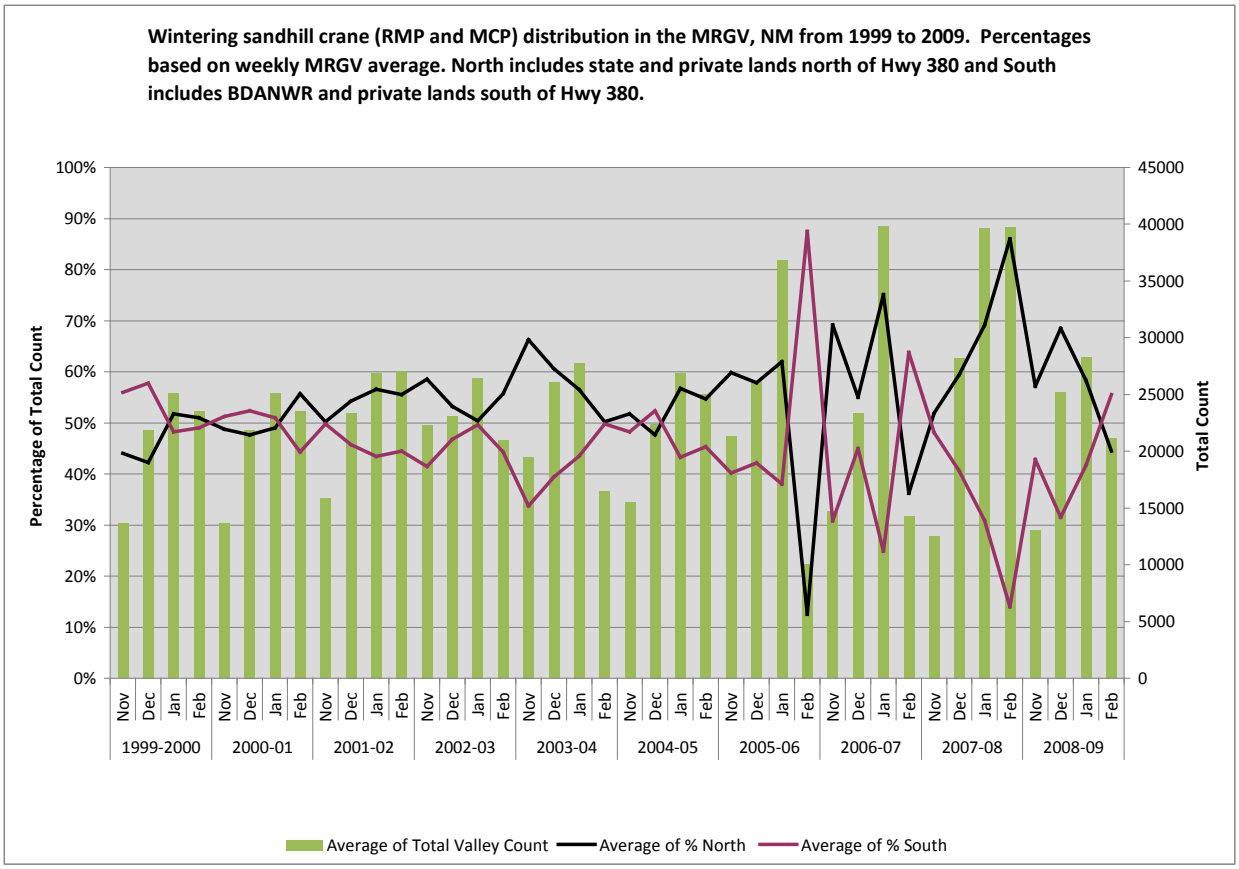
Bosque del Apache NWR was established on December 18, 1936, with the acquisition of land, using the authority of the Migratory Bird Conservation Act (16 U.S.C. 712d) of 1936, **to provide refuge and breeding grounds for migratory birds and other wildlife** as well as incidental fish and wildlife-oriented recreational development, the protection of natural resources, and the conservation of endangered species or threatened species. Additional lands were added by Executive Order 82189 on November 22, 1939.

Located on the southern end of the Central Flyway and along the key migration corridor of the Rocky Mountain Population of Sandhill Cranes, the Middle Rio Grande Valley, more specifically the Socorro Reach of the Valley, has been integral in the rebuilding and protection of this waterbird population. During the early 1900's the Rocky Mountain population of Sandhill Cranes numbers plummeted due to habitat alteration, land fragmentation, and human population growth (Taylor, 1999). By the 1940's, the Population was estimated to be fewer than 400 birds. Efforts to protect habitat, restore wetlands, and enhance existing natural and agricultural habitats in combination with sound population management practices helped the species recover to between 18,000 and 20,000 birds annually (Taylor, 1999). Today along with the Rocky Mountain Population cranes, the Middle Rio Grande Valley plays host to hundreds of thousands of migrating and wintering waterbirds and countless breeding and migratory neotropical migrants and raptors.

b. Collisions Highly Likely

Managed agricultural crops are provided at Bosque del Apache NWR and the Ladd S. Gordon Waterfowl Management Area (managed by the State of New Mexico) approximately 40 miles

north of the Refuge. Food and hunting management at each of these areas is designed to encourage daily movement between the areas to disperse the population of wintering cranes and snow geese and to reduce disease outbreak and spread (as shown on the chart reproduced below, which was provided courtesy of refuge biologists at the Bosque del Apache NWR). Daily movements north out of Bosque del Apache NWR to Ladd S. Gordon or the surrounding agricultural lands expose birds to obstacles in their flight path. Extreme weather conditions that create poor visibility, which are common along the river during the winter, further increase the likelihood of bird and transmission line collisions.



Winter distribution of Sandhill Cranes throughout the Middle Rio Grande Valley in response to location of food and roost sites.

In the San Luis Valley of Colorado, collisions with transmission lines were one of the contributing mortality factors to the experimental whooping cranes population. On certain sections of transmission lines in the San Luis Valley where wetlands and agricultural foods are bisected by transmission lines, Sandhill Crane collision events have been as high as 75 birds a night (Mark Smith pers. comm.). Historic bird and transmission line collisions at Bosque del Apache NWR and further north in Colorado stimulated the Refuge to work with the Socorro Electric Cooperative to bury all transmission lines on the refuge.

The Socorro Valley is a narrow corridor that is used by hundreds of thousands of migrating and wintering waterbirds. The Socorro Valley has been identified as the most critical landscape in the annual cycle of the Rocky Mountain Population of Sandhill Cranes (approximate population

20,000 annually) due to the density of wintering birds in one location, the limited availability of foods (natural and wintering), and the small size of this wintering area (Taylor 1999, Rod Drewien Pers. Comm). Research across all Sandhill Crane populations indicates the single most important factor regulating Sandhill Crane populations is habitat availability (Tacha et al. 1992). Understanding the importance of the Valley in the context of population viability is essential when evaluating potential anthropogenic impacts**.** In a 2005 USDA Forest Service Technical Report, Manville said that collisions with power transmission and distribution lines are estimated to kill as many as 175 million birds annually, and an additional tens to hundreds of thousands more birds are electrocuted. The difficulty with quantifying the impact of these utilities is that due to great expanse of area they cover they are poorly monitored for both strikes and electrocutions (Manville 2005).

The Socorro Valley is an important breeding area for numerous neotropical migrants including the endangered Southwestern Willow Flycatcher and the candidate species Yellow-billed Cuckoo. Extensive alteration to the river and associated floodplain has reduced the available riparian habitat and constricted it to a narrow corridor. This constriction increases the density of birds moving along the corridor increasing the likelihood of collisions. The Socorro Valley also winters numerous Bald Eagles, with annual populations varying with wintering waterbird numbers, and hosts several species of raptors throughout the year.

c. Negative Effects on the Local Economy

Ecotourism for Socorro County is directly linked to the NWR and observation and photographic opportunities available to a wide audience, and anything that harms the wildlife or mars the view of this rural setting is going to have a negative impact on visitation. Socorro County is the second poorest county in New Mexico, and the Festival of the Cranes, held annually at Bosque del Apache NWR is the single greatest income generating event. Revenue from registered attendees of the 2004 20th annual Festival of the Cranes was $51,432 and the economic benefit to the local area was $2.2 million over the 6 days of the Festival. Visitor recreation expenditures in the counties of Socorro, Bernalillo, and Sierra totaled $13.9 million of which $13.7 million came from non-residents resulting from visits to the Refuge. The total tax revenue generated by Refuge recreation visits was $4.3 million for the region. Local economic effects associated with recreational visits to the Refuge totaled more than $20.3 million in the local counties (Kerlinger 1994, USFWS 2004).

Recommendation: Unless analysis shows that running the lines underground in this area is feasible and would reduce impacts to a level deemed acceptable by the Refuge, the Unacceptable Route should not be brought forward for more thorough evaluation or adopted as the preferred alternative, due to the harms to migrating birds and wildlife habitat caused by crossing the Rio Grande River north of the Bosque del Apache NWR, and the related negative effects on the local economy of this region of such harm to the birds' habitat.

V. Potential conflicts with military operations and possible solutions

a. Least Impact Route

While the Least Impact Route is almost entirely outside the geographic boundaries of the military establishments it passes, there is still the possibility of interaction with military operations. Specifically, the Least Impact Route passes directly under a Military Training Route (MTR) just north of Tularosa. However, this MTR, designated VR176, is a visual route which has a floor of 1,500' above the ground. Since it is a visual route (pilots looking out the window), and the transmission towers will only extend approximately 130' above ground, there should not be a conflict with the operations. Towers in proximity to flight operations would be marked with high-intensity obstruction lighting to make them clearly visible from the air. In addition, they would be depicted on aeronautical charts, and would ultimately become thoroughly familiar to pilots operating in the area as visual markers.

Since the Least Impact Route also follows public roads, and is outside the fence of the bases along the route, it is highly unlikely that its existence would compromise any classified operations that the base would be conducting (since any operations in this area would already be in plain view of the public). Also, it is unlikely that any weapon testing would be in proximity to these roads, due to the inherent risk to the public.

b. Portion of Second Least Impact Route on north side of WSMR

The portion of the Second Least Impact Route on the north side of WSMR passes directly through the full width of a Restricted Area. This area is designated as R-5107C+H, which is a restriction that extends from the surface up to space. There is an MTR (VR1233) that crosses almost perpendicular to the Second Least Impact Route. This MTR is a low level route with segments less than 1,500' above the surface. The construction of a transmission line crossing this MTR will certainly be of concern to the military. One possible solution is burying the line across the portion which directly conflicts with the MTR. This solution would eliminate the military conflict with this route.

c. Additional comments on military issues

Military flight operations in the area will definitely have to take into consideration the presence of the SunZia line. However, the slight modifications that may be necessary to aircraft route or altitude, should not be used as justification to prohibit the delivery of renewable energy along this vital transmission corridor. The Federal Aviation Administration, in 14 CFR Part 77, does not require notification for structures less than 200 feet tall. Since transmission towers are in the 130 foot range, the only time they would be a consideration is when they fall within a certain radius of an airport. Our first hand observations of the entire eastern border of the White Sands range found that there were several radio towers in close proximity to the border of the base and to the proposed route which were <u>not</u> depicted on aeronautical charts. These obstructions were, however, lighted and would be visible to military pilots in the area.

It should also be noted that transmission lines, towers, wind farms and other obstructions are currently used by the military as checkpoints and turning points on MTR routes. Following this logic, it is feasible that the presence of the SunZia line could be compatible with and perhaps even used in military navigation training in the southwest.

Finally, we believe it is important for energy independence to support renewable energy, including projects like SunZia, which should also be an important consideration for all parts of the government.

Recommendations: BLM should work with the Department of Defense and consider opportunities, including the potential solutions described above, to minimize conflicts with military operations along the routes with least environmental conflicts, which we recommend should be adopted as the preferred alternative.

Thank you for your consideration of these comments. We would be happy to meet with you and further discuss any of our recommendations.

Sincerely,

Alex Daue, Renewable Energy Coordinator
The Wilderness Society
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Denver, CO 80202

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Las Cruces, NM 88001

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Phoenix, AZ 85004

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Western Resource Advocates
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Kevin Gaither-Banchoff, Executive Director
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David Hodges, Policy Director
Sky Island Alliance
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Tucson, AZ 85717

Carolyn Campbell, Executive Director
Coalition for Sonoran Desert Protection
300 East University Boulevard, #120
Tucson, Arizona 85705

Ruth Burstrom, President
New Mexico Audubon Council
Albuquerque, NM

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Kerlinger, P. 1994. The Economic Impact of Birding and Ecotourism on the Bosque del Apache National Wildlife Refuge Area, New Mexico, 1993-1994

Manville, A.M., II. 2005. Bird strikes and electrocutions at power lines, communication lowers, and wind turbines: state of the art and slate of the science — next steps toward mitigation.). C.J. Ralph and T. D. Rich.. ed (PDF). *Bird Conservation Implementation in the Americas: Proceedings 3rd International Partners in Flight Conference 2002*. U.S.D.A. Forest Service. GTR-PSW-191, Albany. CA.. http://www.abcbirds.org/abcprograms/policy/towers/manville05.pdf. Manville 2005.

Tacha, T. C., S. A. Nesbitt and P. A. Vohs. 1992. "Sandhill Crane." *In* The Birds of North America, No. 31 (A. Poole, P. Stettenherm, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, D. C.: The American Ornithologist's Union.

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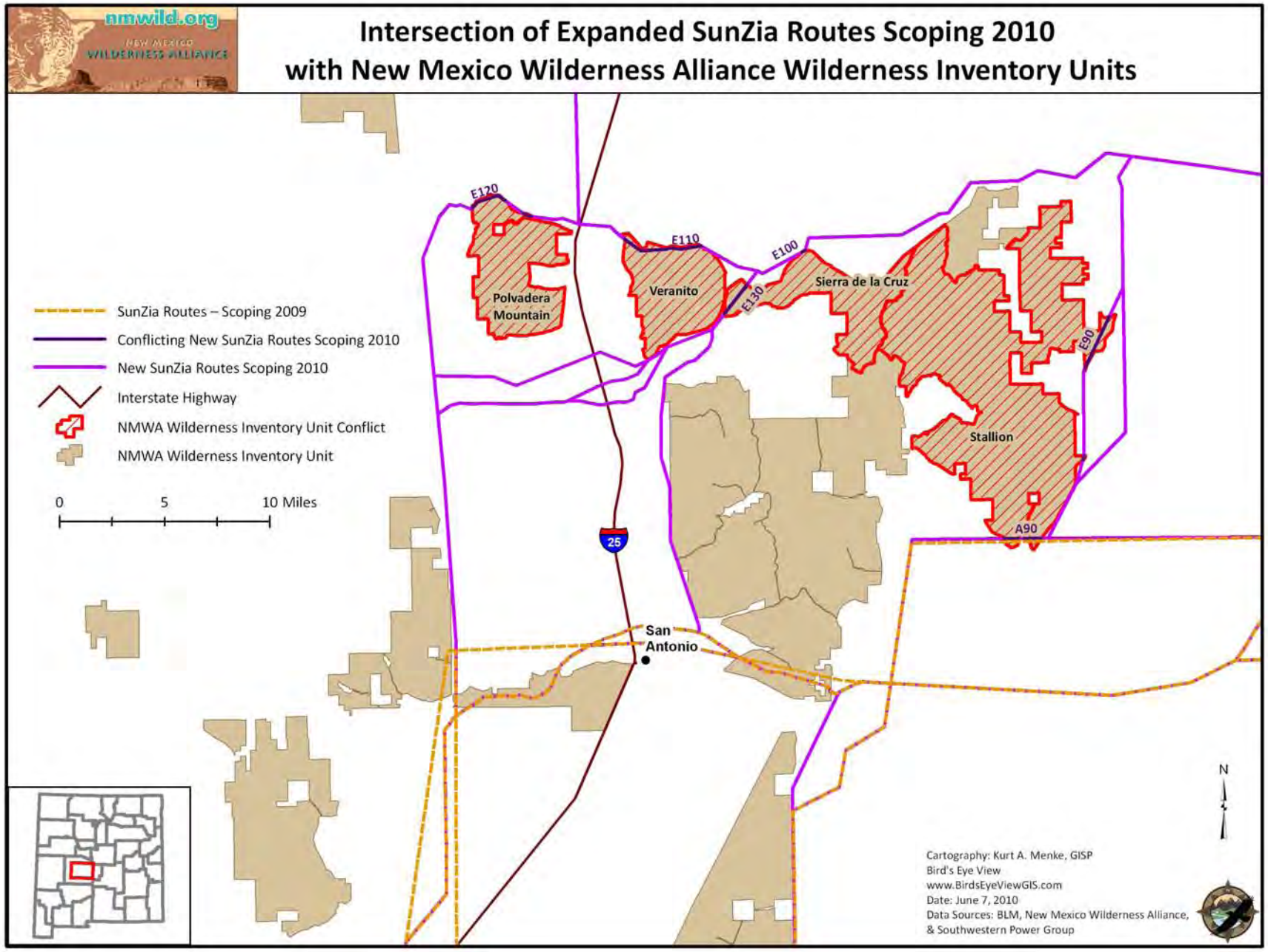
nmwild.org
NEW MEXICO WILDERNESS ALLIANCE
Intersection of Expanded SunZia Routes Scoping 2010
with New Mexico Wilderness Alliance Wilderness Inventory Units
SunZia Routes – Scoping 2009
Conflicting New SunZia Routes Scoping 2010
New SunZia Routes Scoping 2010
Interstate Highway
NMWA Wilderness Inventory Unit Conflict
NMWA Wilderness Inventory Unit
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10 Miles
E120
E110
E100
E130
E90
Polvadera Mountain
Veranito
Sierra de la Cruz
Stallion
A90
25
San Antonio
N
Cartography: Kurt A. Menke, GISP
Bird's Eye View
www.BirdsEyeViewGIS.com
Date: June 7, 2010
Data Sources: BLM, New Mexico Wilderness Alliance,
& Southwestern Power Group

RECEIVED
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2010 MAY 25 PM 12:28
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Roe Anne Lightfoot

JUN 18 2010

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STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in our County, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

Austen Washburn
Joanne Washburn

cpy
JUN 18 2010

RECEIVED
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STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
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Dear Sir/Madam:

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Sincerely,

Jerry Shaw

JUN 18 2010

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Sincerely,

Ronnie Dunsworth

JUN 18 2010

Received by
BLM 6/2/2010

Bureau of Land Management
New Mexico State Office
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Santa Fe, NM 87502-0115

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Sincerely,

Everett L. Greer SR,

EPD
JUN 18 2010

Received by
BLM 6/2/2010

Bureau of Land Management
New Mexico State Office
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PO Box 27115
Santa Fe, NM 87502-0115

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Sincerely,

epg
JUN 18 2010

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STATE OFFICE
SANTA FE, NEW MEXICO

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New Mexico State Office
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Dear Sir/Madam:

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I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

Mt B Sultemeier Ranch
259 Round Mtn. Ranch
Corona, nm
88318

JUN 18 2010

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STATE OFFICE
SANTA FE, NEW MEXICO

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Sincerely,

Joanne Washburn

JUN 18 2010

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New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help New Mexico achieve the goal of developing the state's renewable resources.

New Mexico has taken a number of steps to encourage the development of renewable resources such as implementation of a renewable mandate of 20% by 2020, and the creation of the Renewable Energy Transmission Authority. The state's leaders recognize the value of converting wind, solar and geothermal resources into electricity and how it helps diversify the state's economy and achieve energy independence.

The final steps towards fully enabling this goal will be the creation of transmission capacity to deliver the electricity to market. Without access to transmission, many of these renewable resources will remain stranded.

The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

Joanne Washburn

EPD
JUN 18 2010

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STATE OFFICE
SANTA FE, NEW MEXICO

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However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Joanne Lashbrook

EPS
JUN 18 2010

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The SunZia project should be granted all necessary permits to help New Mexico remain a leader in clean energy.

Sincerely,

M+B Sultemeier
259 Round Mtn Ranch
Corona, nm
88318

JUN 18 2010

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 25
STATE OFFICE
SANTA FE, NEW MEXICO

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir/Madam:

As a resident in Lincoln County, New Mexico, I am writing to express my support for the SunZia Southwest Transmission Project. This project will help stimulate the local economy, bring needed jobs and tax revenue.

Lincoln County has been blessed with an abundance of renewable energy resources, including wind, solar, geothermal and biomass. Full development of these resources will create personal income from land sales/leases, construction jobs, fulltime jobs, as well as government revenue from sales taxes, property taxes, and income taxes.

However, full development of the area's renewal resources is currently being hampered because there is a lack of high voltage transmission access. The SunZia project would provide needed transmission access.

Sincerely,

Sandra Alford

JUN 18 2010

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Sandra Alford
Box 86
Corona, N.M 88318

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Sincerely,

R. Noel Bell

JUN 18 2010

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Sincerely,

Betty Ann Bell

JUN 10 2010

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Sincerely,

Dan Bell

JUN 18 2010

From: Michael
To: NMSunZiaProject@blm.gov
Subject: Comments
Date: 05/23/2010 03:27 PM

Greetings,

I own property outside of Carrizzo, New Mexico and am extremely interested in the proposed route of transmission lines.

The northern routes would be the most favorable for me and my fellow property owners, those being E10 and E80.

The least favorable route would be D10.

Please consider what this transmission would do to property values. They would plummet.

Thank you for your attention.

Sincerely,

Michael Davis
104 Rooney Road
Ruidoso, New Mexico 88345

From: john decoville
To: SunZIA Group
Subject: Final draft of submitted comment concerning SunZIA
Date: 06/06/2010 04:53 PM
Attachments: To the stakeholders of the SunZIA project_B00605.docx

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To the stakeholders of the SunZIA project: 06/07/2010 Page 1

1. I urge your group to recommend the Tucson Corridor for the Sun Zia high power transmission lines.

   Reasons:

   a. The Tucson Corridor is already is use and further carrying capacity is in progress being paid for by TEP. SunZIA could join in and share expenses and profits in further developing already disturbed areas.

2. I urge your group to recommend protection of the Aravaipa Corridor from disturbance due to the construction of the Sun Zia high power transmission lines which will encourage roads and/or wildcat roads over State Trust and Federal National Forest lands.

   Reasons:

   a. I oppose a new corridor being opened that could cross:
   . heritage areas
   . wildlife corridors
   . our remaining designated or non-designated Wilderness areas in the Aravaipa riparian areas will be disturbed.
   . already threatened Arizona Prime Tourism areas. Phoenix has already seen a fifteen year decline in tourism revenues because Phoenix has lost the special draw of Arizona Uniqueness.

   The San Pedro/Aravaipa riparian areas and adjacent canyons are a unique Arizona magnet for Tourism. It has managed off-roading, fishing, hiking, mountain bicycling, river rafting, hunting due to high-impact scenery that monthly graces our publication, the Arizona Highways magazine.

   . threaten precious remaining prime riparian areas where: Central Arizona has very little pristine wildlife, ranching and watercourse areas left.

   These dwindling riparian areas form the backbone of of wildlife corridors. Preserving crucial wildlife is ensured by maintaining real corridors. Corridors must be in various levels of non-undisturbed states depending on the wildlife affected.

   Arizona is a preferred destination for tourists, eco-tourists, birders and hunters from all over the world.

   b. As a recently retired (November 2009) Pinal County IT employee, I was one of the recipients of the long worked Long-Range Land-Use plan.

   The SunZIA possible incursion to the Aravaipa Canyon in any shape or form is contrary to the Pinal County Land Use plan developed over many years.
   This plan's development included wide use of public comment/input.

To the stakeholders of the SunZIA project: 06/07/2010 Page 2

c. The proposed development of our wilderness Aravaipa Corridor is opposed by the WNRCD Winkleman Natural Resources Conservation District (composed primarily by ranchers). Many of the rancher members belong to families going back 5-6 generations. Cattle ranching is one of Arizona's protected industries.

I am worried that the environmental, hunting and industry litigation will end up costing taxpayers a lot of money, inflating the final cost estimates.

3. I strongly urge your group expand the Public Comment period and insure that all Stakeholders have buy-in.

Target Email address:
NMSunZiaProject@blm.gov

Thank you very much for requesting more comments:

John R. deCoville
P.O. Box 68906
Tucson, Arizona 85737

520-982-7505

From: DC Dedon
To: NMSunZiaProject@blm.gov
Subject: SunZia
Date: 06/09/2010 10:45 AM

I am deeply opposed to the use or destruction of public lands for private gain. Existing human corridors of I-10 and I-25 provide sufficient access for these power lines, which I personally find unnecessary. Los Angeles, Phoenix and Las Vegas need to learn to live within their resource means, just like the rest of us.

Deb Dedon

From: Aldeming@aol.com
To: NMSunZiaProject@blm.gov
Subject: Protect San Pedro
Date: 04/24/2010 09:19 AM

Please do not locate SunZia power lines in the San Pedro Valley, a place that is unique, beautiful, and profoundly environmentally significant as habitat and open space. A Tucson route is preferable.
Alison Deming

From: Sam Drake
To: NMSunZiaProject@blm.gov
Subject: SunZia AZ
Date: 06/06/2010 06:02 PM

Dear SunZia Folks,

Thank you for thanking me for my interest in this project. But one little thing is puzzling me about the Arizona portion of it. Let me see if I've got this right. Rather than route it through the existing utility corridor along I-10, you're still considering running it through a good part of the lower San Pedro Valley, one of the last, best places for wildlife and open space in the Southwest? Through endangered species habitat, across mitigation lands set aside for preservation to compensate for development having ruined other areas? Really? A 1000-foot wide, or possibly a mile-wide corridor, with a series of 16-story towers (!!), strung with wires emitting a constant, ungodly high-voltage hum? Gee, that does sound like a good idea. Let's go ahead and do that. That'll show those BP pikers a thing or two, eh? It was only by accident and negligence that they fouled a large swath of the U.S. environment. SunZia has the vision to come in and do it on purpose! Great.

~~~~~~~~~~~~~~~~~~~~~~~~~~
Sam Drake, Ph.D.
Assistant Research Scientist
Arizona Remote Sensing Center
Office of Arid Lands Studies
University of Arizona
1955 E. 6th Street
Tucson, AZ 85719
(520) 621-4501
(520) 621-3816 fax
sdrake@nexus.srnr.arizona.edu
~~~~~~~~~~~~~~~~~~~~~~~~~~

From: isabella
To: NMSunZiaProject@blm.gov
Subject: Transmission Project
Date: 06/04/2010 03:24 PM

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Thank you for your responsible response. Sincerely, Isabella Draper Taos, NM 87571

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12: 29
STATE OFFICE
SANTA FE, NEW MEXICO

June 6, 2010

Bureau of Land Management
P.O. Box 27115
Santa Fe, NM 87502-0115

Re: Power Transmission Corridor Across Rio Grande Valley in Vicinity of Bosque del Apache Wildlife Refuge

Last year I attended a meeting regarding this transmission line where we expressed our opinion on the above subject, which WAS and still IS NOT TO BUILD transmission lines across the path of the cranes, geese and other migratory birds that use the Rio Grande Corridor on a daily basis at certain times of the year. We are talking about thousands of birds. More suitable routes are East and South.

I visit the refuge every fall to view this spectacular sight, as do many people from the U.S. and foreign countries. We do NOT want to see all of the injured birds that will hit these lines when there are alternatives such as along the eastern boundary of White Sands and the river crossing must be underground across the entire floodplain.

Sincerely,

Geri Tillett

Mrs. Geri Tillett
2140 Gladys Dr.
Las Cruces, NM 88001-5808
rtillett@zianet.com

JUN 18 2010

To: **Bureau of Land Management**
June 4, 2010

Many from the Cascabel area have expressed their disbelief and outrage at the concept of the proposed SunZia transmission line through the San Pedro Valley. I understand that a route through Aravaipa is now even being considered.

I want to again add my name to the list of people who strenuously object to both those routes. Both would be environmental disasters. There are alternative routes that are already environmentally compromised. Why mess up someplace else on this earth? If anyone is reading this, imagine a 10 foot corridor through your backyard that has ugly poles and high voltage electric lines and is available for anyone to run their ATV's at any hour and use that corridor as egress to the rest of your backyard. A mile wide corridor through an area you have cared for like your backyard would be a threat to animals, birds, people, and some endangered fish. A swath through the valley would also disrupt plant continuity and viability.

Furthermore, I doubt that much is being done closer to or in the electricity market areas to conserve or to generate electricity locally or on their rooftops. When every rooftop between New Mexico and the Pacific Coast has solar collectors, then a massive water-guzzling solar array in New Mexico and its attendant invasive power lines could perhaps be considered.

But just not in the San Pedro River Valley or Aravaipa watersheds.

Aloha,

Linda McLean
5787 N. Cascabel Rd
Benson AZ 85602

lindammclean@yahoo.com

RECEIVED
B.L.M.-MAILROOM
2010 JUN -9 PM 12:29
STATE OFFICE
SANTA FE, NEW MEXICO
JUN 18 2010
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Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
Santa Fe, NM 87502-0115

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Sincerely,

Jose Anellanes

GPO
JUN 18 2010

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STATE OFFICE
SANTA FE, NEW MEXICO

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Sincerely,

Efren Diaz

epg
JUN 18 2010

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Sincerely,
Clint Leury Sultenein

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Sincerely,

Linda Lee Dultemeier

JUN 18 2010

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EPG
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Sincerely,

Justin Washburn

JUN 18 2010

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Dear Sir/Madam:

As a resident and land owner in Lincoln County, New Mexico, I am writing to express my support for the location of the proposed substation in our County, along with developed alternative routes that connect to this substation.

I am opposed to the expanded study area north of Socorro because this would unnecessarily increase the impact on the environment through additional miles of transmission lines.

BLM has done an excellent job in soliciting public opinions and identifying the potential environmental impacts for the SunZia project. The proposed alternatives that have been identified will have minimal impact on the following areas: visual impacts, recreation activities, biological and cultural resources, land use issues and water/noise/air quality impacts.

Sincerely,

Sharolyn A. Sandell

JUN 18 2010

Friends of Saguaro National Park

providing financial and volunteer support to Saguaro National Park

Received at BLM 6/4/2010 AAG

DATE RECEIVED 6/14/10

June 1, 2010

Adrian Garcia, Project Manager
SunZia Southwest Transmission Project
Bureau of Land Management
New Mexico State Office
P.O. Box 27115
Santa Fe, NM 87502-0115

Dear Mr. Garcia:

Attached please find a Resolution of the Board of Directors for Friends of Saguaro National Park, expressing their opposition to any proposed SunZia power corridor route through the Avra Valley, near Tucson, AZ.

While the Board certainly understands and appreciates the desirability of developing and transmitting renewable energy, they believe that any route through the Avra Valley would negatively impact the Tucson Mountain District of Saguaro National Park.

The Board concurs with the opinions expressed by Saguaro National Park Superintendent Darla Sidles in her letter to you dated April 16, 2010. Specifically, we would agree with her recommendation of either the No Action alternative, or location of the transmission lines well north of Tucson – bypassing the city altogether.

Sincerely,

Robert Newtson
Executive Director

2700 North Kinney Road • Tucson, Arizona 85743 • Phone (520) 733-8610
Email: fosnp@friendsofsaguaro.org • Web: www.friendsofsaguaro.org

Resolution

A resolution of the Board of Directors for *Friends of Saguaro National Park* in opposition to construction of a SunZia power corridor route through the Avra Valley.

WHEREAS, Saguaro National Park was established in 1933 to protect the giant saguaro cactus, and preserve superb examples of the Sonoran Desert ecosystem, while affording unique recreational opportunities for visitors . . . and today, Saguaro National Park is the number one tourist destination in Southern Arizona, providing an economic impact of approximately $75 million per year to the Tucson community; and

WHEREAS, the Bureau of Land Management is considering an application from SunZia Transmission LLC for locating two parallel 500-kilovolt high-capacity transmission lines, extending from south-central New Mexico to south-central Arizona . . . these lines delivering electricity generated from renewable sources; and

WHEREAS, one of the routes proposed for environmental assessment would go through the Avra Valley, west of the Tucson Mountains, and near the west district of Saguaro National Park; and

WHEREAS, this route would degrade the visitor experience at Saguaro National Park by destroying the scenic viewsheds and negatively impacting the Park's wilderness character; and

WHEREAS, this route would negatively impact thousands of acres of protected public lands, including Saguaro National Park, Ironwood Forest National Monument, Tucson Mountain Park, and the Central Arizona Project Canal mitigation corridor; and

WHEREAS, this route would cut through sensitive habitat recommended for protection by Pima County's landmark Sonoran Desert Conservation Plan; and

WHEREAS, this route would slice in half the Tucson Mitigation Corridor of the Bureau of Reclamation – nullifying the purpose for which it was preserved – and would be contrary to management guidelines that explicitly prohibit any development on these lands; and

WHEREAS, this route would be contrary to the purposes for which the Tucson Mountain District of Saguaro National Park was established in 1961 – to protect these lands unimpaired for future generations to enjoy;

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors for ***Friends of Saguaro National Park*** expresses its opposition to the proposed SunZia power corridor route through the Avra Valley – while acknowledging the desirability of developing and transmitting renewable energy – and calls upon SunZia Transmission LLC to select an alternative route with fewer environmental impacts.

From: Barbara DuBois
Reply To: Barbara DuBois
To: NMSunZiaProject@blm.gov
Subject: birds
Date: 06/09/2010 01:36 PM

Please don't interfere with our migratory birds!

Barbara DuBois, Friends of the Bosque Del Apache Member
Luis Lopez
Socorro NM 87801

From: Emily Duwel
To: NMSunZiaProject@blm.gov
Cc: Hartman, John (IHS/PHX); Deana Reed
Subject: SunZia Transmission Lines...
Date: 06/10/2010 08:03 AM

Dear Mr. Garcia,

I am a member of the Board of Directors of Apaches of Aravaipa Canyon, Inc., a 501 (c) (3) dedicated to conserving and interpreting the natural and historic site of what has been called the Camp Grant Massacre.

This site, which occupies some 200 acres in the Aravaipa wilderness, once served as the home base of the Aravaipa Apache, whose name in Apache is in fact is taken from the Canyon's black rocks. As you can imagine, the Aravaipa wilderness is very sacred to the Apache people.

As the site too of a terrible massacre carried out against Apache women, children and elders, it also has an important historic dimension for the Apache people -- and for the people of the United States as a whole, as the event was to have a profound impact on our relations with Native peoples and shape who we later become as a nation.

Having giant transmission lines run near the Canyon would irreparably harm the pristine nature of the site and in so doing destroy its historic character and beyond that degrade the sacred burial site, where the bodies of the 200 Apache civilians slain during the massacre still lie.

The fact that Aravaipa remains a "wilderness" is something of a rarity and worthy of special consideration. In preserving its natural beauty, we preserve its sacred cultural and historic character as well.

Beyond that, as a former director of the Oracle Historical Society, I can assure you that there are also many in the community of southern Pinal County who feel a special connection to Aravaipa and the San Pedro River Valley landscape as a whole and deeply value its unspoiled nature, including descendants of the Canyon's early homesteaders.

As an individual, I very much support the growth of the solar industry. However, I would strongly encourage SunZia to consider using existing industrial corridors rather than marring a landscape of such tremendous sacred, historic and natural significance.

Thank you for your consideration.

Sincerely,
Emily Düwel
--
Museum Interpretation Consultant
THINKsense studios
T: 520-896-2969
E: eduwel@gmail.com
W: www.thinksense.org

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

DATE RECEIVED 6/18/10

SunZia Southwest Transmission Project
Environmental Impact Statement

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☒ Yes ☐ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

I live on SKYLINE INTERCHANGE / I-10. We already have the DOE power line going through our property. I DO NOT WANT a 500 KVA line going anywhere near our community. It would depress land/real estate values. There is also a question about health effects of such a high electromagnetic field near dwellings.

Further, it would seem that if wind and solar energy sources are placed near or at the point of use, these large transmission systems would not be needed or could be built off a

over

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

reduced capacity.

Using I-10 as a corridor should not be considered – because communities have been built along this interstate! Vail, Benson, I-6 Mescal, Skyline community all have experienced significant growth and therefore argue against an I-10 corridor route.

Please don't ruin our view-shed throughout Cochise County.

FOLD HERE

First Class Postage Required

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 North 32nd Street, Suite 102
Phoenix, AZ 85018

SHAWN & ANA CAIN
HC 75 Box 88
Mountainair, NM 87036
505-847-0112

DATE RECEIVED 6/18/10

June 3, 2010

Bureau of Land Management
New Mexico State Office
SunZia Southwest
Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Received at BLM on 6/7/2010 AAG

Dear Sirs:

We have looked at the "proposed" map of where this transmission line is supposed to go. If it indeed follows the El Paso or Transwestern pipelines, you are crossing approximately 11 miles of our property. El Paso pipeline is approximately one-quarter mile from our house. Transwestern pipeline is one-half a mile from our house and the house up the road is directly between them. Our property lies in the southwest corner of Torrance County.

We understand that these transmission lines are huge and will transmit tons of power to Arizona, but we are extremely concerned about the projects potential effects on our lively hood. We raise cattle and horses. These animals forage on the property you are talking about installing these lines on.

Have there been any studies on the effects this will have on cattle or horses? We understand that pregnant women have aborted their fetus, by just being in close proximity to these power lines. Our cattle are pregnant 9 months out of the year, how will this affect them, and in turn, our calf production? What about the horses?

We know for a fact that we are still finding out the effects the atomic bomb had on different ages of children at the time it went off. The individuals that were going through puberty at the time (men and women) couldn't ever have children. Almost everyone that was even in the vicinity has/ had some form of cancer. What will these lines do to our kids? Or to us? Is there any radiation involved with this high powered electricity load?

We also understand that these lines are so powerful that low flying aircraft will lose instrument power if they fly to close, and we've heard that if someone holds a light bulb underneath the tower, the bulb will light. If these towers are so powerful, what's to say they won't ignite those gas lines? These lines are a quarter mile apart and run parallel to each other the length of our property. They are a continuous worry without the threat of electricity being involved. These gas lines are 30 inches in diameter, so there is a tremendous amount of pressure running through them at any given time. Transwestern has only one pipeline, but El Paso has two 30 inch pipelines approximately 10 feet apart.

What affect would the power lines have on the people that have to come out and occasional repair those lines? When they have worked on them before, they have torches, grinders, welders etc. Basically lots of fire igniters. Couldn't the static electricity, or the electricity from the towers itself (around these gas lines) potentially cause fires?

There are several archeological sites in the vicinity. Will a cultural clearance be done to make sure none of these sites are disturbed? Our property lies between Gran Quivera and Abo National Monuments. Native American's roamed around hunting trading etc, there are artifacts essentially everywhere.

What are the affects that these lines will have on our household appliances? For whatever reason where we live, Lightening is a huge problem. Every time there is a Lightening storm, the transformer directly behind our house is blown. Will it affect these power lines in any way?

How far away from these towers do you have to be in order not to have any harmful effects from the electricity?

We currently have Elk, deer, antelope and other wildlife on our property that NM Game and Fish gives us hunting permits to sell. This is part of our annual income that we count on. What will these towers do to the game?

We are on the boundary of the Northern Extension Area of the White Sands Missile Range. We get paid annually for the "fly space" above our land. We have been told that if these towers go up, the aircraft will not be able to fly over anymore so that part of our income will also be stopped also.

The way we see it is, if these towers go up: We won't get any overhead flight money, we will lose all of our hunting licenses, and our cattle won't have calves. How are we supposed to survive?

Besides all of that, we think those towers will take away from the beauty of our Natural Landscape. This property has been in our family for three generations now (our children being the fourth generation), and we enjoy living out there just for the beauty of the land itself. Besides the dangerous and financial aspect, these towers would just be a permanent scar on our property and we don't want them. When was anyone going to call the landowners and let us know they were going through the property that we own? Does private deeded land ownership not mean anything anymore?

Please keep up abreast of this project.

Sincerely,

Shawn P Cain

Ana M Cain

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

DATE RECEIVED 6/18/10

SunZia Southwest Transmission Project
Environmental Impact Statement

Mary McCool
J-6/Mescal Community Organization
NAME

3111 Clark Road
ADDRESS

Benson AZ 85602
CITY STATE ZIP

J-6/Mescal CDO
Organization (if applicable)

Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

See attached typed page.

Mary McCool, Chair
J-6/Mescal CDO

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

U.S. Dept. of the Interior, BLM, New Mexico State Office
Comment Form SunZia Southwest Transmission Project.

The J-6 Mescal Community Development Organization appreciated the opportunity to review large wall maps which we shared with our neighborhoods located along the I-10 corridor between and within the Buffalo Soldiers Electronic Testing Range and Pima County Conservation lands.

Residents within our area mostly live in clustered population centers that cannot avoid impacts from the proposed powerline routes due to the narrow nature of the valley between the Whetstone Mountains and the Catalina Mountains. Rural qualities are highly valued in our tri-community area of J-6, Mescal, and Skyline as we serve as the western gateway to the San Pedro Valley and to Cochise County that markets its scenic vistas, remote recreational opportunities, western-movie production, and legendary history. Having parallel lines of 130' to 160' imposing towers is not conducive to the passive setting, experiences being marketed. Due to the topography of the valley, the powerline would be a visual scar that is seen and felt for miles.

The two preferred routes will not only impact our commercially designated areas, but also lands zoned as neighborhood - residential. Due to the number of small acreage lots near the proposed routes, many residential property owners view the lines as a health hazard and a variable that will devalue their property or make it undesirable to prospective buyers.

Furthermore, our rural area has been very pro-active promoting use of renewable energy, water harvesting -- practicing pro-active resource management and conservation. We are in an area where individuals have installed both wind generators and photovoltaic solar systems. There is a collective opinion that monies to promote use of renewable energy should not be spent moving energy from erratic sources hundreds of miles through massive transmission lines but should be spent promoting point-of-use generation and developing programs such has been recently introduced into the Senate - 10 Million Solar Roofs and 10 Million Gallons of Solar Water Heating Act of 2010 - a program to provide rebates for the purchase and installation of solar photovoltaic systems and solar water heating systems for residential and commercial properties!

The knowledge and experience of individuals within our community readily recognize massive public cost would be needed to transform our power grid to accommodate variable energy resources. The unpredictability of variable energy resources is problematic. When a wind farm is built, some other power source of the same size must be built to provide power during calm hours. "Wind and solar can lower the amount of fossil fuels used for generation, but they don't lessen the need for spending money on always-available generation capacity, nor is there evidence that the public gets all the air emissions benefits that are expected. For new generators, savings based on having free fuel from the wind or sun are small."

In conclusion, a wider, regional view of transmission planning and collaborative process needs to occur - identification of additional study areas, including northern Arizona, needs to happen.

Sincerely,
Mary McCool, Chair
J-6/Mescal Community Development Organization

From: noko_marie04
To: NMSunZiaProject@blm.gov
Subject: proposed power lines over the Bosque
Date: 06/04/2010 02:20 PM

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Sincerely,

Maryjane Ellison

From: Peter Else
To: NMSunZiaProject@blm.gov
Subject: Comments on the Tucson routes
Date: 06/10/2010 10:41 PM

June 7, 2010

Adrian Garcia, Project Manager for the SunZia Southwest Transmission Project
BLM New Mexico State Office
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

Dear Mr. Garcia,

These comments are submitted in response to the addition of alternative routes for the SunZia Transmission Project in the Tucson area. As you know, there was much public pressure during the initial comment periods to seek a route that minimized impact to the ecological and wilderness values of southern Arizona by following the development path already established along Arizona's so-called Sun Corridor. Since attending the scoping meeting a month ago in Tucson, I have been considering the Tucson area route alternatives, and I have come to the conclusion that the SunZia project did not make a good faith effort to research, collaborate with stakeholders, and propose viable options for routes in this region.

First, it is apparent that SunZia did not collaborate effectively with southern Arizona's major electric utility, Tucson Electric Power Company (TEP). There are significant opportunities for coordination between SunZia and TEP that would achieve major goals for both organizations, such as specific TEP infrastructure improvement projects in Tucson and SunZia's stated goal to minimize ecological damage along their path from energy source to destination. Missing these opportunies will constitute negligence of our region's needs. By co-locating lines desired by both organizations and by following a route that minimizes impacts in the city, there are possible routes that were not even proposed by SunZia. One such route has been proposed by the Cascabel Working Group.

Second, several of the Tucson area routes proposed by SunZia contained obvious fatal flaws, such as running lines over a historic neighborhood or adjacent to a National Park. These flaws, coupled with negative statement made about these routes by SunZia reps during the very meeting that introduced these routes to the public, indicates to me that this was a rushed and disingenuous process.

And finally, on the topic of process, I urge BLM to take a much more proactive role in requiring the project proponents to collaborate effectively with the public. This is especially important in a process like this one, where the proponents are mainly representing the financial interests of out-of-state entities. So far, this process has been a consistent trend of unilaterally announcing possible routes through our region, some that would have enormous implications to ecosystems that have been in existence for thousands of years, and then setting comment deadlines that are measured in weeks. This process is shaping up to be much more favorable to a private corporation's desire for exclusive transmission rights than it is to the interests of a region that just happens to be on their transmission route.

The main beneficiaries of power from this project would be the urban growth centers of the Southwest, such as Los Angeles, Las Vegas, and Phoenix. These centers must ultimately bear the true cost of developing this infrastructure, and if unable to do so, must limit their growth and/or consumption of energy. I am still researching the SunZia proposal, and I have not yet come to a conclusion about how much of their power will actually come from renewable sources. In any case, a route for a project that mainly benefits urban growth centers must follow established corridors that connect these centers. It is not appropriate to bisect the cluster of Wilderness Areas in the Galiuro Mountain region or damage the massive conservations efforts in the San Pedro riparian zone for the sake of corporate or mega-metropolitan interests.

If SunZia wishes to pass through southern Arizona, they need to effectively collaborate with the urban center in our region. If they cannot find a route that does not fragment and significantly damage the dwindling ecological reserves of our region, then they need to look toward another development corridor for their project. Thus, SunZia needs to go back to the drawing board in Tucson, and this time, collaborate effectively with the stakeholders in the process of developing possible routes.

Thank you for considering my comments. I intend to stay involved in this process.

Sincerely,

Peter Else
P.O. Box 576
Mammoth, Arizona 85618

SUBMITTED BY US MAIL ON JUNE 8, 2010, AND BY EMAIL ON JUNE 10, 2010

From: Brad Emerson
To: NMSunZiaProject@blm.gov
Subject: power lines and Bosque del Apache
Date: 06/06/2010 07:58 AM

I would like to convey my opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community.

Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of “M” Mountain, and the cottonwood gallery along the Rio Grande. An eastern route, preferably along the eastern boundary of White Sands, would be a much better option. Additionally, any proposed river crossing should be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although “green” power is a concept that I support, the SunZia Southwest Transmission Project has not properly addressed the ecological and economic impacts that this project will have on our region.

Please consider these points and do not harm the wildlife in this area with this project.

Thank you.

Brad Emerson

From: WILLIAM ENDRUWEIT
To: NMSunZiaProject@blm.gov
Subject: Power lines near Bosque del Apache
Date: 06/07/2010 05:04 PM

Ladies and Gentlemen

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge we would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Most sincerely,

William and Valerie Endruweit

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

DATE RECEIVED 6/18/10

SunZia Southwest Transmission Project Environmental Impact Statement

NAME: Keith and Sue Waid
ADDRESS: HC 66 Box 608
CITY: Mountainair, STATE: NM ZIP: 87036

Organization (if applicable)
Add to mailing list ☒ Yes ☐ No
Withhold personal information* ☐ Yes ☒ No
Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:
See attached letter dated June 7, 2010

RECEIVED
B.L.M. - MAILROOM
2010 JUN 11 PM 1:36
STATE OFFICE
SANTA FE, NEW MEXICO

SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:36
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

June 7, 2010

Keith & Sue Waid
HC 66 Box 608
Mountainair, NM 87036

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

To Whom It May Concern:

With deep concern we are responding to the "Notice of Intent to Prepare an Environmental Impact Statement and Resource Management Plan Amendments for the SunZia Southwest Transmission Project In Arizona and New Mexico" updated April 2010. As permanent residents and ranchers of New Mexico in the Scholle and Chupadera areas (approximately 5-25 miles south of Rt. 60 and 10-25 miles west of Mountainair) we are absolutely opposed to the "Study Area Expansion April 2010". Referencing your maps dated April 23,2010, from the proposed SunZia-East Substation to the San Antonio area turning-point-south, we request that both northerly proposed routes known as "E10" and "E80" (in the expansion study) and route "A50-60-90" (in the original study) be removed from further consideration.

While we believe the best pathway for this entire 460 miles of 500kv transmission line, fair and suitable to the people and wildlife of New Mexico, is simply underground, we do recognize this as cost prohibitive. However, portions of this transmission line must go underground: especially all or portions of the originally proposed "A30-40-80" lines from SunZia-East Substation continuing west to San Antonio along Route 380. The following resources serve as a list of impacts and reasons for the removal of the "E" lines from further consideration as well as for the proposed "A 30-40-80" lines being installed underground:

<u>Natural Environment</u>
Wildlife
- Migratory birds (Bosque Del Apache Refuge)
- Endangered and threatened wildlife (Sevilleta Refuge)

Ranchland/grazing land
- Cattle, horses, wild horses, antelope, birds of prey, small mammals and reptiles

<u>Human Environment</u>
Land Use
- Ranching
- Water/wells (for existing human and animal consumption)
- Wilderness areas
- National Monuments and parks-recreation

Military Lands (White Sands Missile Area)
Military Air Space (Holloman and Kirtland AFB training flight zones)
Visual degradation
Electric magnetic field
Noise pollution
Environmental Justice

Cultural Environment
Archaeology
Prehistoric sites and petro glyphs
Historic Resources (Gran Quivera and Abo Ruins)
Native American Sites
Historic Trails

After some research, we are fully aware of the financial commitment to an underground system. However, in urban and more congested environments as well as in national parks, underground transmission systems are well at work. Since the year 2000, in places such as Massachusetts, New York, California, and Puerto Rico, Burns and McDonnell, a prominent U.S. based electrical engineering consultant and construction firm, has successfully finished miles and miles of underground transmission lines to improve the lives of the respective area residents and lessen the impact on local environments. If 25 miles of transmission line can be buried in San Juan, Puerto Rico, then 50 miles across the northern borders of White Sands Missile Range and Bosque Del Apache is also very possible.

Finally, since the people of New Mexico are not the beneficiaries of this transmission line is it even conceivable that we should bear the sight of it? While a few of our people may benefit from jobs as a result of solar and wind farms, most of our people do not benefit at all—not even from the right and availability to purchase the end product. To ruin our environment with transmission lines (with many more to come in the future) seems a true injustice to our people, wildlife, and especially our children. To go to the "green" extent to save our environment by installing renewable energy farms is extraordinary. But to destroy so much of our New Mexico land for transmission lines is environmentally irresponsible and negligent. Let us do it right the first time. Minimize the impact on our lands permanently. Go underground more often than not.

Respectfully Yours,

Keith & Sue Waid

Cc:
Mr. Adrian Garcia
BLM New Mexico State Office
SunZia SW Transmission Project
P.O. Box 27115 (87502)/301 Dinosaur Trail (87508)
Santa Fe, NM 87502

From: Armijo, Dan
To: NMSunZiaProject@blm.gov
Subject:
Date: 06/02/2010 02:12 PM

Mr. Garcia,
The office of Congressman Teague has received calls from ranchers located in the northeastern part of Socorro County requesting an extension of the June 10th cut off for comments.
Please let me know if this request is possible. Thank you.

Don't miss out - Sign Up for the Harry Hotline E-Newsletter today!

Dan Armijo
Field Representative
Congressman Harry Teague
111 School of Mines
Socorro, NM 87801
575 835-8919
dan.armijo@mail.house.gov

From: aexterkamp@yahoo.com
To: NMSunZiaProject@blm.gov
Subject: SunZia comment
Date: 06/07/2010 03:32 PM

SunZia Transmission Line Project in New Mexico

We attended the April 27, 2010 scoping meeting in Socorro, NM. Excellent information and your staff members were knowledgable and eager to answer any of our questions.

My husband and I purchased our 40 acres 10+ years ago to build our retirement home. We moved from Florida to our dream land in September 2008. *How gorgeous.* We enjoy so many aspects of the Windmill Ranches area -- the many animals such as antelope and deer, the terrain and the views.

We request that you consider the northern routes **E10 and E80**. These are the most favorable.

John and Anne Exterkamp

296 Ranch House Road

Ancho, NM 88301
cell 305-323-0366
aexterkamp@yahoo.com
Windmill Ranches Home Owners Association

From: Karen Fasimpaur
To: NMSunZiaProject@blm.gov
Subject: power lines near Bosque del Apache
Date: 06/05/2010 10:33 AM

I would like to convey my opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community.

Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of “M” Mountain, and the cottonwood gallery along the Rio Grande. An eastern route, preferably along the eastern boundary of White Sands, would be a much better option. Additionally, any proposed river crossing should be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although “green” power is a concept that I support, the SunZia Southwest Transmission Project has not properly addressed the ecological and economic impacts that this project will have on our region.

Please consider these points and do not harm the wildlife in this area with this project.

Thank you.

Sincerely,

Karen Fasimpaur

From:	Roger Faulkner
Reply To:	Roger Faulkner
To:	Adrian Garcia
Cc:	Ron Todd
Subject:	SunZia Underground Option
Date:	05/07/2010 06:20 AM
Attachments:	Elpipes_Electricity Today_005.pdf

Adrian:
Good luck dealing with this hornet's nest!

We have been developing a long distance underground transmission option; see the attached article from *Electricity Today*. I do not claim that the SunZia project is an ideal "starter" project for our elpipe technology, but you should at least be aware of it. The SunZia project is envisioned as an AC transmission line, though arguably it makes sense as a DC project. It can only be sited underground if it is DC, though short segments through regions of scenic beauty/intense opposition can be undergrounded for an AC line. I'm open to discussing the undergrounding options.

>Contact Adrian Garcia, BLM Project Manager, NMSunZiaProject@blm.gov, 505.954.2199

Roger Faulkner, President
Electric Pipeline Corporation
(a spin-out of Rethink Technologies, Inc.)
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ELECTRICITY TODAY
Transmission & Distribution Magazine

Using Conventional Elpipes For Long Distance Transmission

By Roger Faulkner, President; and Ron Todd, CTO; Electric Pipeline Corporation

Overhead transmission lines grow more controversial each year, while at the same time, the economic need to transport bulk power grows, fueled in part by the rapid development of utility-scale wind farms remote from population centers. It is difficult to site new overhead power lines of any capacity, and it is particularly difficult to site new high voltage overhead lines, which are aesthetically overpowering (Figure 1).

Figure 1: Relative Scale of 745kV AC Line to buildings

Most of these objections can be overcome by placing long-haul (100 km and over) transmission lines underground. These are the options for achieving this:

- Conventional cables (maximum 500kV at present)
- Superconducting cables (maximum 200kV at present)
- Gas Insulated Lines (GIL) (maximum 800kV)
- Solid-insulated electric pipelines based on metallic conductors, “elpipes;” (max voltage 800kV)

Of these options, underground cables have a significantly lower power transfer capacity, and cost many times more than overhead power lines, so they are rarely used except in and around cities. Cables can be used to deliver AC or DC power, but AC runs are limited to 50 km or so (which is short in this context) before capacitive charging currents rise to the point that the cable requires expensive reactive compensators to deliver useful power.

Cables can currently transmit DC power hundreds of kilometers, limited mainly by economics and the need to maintain acceptable I^2R losses. Cables need to be wrapped on a drum for delivery from the factory to the installation site. The required bending radius limits the cable diameter, and thus the conductor size and insulator thickness, and therefore also the capacity. Waste heat removal is a problem for high power cables. All the available flexible electrical insulation materials are also good thermal insulators, so as the voltage goes up, the thicker insulation required to withstand the voltage reduces the thermal dissipation capacity of the line per meter. Thus, increasing the voltage of a thermally-limited buried cable does not increase the power capacity proportionately to the voltage increase.

Typically an overhead power line can carry four times as much power for each doubling of its voltage (at constant transmission efficiency). For passively cooled cables, doubling voltage less than doubles capacity (because the reduced thermal dissipation capacity means the current must be reduced at higher voltage). About 1.1 GW per cable pair is the limit at present; and such cables must be buried shallowly (<30 cm), or in special thermally conductive sand to achieve these power levels. If the cables are actively cooled by a circulating coolant fluid, transfer

capacity can be increased to about 1.5 GW/cable pair. At present, the maximum rated voltage for cables is 500kV, though breakthroughs in nanocomposite insulation technology (see US patent 7,579,397, now licensed to Dow by EPRI) promise to allow for thinner insulation layers (capable of 20kV/mm as opposed to the present 10-12kV/mm design voltage gradient) which will in the future enable an 800kV polymer-insulated HVDC cable.

Superconducting power cables, which were described by Jack McCall of American Superconductor in the November/December issue of Electricity Today, have been getting a lot of attention and R&D funding. High power superconducting DC cables have yet to be deployed, though relatively high power (~0.6 GW), high voltage AC superconductor cables have been in operation for a number of years. The cryocooling systems, though complex, are included in the cost of superconductor electricity pipelines as quadruple redundant systems with a variety of backup and service features. Though such extensive cryocooling has never been deployed, the engineering is sound and all of the core components have either been fully simulated or demonstrated. Nonetheless, the complexity per se of superconducting DC transmission makes proving reliability a difficult process that must occur in stages over decades. Still, the unique property of zero electrical resistance means that superconducting cables will eventually be important for long distance applications.

Gas Insulated Lines (GIL) are a proven alternative for high capacity underground power lines, but though they have been available for 35 years, there has so far been no installation longer than 3.25 kilometers, due to the high cost per km. These designs rely on sulfur hexafluoride (SF_6) gas, which is a potent greenhouse gas, for insulation. GIL lines are the only underground option that is feasible for long distance AC power transmission. This is because of their low capacitance per km; though not quite as low as an overhead line, it is low enough that more than a hundred kilometers of GIL could be used for AC transmission before capacitive charging currents become an issue. In fact, though GIL can theoretically be used for either AC or DC transmission, all the commercial installations worldwide are for AC at present. Many vendors offer GIL products, but Siemens is the current technology leader.

The first three options discussed above (cables, superconductor, and GIL) are significantly more expensive than overhead lines in terms of dollars/(GW-km). There is a fourth alternative for underground bulk power transmission that deserves to be part of the discussion: electric pipelines based on conventional conductors, “elpipes” for short. Figures 2a and 2b show two different concepts for HVDC elpipes. Practical elpipe designs for long distance transmission must be DC and share these features:

- Significantly more conductor is used per km than is feasible for an overhead line or a cable;
- Resistance (ohms/km) & losses (watts per meter) are much less than an overhead line or a cable;
- Waste heat removal limits capacity except for actively cooled (from the inside) designs;
- Elpipes consist of shorter pieces than cables, which must be transported and spliced;
- Since a large number of splices are required, they must be simple, very reliable, and cheap.

Figure 2a: Directly Buried HVDC Elpipe

This elpipe has 50 cubic meters of aluminum per km; a transmission line is comprised of two such elpipes running at +800kV and -800kV, and has 1.4 ohms/1000 km (both ways). The transfer capacity for a pair of these elpipes, based on 0.8% loss/1000 km, is 15 GW; at full capacity, 123 watts per meter (for the pair) are produced from I^2R losses.

Elpipes represent a paradigm shift for long distance transmission in several ways. Because they are not wrapped on a reel for transport, elpipes can use far more conductor than cables or overhead power lines. Although the words “electric pipeline” have been used to describe many different versions of high capacity power lines (even including overhead lines), elpipes in their simplest embodiment (Figure 2a) really do resemble a gas or oil pipeline. The key issues to resolve to make this approach practical are low cost

and reliable splices, efficient removal of waste heat produced from resistive losses, and handling thermal expansion.

Electric Pipeline Corporation, the startup company formed by the authors of this paper to commercialize this approach, has developed proprietary methods to accomplish low cost splices at high voltage levels, and enhanced insulations that facilitate efficient heat removal. Although waste heat removal limits underground cables to a maximum transfer capacity of about 1.1 GW, directly buried elpipes as per Figure 2a can be designed to transmit up to 15 GW and still be passively cooled underground. Simple strategies such as backfilling with conductive sand can boost the capacity of directly buried elpipes significantly, as can simply using more conductor (additional metal can be inexpensively added to the inside of the elpipe conductors). Part of the advantage that elpipes have over cables is that the hollow pipe shape of the conductor gives more surface area through which to dissipate the waste heat; however the bigger factor is simply that the design enables the use of a lot more conductor than is even feasible for a cable, typically 10-50 times as much. The particular design shown in Figure 2a has a 15 GW transfer capacity at 0.8% transmission loss/1000 km. (This is about one sixth the transmission loss per km of the best overhead transmission lines of today, and is comparable to the efficiency of superconducting lines, after accounting for the energy cost of cryocooling.) Waste heat due to I^2R loss at the design power level (15 GW) is only 123 watts/meter (for the pair of elpipes required to transmit power), well within the ability to dissipate passively through most soils. (Control of waste heat is the main reason for the high efficiency of the line: it is more cost effective to prevent the production of waste heat by using more conductor than to implement the special design features needed to remove a larger amount of waste heat.) Raw materials cost per km for this elpipe (including both directions) are:

Conductor (100 cubic meters/km aluminum AA8030 alloy, extruded)	$ 890,000
Insulator (crosslinked polyethylene)	$ 460,000
Steel Pipeline Shell (24” pipe, ½” wall)	$ 340,000
Total Raw Material Cost per km (excluding joints)	$1,690,000 (US dollars)

The full price of completed projects (excluding only the AC/DC/AC converter stations) will depend on a number of factors, but would average 3 times the material costs if present market prices prevailed. Though this is a large number ($5 million/km), it is a bargain compared to cost projections for underground superconducting lines, or gas-insulated lines with equivalent capacity. It is also likely that if there was a commitment to build out an HVDC supergrid, competitive pressures would greatly reduce the cost of the converter stations (these costs are nearly equivalent for any HVDC line, and at prevailing rates can constitute 50% or more of the cost of an HVDC link).

An interesting comparison between an elpipe versus an overhead line or a buried cable conductor is to look at what fraction of the cost of the transmission line is for the conductor per se; in an overhead transmission project the fraction of the money spent on the conductor per se (aluminum purchased by the wire manufacturer) is typically around 2% of the project cost; for a cable system, conductor purchase price would proportionately be even less if cables were made from aluminum (but generally copper is used instead). In contrast, for an elpipe, 20-25% of the cost of the line goes to purchase conductor, which is economically more efficient because only the conductor actually carries current.

To implement elpipe designs with higher passive heat dissipation (above 200 watts/meter of elpipe), one has to ensure efficient heat removal; Figure 2b shows a design for a pair of electric pipelines that are integrated into a module which includes an upper road surface for reliable heat dissipation. (The road must be a thermally conductive material that preferably reflects most of the incident solar radiation while also being a good emitter of thermal infrared.) This upper surface could be used as a bike path, or a maintenance road.

The particular dimensions of Figure 2b correspond to a transfer capacity of 10 GW at 1.2% I^2R loss/1000 km; this goes up to 12.8 GW at 1.6% loss/1000 km (approximately the thermal limit for transmission for this specific design). This is a significantly lower range of losses per km than for an 800kV DC overhead transmission line, with about twice the capacity.

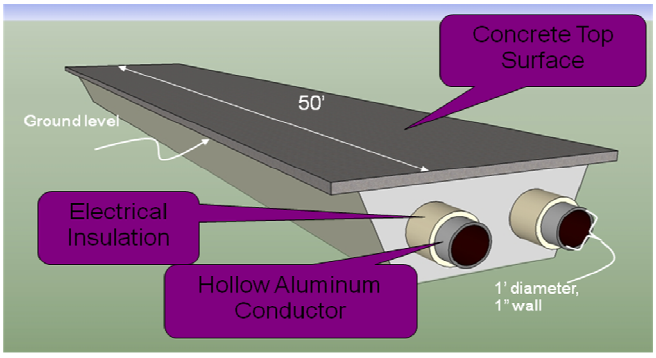

Figure 2b: Elpipe Pair Integrated into Road/Heat Dissipation Module

This electric pipeline has 45 cubic meters of aluminum/km (including both conductors), and has 3.15 ohms/1000 km (considering both directions of the flow of current); energy transfer capacity at 1.2% I^2R loss/1000 km is 10 GW; this goes up to 12.8 GW at 1.6% loss/1000 km.

Passively cooled elpipe designs like that of Figure 2b can work up to about 40 GW of capacity, by using more conductor than the design of Figure 2b. Internally-cooled elpipes can go to even higher capacities, limited only by the cost of conductor; 200 GW connections are economically feasible for internally cooled aluminum conductor elpipes; if sodium (the most cost effective conductor) were used, elpipes up to 1000 GW (one terawatt) are feasible to transmit power coast-to-coast economically. Because of reliability concerns, it is unlikely that power lines designed for more than 20 GW will be deployed in the near future. Eventually though, when circuit breakers capable of handling 200 GW are developed, deployment of 200 GW coast-to-coast circuits (as in Figure 3) may prove to be the least expensive way to implement a continental grid. In the case of elpipes or any other transmission line based on metallic conductors which are limited by heat dissipation, adding twice as much metal increases transmission capacity only by a factor of the square root of two. (This is because heat dissipation scales with I^2R, while power transmitted scales with VI.) Therefore at sufficiently high capacity, internal cooling of elpipes is required for optimum utilization of the conductor and optimal economic efficiency.

It is highly desirable for a power line to have the ability to be overloaded for a short time, for example during an outage of another line, or during the peak load time of day and/or day of the year. In general, this is a favorable property of overhead lines, which can be overloaded by high margins during upset or abnormal conditions (several times the normal load can be carried for long periods of time with no damage, if line sag and annealing are not issues), though with lower delivery efficiency. By contrast, underground cables in general have low overload capacity, since they are normally constrained by heat dissipation; basically, their overload capacity is determined by how long it takes for adiabatic heating of the cable from normal operating temperature to the maximum safe operating temperature, usually less than 10 minutes at double the rated energy flow. Elpipes are an interesting in-between case, because though they are also constrained by heat dissipation, the heat capacity of the line is substantially higher than for a cable (simply because they use several times more conductor mass per amp carried); for a typical elpipe operating at a transmission loss level of 1.2% I^2R loss per 1000 km on a hot day, it is possible to carry twice the normal amount of power for 1 hour without incurring any permanent damage.

The practical limit for conventional, overhead transmission has nearly been reached (new 800kV DC lines in China will transmit up to 6.4 GW per line, around 2000 kilometers), yet there exists the need for even more transfer capacity. The idea of a conventional conductor based "electric pipeline" was proposed by Roger Faulkner in 1991 testimony to the Wisconsin Public Service Commission's Advance Plan 6 hearings; it was a back-burner project until recent advances made it seem more feasible.

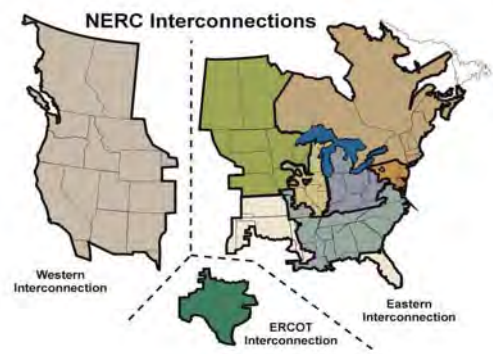

Figure 3: NERC Map Showing Synchronous Regions

It is important that an HVDC grid operate at a single voltage because (unlike AC) there is no economical DC/DC transformer. Such a grid cannot be AC, because North America is too large an area to form a single stable synchronous grid. At present there are three synchronous areas in North America.

Figure 4 shows a long-term vision of a supergrid for North America (only the largest lines are shown). Such a grid cannot be AC, because North America is too large an area to form a single stable synchronous grid. It is important that an HVDC grid operate at a single voltage because (unlike AC) there is no economical DC/DC transformer. We envision a future HVDC supergrid containing both superconducting links and elpipes. Figure 4 shows two crossing (but not necessarily electrically connected) superconducting lines that together connect to only four points on an elpipe grid. These links would carry most of the coast-to-coast electricity under normal conditions, yet the grid can withstand the loss of either or both of the superconducting links, due to the redundant elpipe links. Deploying two independent superconducting links would be advantageous from a system stability point of view, whereas connecting the two superconducting circuits where they cross is better from an energy conservation point of view. In fact, if the two superconducting links are not cross-bonded, there would be four redundant coast-to-coast links in just the major power lines of Figure 3, and smaller connecting lines (not shown) would provide a mesh to give even another level of redundancy for the coast-to-coast connection. A key to this proposal of a hybrid grid would be to boost the maximum voltage withstand of cryogenic HTS cables to 800kV.

Figure 4: Hybrid North American HVDC Supergrid

These are major 200 GW lines: the blue lines are superconducting links (5400 km total), and the red lines are elpipes that form a loop around North America (about twice the total length of the superconducting lines). This would clearly require international cooperation.

Such a grid (with or without the superconducting lines) would make it possible to share wind-generated electricity over the entire North American continental area, which allows geographically dispersed wind sites (Great Plains, the coasts, Great Lakes, Hudson's Bay for instance) to be aggregated together to smooth out regional fluctuations. Additional resource smoothing would occur since such a supergrid would also interconnect North American pumped storage assets. Wind, solar, and other intermittent renewables would become firm, baseline generation resources. New renewable generation and storage sites could be located where physical resources dictate. Such a grid enables market access for remote tidal energy in Hudson's Bay as well as for Arizona solar power. (There is a reliability advantage in pulling together multiple renewable energy sources.) Such a supergrid would also allow nuclear power to be sited away from population centers, in locations where waste heat will cause minimal environmental disruption or perhaps positive benefits, in places where competition for water resources for cooling are minimal (Hudson's Bay, for example), and/or where there is little opposition from local residents.

Unlike a purely superconductor-based coast-to-coast supergrid, though, if either or both of the superconducting links is lost in the proposed hybrid grid, there is enough capacity in the elpipe portion of the grid of Figure 4 to "take up the slack" without a system crash. In this scenario, loss of a superconducting line would cause a sudden reduction of efficiency of coast-to-coast transmission that would look to the system like a major generation asset suddenly dropping out; this would be far more easily accommodated by the hybrid grid of Figure 3 compared to the scenario where the coast-to-coast link is simply broken. As long as the abrupt change in delivered power remains within safe limits, loss of either or both of the superconducting lines need not cause a widespread outage, even in the scenario that under normal conditions, the superconducting line may be carrying hundreds of GW. The superconducting lines similarly provide redundancy to the elpipe based supergrid, while increasing transfer efficiency. Such a hybrid design would capture most of the efficiency benefit from using superconductors in a continental scale supergrid, without requiring as a prerequisite that extreme levels of reliability be proven for DC superconducting lines prior to building a supergrid. However, in order to implement such a hybrid scheme, the voltage withstand in cryogenic superconducting

cables will have to be improved from the currently feasible 200kV to the 800kV level that makes the most sense for a conventional-conductor based HVDC grid.

In its final implementation, the HVDC supergrid will probably incorporate all of the 800kV transmission options where appropriate. Figure 4 illustrates only the continental-scale electric pipelines that make up the backbone of the proposed hybrid continental supergrid. This consists of a combination of two kinds of major trunk lines: a 200 GW-capacity actively cooled elpipe loop around North America (red) and two superconductor links (blue, also 200 GW). Not shown in Figure 3, is a mesh of smaller 1-20 GW 800kV powerlines that can be overhead, cables, or small passively cooled elpipes. These smaller lines provide another level of redundancy in case of a main loop failure.

We have sought in this article to provide a balanced view of how a continental scale HVDC grid of the future will look. We are not promoting elpipes as a panacea for long distance transmission. Elpipes are practical for transmission of 5-200 GW at the continental scale (1.25% loss/1000 km), but are at present most competitive in the 10-20 GW size range. Elpipes will likely form one part of an HVDC grid that also includes superconducting lines, overhead transmission, and underground cables. Each technology will find its niche.

(This article appeared in the March 2010 issue of “Electricity Today” magazine.)

ELECTRIC PIPELINE CORP.

Roger Faulkner: CEO / Chief Scientist, (617) 549-9492, roger@elpipe.com
Ron Todd: CTO / COO, (508) 872-2691, ron@elpipe.com
www.elpipe.com

June 7, 2010

Keith & Sue Waid
HC 66 Box 608
Mountainair, NM 87036

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

To Whom It May Concern:

In addition to commentary in our letter dated June 7, 2010, we have some questions that require your response. Please reply at your earliest convenience:

1) What is the effect of an electric magnetic field of a 2-line, 500kv each transmission system on the health of humans, animals, and plant life in its vicinity? In close proximity, can EMF's cause cancer? Are reproductive cycles of cattle grazing nearby, for instance, negatively impacted?

2) Is this SunZia SW Transmission Line (2-lines, 500kv each) the entire project? Will there be future lines added to handle the transmission of additional solar and wind farms? If so, will these lines be in the same easement?

3) How will the people of New Mexico benefit from this transmission line?

Thank you for your attention to these questions.

Respectfully yours,

Keith and Sue Waid

RECEIVED
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2010 JUN 11 PM 1:35
STATE OFFICE
SANTA FE, NEW MEXICO
DATE RECEIVED
6/18/10

Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115
Santa Fe, NM 87502-0115

COMMENTS

We, the Aravaipa Property Owners Association (APOA), are writing you to express our strong and unanimous opposition to the Aravaipa transmission line route proposed by the SunZia Southwest Transmission Project. This route cuts through more than 20 miles of the Aravaipa Canyon watershed, crosses Aravaipa Creek on the east side of the Canyon, and bisects the Aravaipa Canyon Wilderness administered by the Bureau of Land Management to the north and Galiuro Wilderness in the Coronado National Forest to the south.

Aravaipa Creek is a perennial creek in the Sonoran Desert that flows through the wilderness and the area in which the APOA members live. Aravaipa Creek is home to two federally threatened fish species, the spikedace and the loach minnow, and is the only watercourse in Arizona still to have all its' native fish species. Other species of special concern in the creek and nearby are four other fishes (longfin dace, roundtail chub, desert sucker, and Sonoran sucker), three bird species (yellow-billed cuckoo, gray hawk, and black hawk), the desert tortoise, and the desert bighorn sheep. In other words, Aravaipa Canyon and its watershed constitute a unique environment and an ecologically sensitive area. In fact, the Aravaipa Canyon Wilderness has been called the "crown jewel" of the wilderness areas administrated by BLM.

Protection of the special aspects of this environment is a very high priority for APOA and the proposed transmission line route would threaten the Aravaipa Canyon Wilderness in a number of ways.

(1) The proposed route would block the road-less wildlife migration corridor between the Aravaipa Canyon Wilderness and the Galiuro Wilderness in the Coronado National Forest, one of the last of this magnitude in the southwest. The importance of this 100-mile long corridor has not been taken into account because for some unknown reason the study area stops just north of the Galiuros and does not include the road-less areas to the north. This is an essential corridor for many animals, such as desert bighorn sheep, black bears, mountain lions, and mule deer, and it connects these two ecologically pristine areas. Overall, approximately 50 miles of the proposed route would pass through or within one mile of areas determined to be environmentally sensitive, the largest number of miles in this category of all the transmission line routes, proposed or alternative. More importantly, once the transmission lines are in place with their

attendant maintenance access, they will act like a "gateway drug" to further access, first by off-road vehicles, then to more development and degradation.

(2) The proposed route would cross or closely parallel Aravaipa Creek on the east side of the wilderness and cross the Aravaipa Creek watershed for much of its length, potentially destroying and altering habitat important to native species.

(3) The proposed route includes more than 15 miles of mountainous terrain, making construction difficult, unduly expensive, environmentally degrading, and very undesirable for maintenance.

Again, we state our strong opposition to the proposed Aravaipa route, because of the great negative impact it would have on this ecologically sensitive area. As a result, we strongly urge you to remove this route from any further consideration as a route for the transmission line.

As a more environmentally conscious alternative, we support either of the proposed Tucson routes or other Tucson routes, which could be developed, were SunZia to share infrastructure corridors with Tucson Electric Power (TEP). We especially encourage you to adopt the Tucson route developed by the Cascabel Working Group. These alternatives would have the added benefit of meeting the requirements of the Federal Energy Regulatory Commission (FERC) for providing greater local access to this renewable energy rather than merely funneling it to markets outside the areas most impacted by the transmission lines.

If the preferred alternative includes either the Aravaipa or the San Pedro route, the so-called "green" aspect of the SunZia Southwest Transmission Project would appear to refer more to the color of the return to the investors rather than the essential environmental nature of the project.

Betty Wagner — June 8, 2010

ARAVAIPA PROPERTY OWNERS ASSOCIATION
c/o Betty Wagner, President
90890 East Aravaipa Road
Winkelman, AZ 85292
(betty@wagnerpartnership.com)

Organization:	**Aravaipa Property Owners Association**
Add to mailing list:	**Yes**
Withhold personal information:	**No**
Receive notification of EIS availability:	**Yes**

From: Doris Felts
Reply To: Doris Felts
To: NMSunZiaProject@blm.gov
Cc: windmill ranches
Subject: zia transmission lines
Date: 04/28/2010 11:45 AM

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thank you for the opportunity to respond to the transmission line project adjacent to the Windmill ranches.
Projects such as Windmill Ranches are sold to investors who will ultimately benefit the New Mexico economy. We would hope to be protected as to the land values in order to develop and urge you to protect us, and New Mexico as such.
I underestand that the northern route is the preferred one (for Windmill Ranches)
Sincerely Doris Felts

From: rjferrary@msn.com
To: nmsunziaproject@blm.gov
Subject: Sevilleta National Wildlife Refuge used as a transmission corridor
Date: 06/04/2010 04:11 PM

To Whom It May Concern:

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

We have visited the Refuge many times and taken out-of-state visitors to enjoy the wildlife too! This would be a travesty to build the transmission lines within this this

area.

Sincerely,

Joanne and Rich Ferrary

575-649-1231

Hotmail is redefining busy with tools for the New Busy. Get more from your inbox. See how.

From: Cheryl Fischer
Reply To: crf@earthlink.net
To: NMSunZiaProject@blm.gov
Subject: Power line porject
Date: 05/10/2010 07:26 PM

To Whom It May Concern,
I live in the Avra Valley where the proposed "green" lines are supposed to run and I oppose this project for several reasons. 1. The proposal will run through both Federal and State land, which has been set aside. 2. It will destroy the wildlife corrider. 3. Most importantly Sunzia is greenwashing the project since it starts near a coal plant and ends near where another one is proposed. Coincidence? I don't think so. If Sunzia wants to do green energy so much why doesn't invest in smaller footprint projects where power won't be lost because of the distance the power has to travel. Try again Sunzia, this is a bad idea.

--
Cheryl Fischer/CRF Investigations, Inc.
AZ Lic.# 1001849 CA Lic.# 10845
3661 N. Campbell Ave. #371, Tucson, AZ 85749
Phone: 520-682-8572, Mobile: 520-444-5551
www.crfinvestigations.com
Reality cannot be described, only experienced

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From: lenorek.1@netzero.net
To: NMSunZiaProject@blm.gov
Subject: Transmission lines over Aravaipa Canyon
Date: 06/03/2010 04:23 PM

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

Lenore Flanders
June 3, 2010
Willits, California

DIAMOND VENTURES

DATE RECEIVED 6/18/10

June 9, 2010

Via Email: NMSunZiaProject@blm.gov
& FEDERAL EXPRESS

RECEIVED
B.L.M.-MAILROOM
2010 JUN 10 AM 11:27
STATE OFFICE
SANTA FE, NEW MEXICO

Adrian Garcia, BLM Project Manager
U.S. Department of Interior
Bureau of Land Management
New Mexico State Office
c/o SunZia Transmission Line Project
301 Dinosaur Trail
Santa Fe, NM 87508

Dear Mr. Garcia:

The October 2009 Alternative Transmission Line Routes and the April 2010 Study Area Expansion includes and potentially impacts several thousand acres of our private land holdings. Our lands which include industrial parks, residential subdivisions, master planned communities, retail and commercial centers are within the new study areas boundaries. The majority of these properties have been entitled and are in various stages of development planning, permitting and construction. Each property potentially impacted has obtained some level of federal, state, county or city acknowledgement of future development, including approved plan amendments, rezoning, development plans, permits, plats, and development agreements.

Some Diamond Ventures' properties which have been initially identified as being within the Study Area include:

Smith Ranch
Rocking K
Black Angus
Mountain Vail
Rita Commerce
Rita Tech Park
Houghton Town Center
Hook M
Verano
Sycamore Park
503 Rail Park
I-10 Chevron

It is possible that additional properties may be identified.

The plans of SunZia Transmission LLC to construct and operate up to two 500 kilovolt transmission lines originating in Socorro or Lincoln County, New Mexico and going west for

2200 EAST RIVER ROAD SUITE 115 TUCSON, ARIZONA 85718-6586
520/577-0200 phone • 520/299-5602 fax • www.diamond-ventures.com

approximately 460 miles to Pinal County, Arizona should take into consideration the County and City designated growth areas and private lands approved for development. The Pima Association of Governments has a 2040 Regional Transportation Roadway Plan which should be used as a basis for alignments through the Tucson basin.

To the greatest extent possible, the alignment should run through public lands within the Tucson metropolitan area. Such alignment should run primarily through State Trust Lands south of I-10 within Pima County, and make every effort to avoid private property.

To the extent that the alignment could ultimately be on, or in close proximity to private property with the resultant negative effects, it is important for private property owners potentially impacted by the alignment to have answers to the following:

1. What are the property severance standards which will be used? If a portion of a large land holding is acquired to accommodate the line, how will the loss of value and loss or reduced use on the balance of the land be addressed?

2. Once the transmission corridor is finalized and the transmission line siting complete, how long will private lands be forced into a period of regulatory uncertainty before final purchase?

Please include us throughout all aspects and stages of the BLM process related to the SunZia Southwest Transmission Project. We are an interested and potentially impacted party and are concerned about the possible impacts to our private real estate.

Very truly yours,

DIAMOND VENTURES, INC.

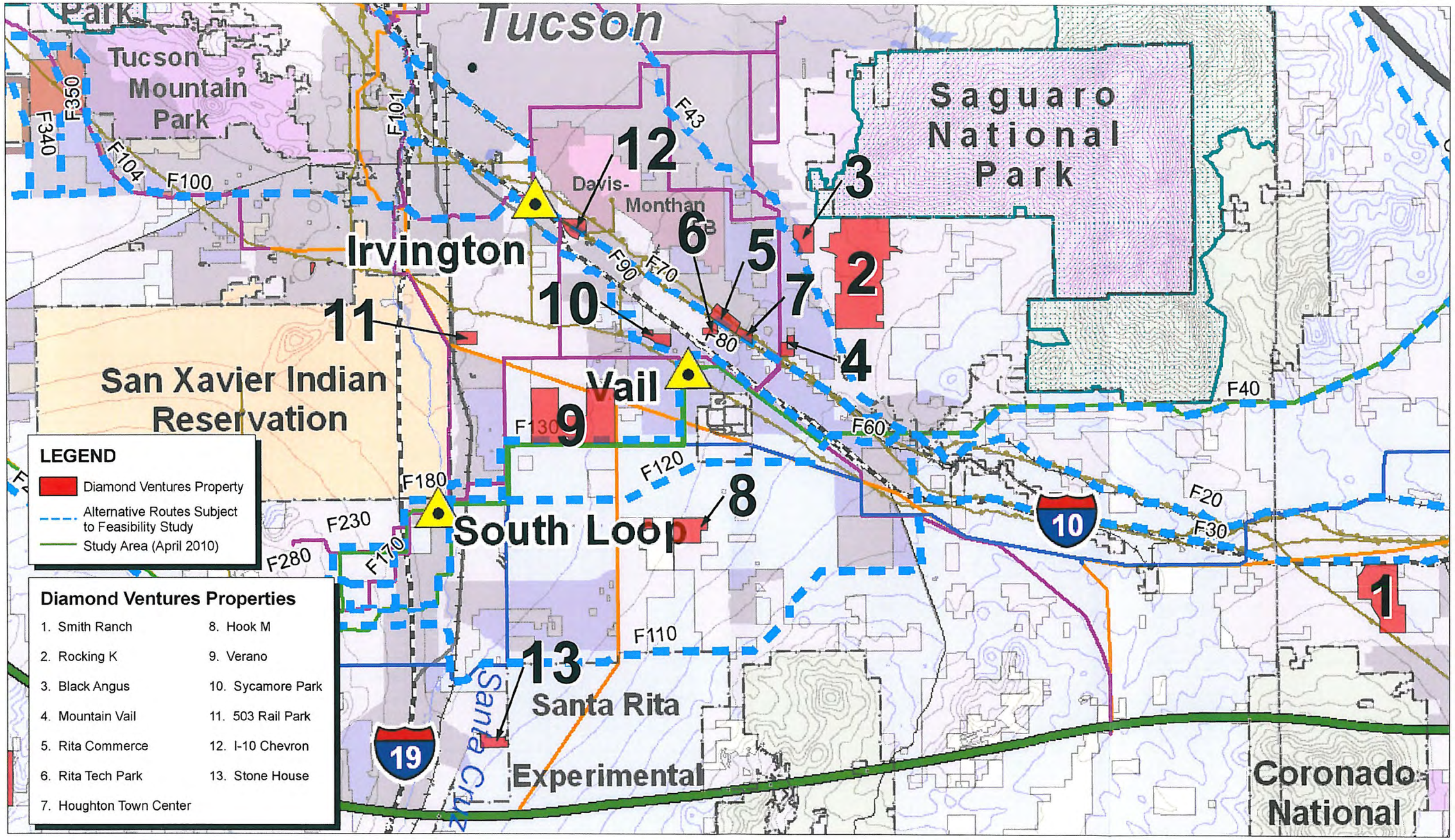
Kenneth D. Abrahams,
Executive Vice President

Cc: Bob Iannarino, Diamond Ventures
Priscilla Storm, Diamond Ventures

Encl: Map showing Diamond Ventures' real estate relative to October 2009 Alternative Transmission Line Routes and April 2010 Study Area Expansion

Map Pima Association of Governments 2040 RTP Roadway Plan

AFFECTED DIAMOND VENTURES PROPERTIES

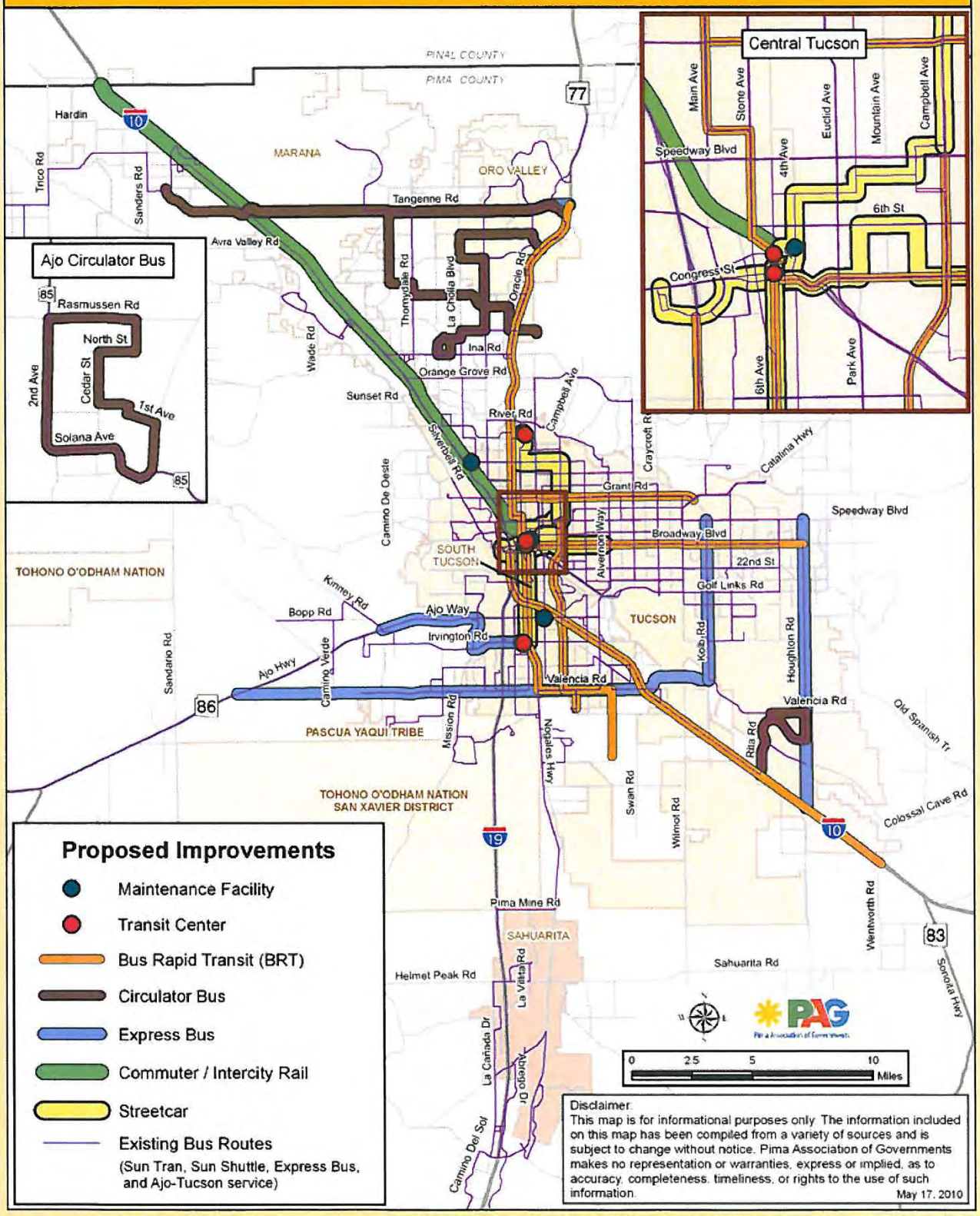


SUNZIA SOUTHWEST TRANSMISSION PROJECT

NORTH

THE PLANNING CENTER
a division of TPC Group Inc

2040 RTP Transit Projects



From: Karen Ford
To: NMSunZiaProject@blm.gov
Subject: Power lines near Bosque del Apache
Date: 06/05/2010 09:36 AM

I am in agreement with the Friends of the Bosque del Apache National Wildlife Refuge and would like to convey my opposition to the proposed study area expansion, as it does not provide any new routes that would relieve concerns regarding the wildlife and economy of the community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, I agree that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

The SunZia Southwest Transmission Project needs to acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that a more suitable route and underground lines are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Sincerely,

Karen Ford
Whitewater, Colorado

From: Cheryl Frank
To: NMSunZiaProject@blm.gov
Cc: Charlotte Lipson
Subject: I oppose building a power transmission corridor across the Rio Grande Valley/Bosque del Apache
Date: 06/04/2010 01:13 PM

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Thank you,

Cheryl Frank, Las Cruces, NM

From: Catherine Fridey
To: NMSunZiaProject@blm.gov
Subject: SunZia Project
Date: 06/04/2010 02:01 PM

Hello: I would like to convey my opposition to the proposed study area expansion, as it does not provide any new routes that would relieve concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, I believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.
Although "green" power is a concept that I wholly support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that these criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.
Thank you so much for your attention to this matter.
Best regards,

Catherine Y. Fridey
Enchanté Productions LLC
http://www.sandsoftimeseries.com/
catherinefridey@comcast.net
http://www.printfection.com/enchantefantasy
http://www.cafepress.com/enchantefantasy

From: Karla Galczyk
To: nmsunziaproject@blm.gov
Subject: WindMill Ranches
Date: 06/02/2010 12:28 PM

To whom it may concern, I am a property owner of lot #181 Windmill Ranches, NM. It is my intention to build a house on this property and with hope live out my life in peace. I am a native of the Philadelphia Pennsylvania region. Having grown up on a farm I was longing for the open quiet spacious NM lifestyle. I am fully against this project to cross through the Windmill Ranch with ANY power source reusable or other. I failed to understand with all of the open and unused property including the government owned BLM, why does this project have to impact the small property owner? Please count my opinion as a negative and note that I do not support this project.
Highest Regards,

Karlynne Galczyk RN, MSN, MPH, PhD(c)
Lecturer Widener University School of Nursing
One University Place
Chester, PA 19013
Karla

Hotmail is redefining busy with tools for the New Busy. Get more from your inbox. See how.

TIERRA GRANDE
IMPROVEMENT ASSOCIATION, INC.

RECEIVED
B.L.M.-MAILROOM
2010 MAY -4 PM 1:08
STATE OFFICE
SANTA FE, NEW MEXICO

May 3, 2010

Adrian Garcia, Project Manager
SunZia Southwest Transmission Project
Bureau of Land Management
New Mexico State Office
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

Dear Mr. Garcia,

Sue Moran, Administrator for the Tierra Grande Improvement Association, Inc. attended the SunZia Southwest Transmission Project Public Scoping Meeting in Socorro, NM on April 27, 2010. It was brought to her attention that two (2) of the proposed transmission line routes (N20 – N30) could impact our community

Tierra Grande Improvement Association is a rural residential development split between Valencia and Socorro County. We currently have over 140 homes in the area. It is bordered on the south by the Sevilleta National Wildlife Refuge and on the east by the Manzano Mountains / Cibola National Forest. Highway 47 runs north & south through the middle of the development and Highway 60 runs east and west in southern portion.

Our residents enjoy beautiful mountain views, star filled night skies, and unobstructed vistas. Enclosed is a CD/DVD about Tierra Grande as well as a brochure on our conservation mountain land as well as our Administrator's business card. Please take the time to visit our web site at www.TierraGrande.org.

The Tierra Grande Improvement Association's board of directors is requesting a meeting with a representative of the Bureau of Land Management and/or a representative of the SunZia Transmission Project to discuss the specific impact your project may have on Tierra Grande. Our office hours are Monday through Friday 9 a.m. to 4 p.m. We look forward to hearing from you.

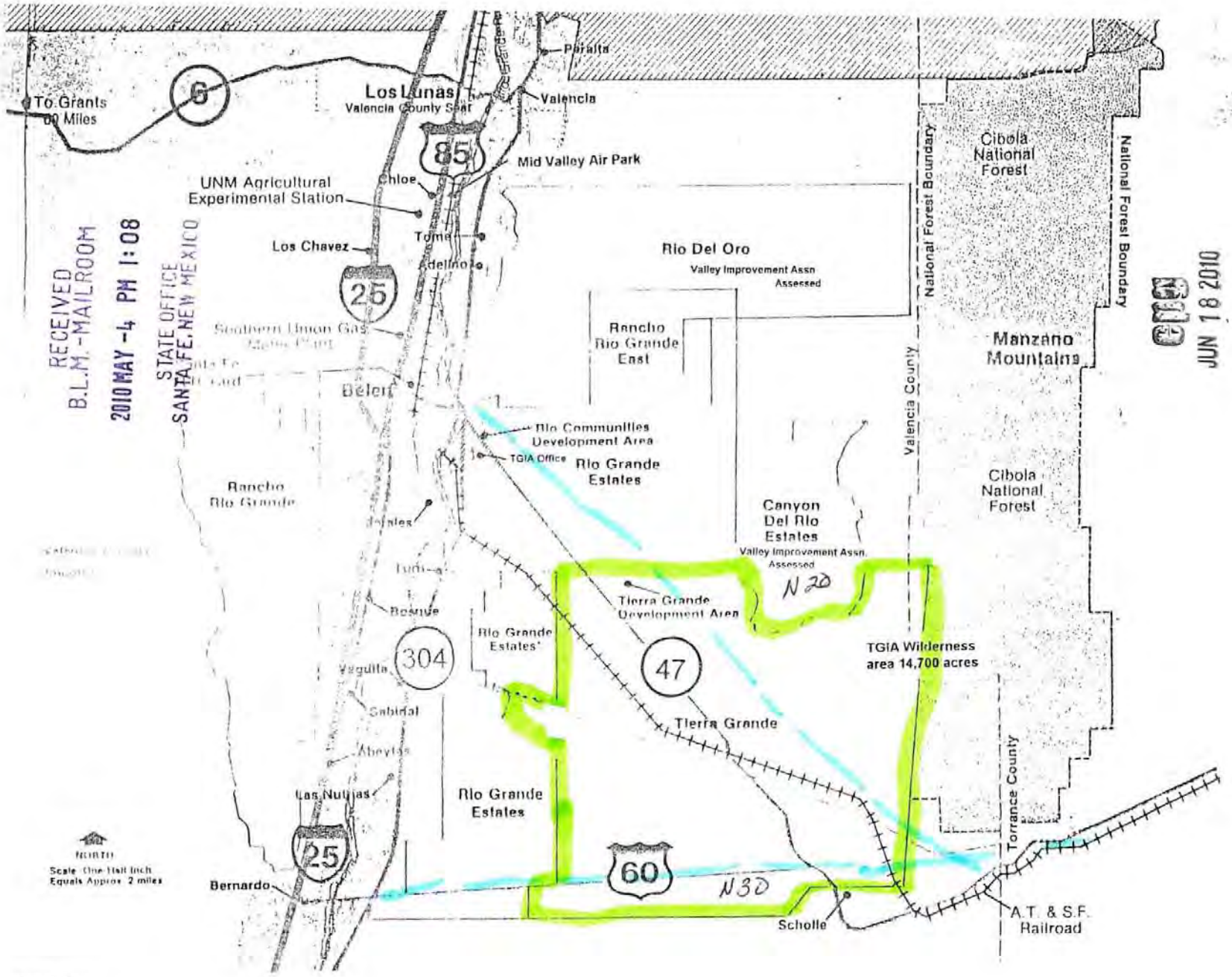
Sincerely,

Judi Magnussen,
President

JUN 18 2010

Enclosures
CC: Bureau of Land Management
Email: NMSunZiaProject@blm.gov

P.O. Box 1388, Belen, New Mexico 87002 Phone: (505) 864-2345 Fax: (505) 861-3903
E-Mail: info@tierragrande.org - Web: www.TierraGrande.org


To Grants
60 Miles
6
Los Lunas
Valencia County Seat
Peralta
Valencia
85
Mid Valley Air Park
UNM Agricultural
Experimental Station
Chloe
Los Chavez
Tome
Adelino
25
Southern Union Gas
Belen
Rio Del Oro
Valley Improvement Assn
Assessed
Rancho
Rio Grande
East
Rio Communities
Development Area
TGIA Office
Rio Grande
Estates
Rancho
Rio Grande
Canyon
Del Rio
Estates
Valley Improvement Assn.
Assessed
N 20
Tierra Grande
Development Area
Rio Grande
Estates
304
47
TGIA Wilderness
area 14,700 acres
Vegulla
Sabidal
Tierra Grande
Abeytas
Las Nutrias
Rio Grande
Estates
25
60
N 30
Bernardo
Scholle
A.T. & S.F.
Railroad
National Forest Boundary
Cibola
National
Forest
National Forest Boundary
Manzano
Mountains
Valencia County
Cibola
National
Forest
Torrance County
NORTH
Scale: One-Half Inch
Equals Approx. 2 miles
RECEIVED
B.L.M.-MAILROOM
2010 MAY -4 PM 1:08
STATE OFFICE
SANTA FE, NEW MEXICO
JUN 18 2010

AC 3597 (7/71)

From: BarbGale
To: nmsunziaproject@blm.gov
Cc: friends@sdc.org
Subject: Oppose current SunZia plan
Date: 06/04/2010 11:12 AM

Dear Sir or Madam,

As members of Friends of Bosque del Apache, we are writing to oppose the current plan by SunZia. We would like to see the removal of the possibility of routes near the refuge, the incorporation of an underground river option, and the removal of all threats to migratory birds with any proposed additional routes. The refuge is an amazing place and the wildlife there should not be endangered. People come from all around the country to see the migratory birds - it's a world-class destination and should be kept as such. Any plans must take into account the ecological and economic impacts that this project will have so that flyway and viewscape issues are appropriately addressed. SunZia should acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact.

Thank you.

Barbara Gale & Stuart Jacobson

From: Susan Graham
To: NMSunZiaProject@blm.gov
Subject:
Date: 06/06/2010 07:15 PM

To SunZia: I concurr with the letter set forth by Leigh Ann Vradendburg of Bosque del Apache to explore more alternatives regarding power lines crossing flyways of THOUSANDS of birds of MANY species -- as well as marring the landscape vistas of us humans who buy & sell these lands. Susan Graham

From: Steffie Grow
To: NMSunZiaProject@blm.gov
Subject: Bosque del Apache
Date: 06/05/2010 08:31 AM

To Whom it may Concern,

This letter is to inform you of strong oppostion to the proposed power transformers in the vicinity of Bosque del Apache.

Please reconsider this action, as there other options do exist that would not threaten this beautiful and fragile wildlife sanctuary.

Sincerely,

Steffie Grow

From: j.guevara@mchsi.com
To: NMSunZiaProject@blm.gov; NMSunZiaProject@blm.gov
Subject: E10 and E80 are favorable
Date: 06/09/2010 06:28 PM

Hello,

My wife and I bought a ranch between Corona and Carrizozo. Route E10 and E80 are favorable to us and would accelerate our ability to move to your New Mexico. We currently live in Georgia.

Jose C. Guevara
TRADOC G@ Intelligence Support Activity
WETTED
706 610 6227
Cell 706 442 5206

National Parks Conservation Association
Protecting Our National Parks for Future Generations

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:36
STATE OFFICE
SANTA FE, NEW MEXICO

Southwest Regional Office

307 West 200 South
Suite 5000
Salt Lake City, UT 84101
801 521 0785 (phone)
801 359 2367 (fax)

Adrian Garcia, Project Manager
Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115
Santa Fe, NM 87502–0115

June 4, 2010

Dear Mr. Garcia:

We appreciate the opportunity to provide scoping comments on the proposed SunZia Southwest Transmission Project. Founded in 1919, the National Parks Conservation Association (NPCA) is America's leading advocate for the national parks. Our mission is to protect and enhance America's national park system for present and future generations. NPCA believes that our parks should be well funded, broadly and enthusiastically visited, respectfully experienced, and cherished for the national treasures that they are to all of us. To achieve our mission, NPCA conducts research, designs solutions, mobilizes diverse constituencies, and advocates for the parks before policy makers and the courts. NPCA has more than 315,000 members, 164 staff members, and 24 regional and field offices throughout the country.

NPCA supports the development of renewable energy sources and understands the abundant wealth of solar and wind potential in the Southwest. However, when a project has potential impact on a national park unit, in this case White Sands National Monument, careful evaluation is warranted. We feel the following should be considered in this process:

- Before identifying the preferred alternative for the transmission corridor, a thorough analysis of the visual resource impacts to White Sands NM from the proposed eastern corridors should be conducted.
- Line burial should be considered as mitigation to visual impacts or if this proves to be economically unviable, the transmission line and corridor should be removed from consideration.
- Where ever feasible, existing corridors and transmission lines should be utilized.
- Provide careful consideration of the impact of proposed transmission corridors and lines that could affect wildlife corridors and further habitat fragmentation.

epd
JUN 16 2010

NPCA Headquarters
1300 19th Street NW • Suite 300 • Washington, DC 20036
202.223.NPCA(6722) • Fax 202.659.0650 • npca@npca.org • www.npca.org

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- The National Park Service should be added as a cooperating agency. BLM had an affirmative duty to extend a cooperating agency invitation to the NPS.

Again, NPCA appreciates this opportunity to comment and looks forward to reviewing a full and carefully analyzed range of alternatives in the draft EIS.

Sincerely –

Karen Hevel-Mingo
Program Manager
Southwest Regional Office, NPCA

From: vince gutschick
To: NMSunZiaProject@blm.gov
Subject: Threat to migratory birds
Date: 06/04/2010 01:28 PM

Dear BLM staff,

I'm a strong supporter of green energy, and just as strong on protecting migratory birds. The Sun Zia line running by the Bosque del Apache would create a major hazard for the migratory birds in one of their prime habitats. I would like to know the projected electrocution kill of raptors, which are the birds most likely to perch on lines, and likely impact kills on non-raptors.

Many thanks,
Vince Gutschick

--
If humanity profits from its mistakes, we have a glorious future coming up.
--Laurence J. Peter

Every man is a damn fool for at least five minutes every day; wisdom consists of not exceeding the limit.
--Elbert Hubbard

Now and then an innocent man is sent t' th' legislature.
--Frank MicKinney Hubbard

Happiness is like coke -- something you get as a by-product in the process of making something else.
--Aldous Huxley

If a little knowledge is dangerous, where is a man who has so much as to be out of danger?
--Thomas Henry Huxley

Vince Gutschick Internet: vince.gutschick@gmail.com
Global Change Consulting Consortium, Inc.
4904 Calabazilla Rd.
Las Cruces, NM 88011
Phone 1-575-571-2269 FAX 1-575-646-5665
Web site: http://gcconsortium.com

From: susan hall
To: NMSunZiaProject@blm.gov
Subject: sun zia - I'm opposed
Date: 06/04/2010 03:16 PM

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Susan and Chris Hall

From: Dorothee Harmon
To: NMSunZiaProject@blm.gov
Subject: SunZia Southwest Transmission Project
Date: 06/10/2010 11:10 PM

I understand that the Bureau of Land Management is currently assessing the environmental impacts of the various alternative routes proposed by the SunZia Southwest Transmission Project. I am pleased to see that the SunZia Project is now considering routes that follow the major infrastructure corridor along Interstate 10. Routes within the developed or highly disturbed areas near this corridor are the only appropriate routes for new high voltage lines in the project's Arizona study area. Building a new major infrastructure corridor in the environmentally sensitive areas of the Aravaipa and San Pedro regions would cause permanent damage to our dwindling wilderness areas in southern Arizona, as well as loss of wildlife habitat and wildlife migration corridors. Thank you for the opportunity to comment on this proposal.

RECEIVED
B.L.M.-MAILROOM
2010 MAY 21 PM 1:26
STATE OFFICE
SANTA FE, NEW MEXICO

May 18, 2010

Adrian Garcia
SunZia Southwest Transmission Project
PO Box 27115
Santa Fe, NM 87502-0115

Dear Mr. Garcia:

I am a biologist, a teacher, and a frequent visitor to the San Pedro Valley. I met you briefly on April 15th in Cascabel at the meeting of BLM officials and the Redington Natural Resource Conservation District Board of Supervisors.

Here are my comments on the proposed SunZia Transmission Project:

Of the many routes under consideration for approval by the BLM, none should be undertaken except those in areas already disturbed by highway or energy transmission infrastructures, such as the existing I-10 corridor or the route through the Tucson area. To reject these on the basis of cash economic concerns reveals an unaffordable and archaic way of thinking about economy.

We must see economics in terms of the planet's resources and living systems, rather than financial speculation on the part of big investors. We must understand that all of us are investors here, including human citizens and wildlife and generations to come. To think of saving money by running 300 16-story transmission towers along the San Pedro River Valley, with the associated bulldozing, tree removal, and road construction, is to think in an unthinkable way, one that only appeals to the wallet.

This project has been touted as promoting "green energy," but we know there has been no energy source identified at all. In the end, these towers could be used to carry electricity from nuclear plants or coal-fired plants. The investors will be happy to provide access to the first customer with the need and the fee.

SunZia, if it should come to pass, will provide a negligible income for the use of public lands. This leasing is practically a giveaway and should not be considered an argument for proceeding. The real cost of the project will be felt in interrupted wildlife corridors, disturbed habitat, and in the opening up of wild lands to unmonitored use by all-terrain and off-road vehicles. This will inevitably lead to erosion, loss of vegetation, and siltation in the aquatic habitats.

If the transmission towers are to be built at all, they should never be routed in the San Pedro River valley. I worry further that huge projects such as this one will be seen by some as holding out the possibility that we Americans can continue the unsustainable way of life we see today which has resulted in so much irrevocable damage to earth, air, and water, and in terrible species extinctions and poor prospects for the futures of all of us.

epg
JUN 18 2010

We must downsize our projects, our lifestyles. Electricity should be produced in Arizona for use in Arizona, not transported hundreds of miles from New Mexico from a source as yet undescribed—probably with intentions of going all the way to the more profitable markets in California. Any new energy production and transportation schemes should be balanced with conservation projects. We should put our investment there, not in giant towers and roads across wilderness areas in the southwest.

Please keep SunZia away from the San Pedro.

Yours truly,

Bonner J. McAllester
PO Box 332
Monterey, MA
01245

CPD
JUN 18 2010

From: Hartman, John (IHS/PHX)
To: NMSunZiaProject@blm.gov
Cc: jsturcotte@aol.com
Subject: The Sacred Aravaipa Valley
Date: 06/02/2010 09:24 PM

To Whom it may concern at Sun Zia Southwest Trasmission Project:

I am writing to voice my objection to the proposed use of the Aravaipa Valley as a corridor for power lines. This is a sacred area to the Apache people who still own land allotments in this valley. It is the site of the Camp Grant Massacre and a National Historical Landmark where 120 Apache women and children (victims of the Camp Grant Massacre) are buried on the Mesa top. The Non profit organization Apaches of Aravaipa Canyon is raising money to create a cultural center at the massacre site to tell the story of this historical event. You may check our website at www.apachestelltheirstory.com<http://www.apachestelltheirstory.com/>

Sincerely,

John Hartman, President of Apaches of Aravaipa Canyon

From: Philip Hedrick
To: NMSunZiaProject@blm.gov
Subject: SunZia Comment
Date: 06/09/2010 11:20 PM
Attachments: BLM letter.docx

June 10, 2010

Mr. Adrian Garcia
Project Manager for the SunZia Southwest Transmission Project
BLM New Mexico State Office
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

Dear Mr. Garcia,

When I met you and the SunZia representatives in Mammoth at the open house, I was given the impression that you and the SunZia representatives agreed with me that the Aravaipa route made no ecological, economic, or practical sense and that it would not be the recommended route for the transmission lines. I have been completely surprised to understand that the Aravaipa route is now the preferred route for this "green" project even though it would do the most environmental damage to what BLM calls the "jewel" of its wilderness areas.

I am a senior and internationally known conservation biologist at Arizona State University. I and my scientific colleagues at ASU and the University of Arizona have been conducting research in Aravaipa Canyon and the surrounding tablelands for many years and are strongly opposed to having these transmission lines going through the Aravaipa watershed. (Note that I am writing this as a private citizen, not as an employee of ASU, and mention my association with ASU to signify the widespread opposition to using the Aravaipa route in the scientific community at ASU, UA, and elsewhere.) Because of the short notice about the change in preference to Aravaipa, I have only been able to briefly talk to and email some of my colleagues. But if BLM recommends the Aravaipa route, I can promise you large opposition from the scientific and environmental community.

Recently, I have been studying the bighorn sheep population in Aravaipa. This population has provided the largest hunter-harvested desert bighorn sheep ever. Human activity and habitat modification associated with the transmission lines would greatly impact this unique bighorn sheep population. In other words, if BLM recommends the Aravaipa route, I can also promise you large opposition from the hunting community.

I strongly urge you to remove the Aravaipa route from any further consideration as a route for the transmission line and, as a more environmentally conscious alternative, use either of the proposed Tucson routes or other Tucson routes, which could be developed. In particular, I encourage you to adopt the Tucson route developed by the Cascabel Working Group.

Yours sincerely,

Phil Hedrick

June 10, 2010

Mr. Adrian Garcia
Project Manager for the SunZia Southwest Transmission Project
BLM New Mexico State Office
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

Dear Mr. Garcia,

When I met you and the SunZia representatives in Mammoth at the open house, I was given the impression that you and the SunZia representatives agreed with me that the Aravaipa route made no ecological, economic, or practical sense and that it would not be the recommended route for the transmission lines. I have been completely surprised to understand that the Aravaipa route is now the preferred route for this "green" project even though it would do the most environmental damage to what BLM calls the "jewel" of its wilderness areas.

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Yours sincerely,

Phil Hedrick

From: Anne Helwig
To: nmsunziaproject@blm.gov
Subject: Opposition to proposed SunZia line through sensitive wilderness areas
Date: 06/09/2010 09:17 AM

Dear Mr. Garcia,

I oppose erecting power transmission lines through sensitive wilderness areas such as Aravaipa and the San Pedro River valley because of the potential to disturb wildlife and degrade the beauty of this remote area. If such a transmission line is necessary, it should follow a route that has already been developed such as Interstate 10. However, I believe a preferable solution is to generate the power at a source closer to the region where it will be consumed.

Sincerely,

Anne Helwig
812 S. Main Ave.
Tucson, AZ 85701
(520) 623-9040

The New Busy is not the too busy. Combine all your e-mail accounts with Hotmail. Get busy.

May 17, 2010

Dear BLM New Mexico State Office,
Sun Zia Southwest Transmission Project,

I am writing because I want the Bosque del Apache protected from any impact from the Sun Zia transmission project. The Bosque is on the flyway used by 60,000 ducks, 20,000 cranes, and 40,000 geese. The Bosque is a precious treasure to save for us and future generations. The Bosque del Apache also contributes to the economic vitality of Socorro and the surrounding communities.

I prefer that the transmission line route be located on the east side of White Sands Missile Range and continue south to Fort Bliss.

Received at BLM on 5/18/2010 AG

cpg
JUN 18 2010

page 2

My second preference is for the power line to cross at Derry - Arrey and follow the northwest boundary of the White Sands Missile Range and head east at Highway 380.

Please protect our wildlife!

Thank you for your consideration of my sincere request.

Mary Joan K. Truesdell
Box 185
Socorro, NM
87801-0185

M. J. Truesdell

EPCC
JUN 18 2010

From: fermentedmusic@fermentedmusic.com
To: nmsunziaproject@blm.gov
Subject: I Oppose Sun ZIa Power Lines
Date: 06/09/2010 12:09 PM

Dear Mr. Garcia,

I oppose erecting power transmission lines through sensitive wilderness areas such as Aravaipa and the San Pedro River valley. These are the only remaining riparian wilderness areas in Southern Arizona, and the proposed project will destroy them.

It does not matter how many precautions the designers and builders take. The project will encourage development of roads, off-road vehicle intrusions, and completely unnecessary "development" into these areas, which can only result in the disruption of active wildlife corridors and highly complex and sensitive ecosystems. In other words, the project will slaughter a complex of plant and animal life that will never be found anywhere else.

The issue here is not electric power, because there are plenty of alternative ways to provide it and distribute it. The issue is the survival of the San Pedro and Aravaipa river valleys. If you allow these places to become as urbanized, fragmented, polluted, and homogenized as so much of the rest of Southern Arizona already is, there will be no further natural beauty left. The proposal should be called "eco-cide".

Any future power lines should follow a well-established, previously developed route, such as I-10.

Sincerely,

Michael K. Henderson

From: Kevin Henderson
To: nmsunziaproject@blm.gov
Subject: Comment on the Sunzia power lines...
Date: 06/10/2010 02:16 PM

Dear Mr. Garcia,

I am very much opposed to the proposed power lines going through any areas like Aravaipa and the San Pedro River Valley. These areas are some of the last pristine wilderness and wildlife habitat we have let in this country. Why on earth disturb them, when we have so many highways already? Furthermore, with events like the BP tragedy in the news, we as a society should be looking to generate power locally, and use less of it. There is no reason to disturb these beautiful and rare remote areas. Please re-think this crazy and un-necessary proposal.

Thank you,

Kevin Henderson
428 E. 17th Street
Tucson, AZ
520.624.4252
--
http://www.sapientrecords.com
http://www.reverbnation.com/theswigs
http://www.youtube.com/user/SwigsMusikCorp

John R. Sais
HC66 Boc 604
Mountainair, New Mexico
87036
575 - 423 -3218

Recived at
BLM on 6/2/2010
AG

Adrian Garcia
Project Manager
SunZia Project
BLM NM State Office
PO Box 27115
Santa Fe NM

Adrian Garcia:

The local owners and land lease holders of the Rayo Community respectfully ask for a 45 day extension of time to assess the amended proposal for the SunZia transmission project. Although under NEPA only a federal register notice is required and notice in a local newspaper, no direct notice was provided to the property owners that are directly impacted.

No one in the rural areas wake up each day and check the federal register and none subscribe to the local newspaper.

It was by chance that someone discovered the notice of hearing to be held at Socorro on the 27th of April.

Not until some time after this date were the impacted landowners became aware of the implications of the two high voltage power lines passing over the properties and in some cases directly over their homes. The first time we had any detailed available maps supplied by BLM Santa FE Office that indicated the sections and townships was May 11th.

We therefore respectfully ask for an extension of time of 45 days to properly assess the impacts on our health, economics, environment, life style and customs and cultural and historical heritages..

Thank You for your consideration,

Respectfully yours,
Rayo Community residents signatures:

John R. Sais, Ramona Sais
Robert Sais
Alice Lee, Kacey Lee
Mary Lee
Joan R. Donaldson
Scott B, Susan B

May 18, 2010

Ernest Thompson

EPG
JUN 18 2010

Page two request for extension of comment period:

The above signatures on Page 1 consist of ranches that total about 144,000 acres and are a partial list of the new proposed study route on the Northern Extension Area of White Sands Missle Range for the proposed SunZia transmission line: Below are the names of the signatures of Page 1:

Ernest Thompson
John Sais
Ramona Sais
Roland Sanchez MD
Oliver Lee
Kathy Lee
Shawn Cain
Monty Oney
Joan Donaldson
Curt Boyd
Susan Boyd

Thank You please advise of your decision;

John R Sais
575-423-3218

EPG
JUN 18 2010

Roland Kent Sanchez, M. D.

DIPLOMATE OF THE AMERICAN BOARD OF FAMILY PRACTICE
FELLOW OF AMERICAN ACADEMY OF FAMILY PHYSICIANS

June 1, 2010

Received BLM
on May 25, 2010
AG

NM Sun Zia Project
BLM New Mexico State Office
PO Box 27115
Santa Fe, NM 87502-0115

Dear Sir or Madam:

Red Doc Farm is composed of Roland K. Sanchez, MD, Elia Sanchez, Jessica Sanchez, MD, Alicia Sanchez, M.S. Adolfo Sanchez, MD, Roland Sanchez II DDS, Florian Sanchez, 4th year Vet Student and Emilio Sanchez senior at Texas Tech – Animal Science. Red Doc Farm is currently renting 27 sections from Joan Donaldson, Donaldson Ranch.

We are strongly opposed to one of the proposed routes for NM Sun Zia Project for the new electrical transmission lines from Corona, New Mexico through this pristine property for the following reasons:

1. The economic effect on this Ranch and the historic Ranches that surround this Ranch. These Ranches depend on contracts with the White Sands Missile Range to provide air space for military aircrafts and missile experiments. This threatens these contracts.
2. These pristine Ranches are virtually untouched by man and are home to deer, elk, antelope, oryx, and an unlimited amount of wild animals.
3. As a physician and a family of physicians, we are concerned and opposed to this project due to the uncertainty of the medical effects of the electro magnetic field in this transmission line and reports of increased incidents of cancer of people living near these lines.
4. Studies in Iowa show animal migration is disturbed by this magnetic field, as animals tend to congregate under the lines that interfere with proper grass management affecting nutrition to domestic and wild animals.
5. We are asking that another route be found due to the economic, medical, and pasture concerns and the preservation of this pristine, untouched conglomerate of land with many third and fourth generation Ranchers trying to preserve a land and way of live. We strive to preserve this so that others may share this beauty.

epd
JUN 18 2010

703 SOUTH CHRISTOPHER ROAD BELEN, NEW MEXICO 87002
TELEPHONE (505) 864-7781 ANSWERING SERVICE (505) 260-7487

We ask who is New Mexico Sun Zia? Do they have a contingency for compensation to those with medical effects and compensation to the Rancher for their economic loss due to their lines? Who are the members and owners and what are their resources?

Sincerely,

Roland Kent Sanchez, MD
Representation for Red Doc Farm

JUN 18 2010

June 10, 2010

*Delivered via electronic mail (*NMSunZiaProject@blm.gov*) and U.S. mail.*

RECEIVED
B.L.M.-MAILROOM
2010 JUN 14 PM 1:02
STATE OFFICE
SANTA FE, NEW MEXICO

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115

Re: Scoping Comments on Proposed SunZia Transmission Project

Dear Mr. Garcia:

Please accept and fully consider these scoping comments on the proposed SunZia transmission project on behalf of the Empire-Fagan Coalition, an organization dedicated to education and preservation in the Empire-Fagan Valley-southeast of Tucson. We appreciate your continued consideration of additional routes for SunZia and providing the opportunity to comment. Although Empire-Fagan's comments are targeted to the southeastern portion of the proposed "Tucson" area alternatives, *(links F-43, F-60, F-110 and F-120 attachments 22-23 and 12)* we concur with current environmental concerns about alternatives through Aravaipa Canyon and the San Pedro Valley as presented by The Wilderness Society, Sonoran Institute, Cascabel Working Group and others.

Summary of Findings

These comments build upon comments and testimony made in a Tucson Electric Power case before the Arizona Power Plant and Line Siting Committee. Line Siting Case 137 began on February 19th, 2008 and ended on August 18th, 2008.

The Arizona Power Plant and Line Siting Committee voted to deny Phase 2 of LS Case 137 and ACC Commissioners upheld the decision to deny a transmission line and substation near or adjacent to current alternatives in the southeastern Tucson area portion of Sunzia's routes. *(Links F60 and F110)* The ACC Commissioners also voted to move another part of the transmission line and another substation (dubbed Phase 1) away from a residential subdivision into a more appropriate location. Additionally, evidence was presented by the applicant, TEP, as to why areas similar to Link 70 had been eliminated from consideration.

Additionally, on July 1st 2008, the Pima County Board of Supervisors voted unanimously to support the denial of a CEC for Phase 2 of the Vail Area Project. *(See attached 13 and link below)*

http://images.edocket.azcc.gov/docketpdf/0000086664.pdf

We have included the transcripts from the nine days of hearings as well as two days of special meetings which expose multiple constraints to an area nearly adjacent to the proposed Sunzia Tucson route (southeastern portion). Our comments submitted via US Mail will not include the transcripts and a project area map which are attached to this email *(attachments 1-12)* and can also be accessed at Tucson Electric Power's website: http://www.tep.com/company/news/Vail/index.asp

Furthermore, at ACC Docket Control, there are numerous citizen comments and party exhibits in opposition of the 138kv transmission line and associated Mountain View substation in the Cienega Corridor. In addition, there are comments from residents regarding Phase 1 from the same neighborhoods who would be directly impacted by the current southeastern Tucson area Sunzia alternatives.

https://edocket.azcc.gov/ Case # L-00000C-08-0011-00137

JUN 18 2010

PO Box 812, Vail, Arizona 85641- info@empirefagan.org - www.empirefagan.org

We will also continue to gather additional new information important to this process, and will be submitting supplemental comments after June 10th. We understand that although BLM has not formally extended the scoping deadline, the agency will continue to accept comments after June 10th.[1]

General Procedural Concern: Just one public meeting was held in Central Tucson for the "Tucson" area alternatives after the new Tucson area proposed routes were added to the process in 2010. There are independent rural communities east and west of the City of Tucson that would be directly and indirectly impacted by the Sunzia project who were not actively pursued for comment during the scoping process.

Additional recommendations are provided here on several key issues:

1. Continuing to improve and expand opportunities for stakeholder involvement, which will be critical for minimizing impacts and building stakeholder support in the often extremely contentious process of siting transmission lines;
2. Additional information on resources and values that could be impacted along the routes
3. Recommendation that SunZia follow-through with their intended plan to include a detailed Construction, Operation and Maintenance (COM) Plan as part of the DEIS;
4. Recommendation of robust cumulative impacts analysis for the many additional projects planned for the area, including but not limited to additional transmission lines;
5. Recommendations on consideration of a full range of off-site mitigation strategies, in addition to on-site mitigation;
6. Recommendation on continued coordination with the Department of Defense to identify potential siting and mitigation solutions that could minimize impacts to the environment while also minimizing impacts to military missions;
7. Recommendation that BLM make all GIS data developed as part of the EIS process available for download on the BLM project website.

<u>*1. BLM and SunZia Should Expand Public Education and Engagement Before the DEIS is Released</u>

We realize the tremendous challenge of engaging communities and other stakeholders across 500-mile corridor. We also wish to acknowledge SunZia's efforts to engage environmental organizations and other stakeholders early and frequently in the planning process to date. However, we are concerned that the public process and meeting schedule has not been adequate in both educating the broader public about the need for a renewable energy transmission line like SunZia and in engaging a number of communities potentially impacted by transmission line (in Arizona, these include the Avra Valley, Vail, Sulphur Springs, and a number of Tucson neighborhoods).

We have some suggestions (*taken from a letter submitted by The Wilderness Society)* to address these concerns:

- First, we believe that a comprehensive outreach program is still necessary in order to provide the public with a clearer understanding of how SunZia may contribute to our nation's reduced dependence on carbon fuels and increased reliance on clean, safer, and reliable sources of energy. Such a program should specifically address how the proposed transmission line fits into a broader set of plans for renewable energy development and transmission in the West and the extent to which the proposed transmission line can (or cannot) be characterized as a "renewable energy transmission line."

- Second, we are extremely concerned that releasing a draft EIS with a set of preferred routes without additional public engagement may foster significant public opposition that does not consider the project's potential public benefits. We strongly encourage SunZia and the BLM to consider initiating a stakeholder engagement process that goes beyond the minimum NEPA requirements for public meetings and comment as part of the EIS. Ideally, this should have been started prior the scoping process and engaged representative stakeholders along the entire route.

[1] BLM website for SunZia: "The BLM will continue to accept comments received after the June 10th, 2010 public comment period for the proposed SunZia Southwest Transmission Project." *See* http://www.blm.gov/nm/st/en/prog/more/lands_realty/sunzia_southwest_transmission.html

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However, we believe that starting such a process before a draft EIS is released could prove extremely valuable in providing constructive suggestions and minimizing conflicts over route selection, project design, and mitigation activities. This process would build on ongoing consultations SunZia has had with community leaders, private landowners, environmental groups, local jurisdictions, and state and federal agencies. We refer you to the Boardman to Hemingway process (www.boardmantohemingway.com), led by Idaho Power, the BLM, the Forest Service, and the Oregon Department of Energy, as a model stakeholder engagement process. In the event that SunZia and the BLM does not initiate such a stakeholder engagement process, we recommend that, at a minimum, additional public meetings in communities likely to be impacted by potential routes are conducted before the draft EIS is released.

2. Additional Information on Opportunities, Constraints, Resources and Values along the Tucson Area Routes as Well as Potential Additional Routes.

A. Arizona – Tucson Area (specific to the eastern edge of Tucson, near Vail, Cienega Creek/Davidson Canyon)

Although significant opportunities may exist in the Southeastern Arizona area to avoid impacts to remote, mostly intact ecosystems by co-locating SunZia along existing transmission lines, highways, and other infrastructure, there are also sensitive and valuable environmental resources in many parts of the Southeastern Tucson area as well and that there are additional challenges to siting transmission lines in urban areas.

We also recommend that BLM analyze the potential benefits to the reliability of Tucson's electrical grid and ability to meet future load growth if SunZia were routed through or near the city. We also recommend that BLM conduct a thorough financial and infrastructure feasibility study regarding Tucson Electric Power's ability to tap into a 500kv system when TEP's current infrastructure is based on 345kv.

Biological Resources Southeastern Tucson Area Routes: Davidson Canyon (Link F10)

(Attachments 19-21 are included to provide additional information)

The Davidson Canyon provides one the most important wildlife migration corridors in Southern Arizona, linking the Santa Rita Mountains to the west to the Empire Mountains in the south to the Rincon Mountains in the north. The region provides important riparian habitat for a diverse flora and fauna, including priority vulnerable species listed under the Sonoran Desert Conservation Plan,

http://www.pima.gov/cmo/sdcp/intro.html

threatened and endangered species or species of concern identified by the U.S. Fish & Wildlife Services, including the lesser long-nosed bat, lowland leopard frog and the long fin dace, to name a few.

Why is it so Important? Davidson Canyon contains perennial and intermittent reaches and springs, is in a free-flowing condition, and water quality data provided by Pima Association of Governments (PAG) indicates that the water quality is good

http://www.pagnet.org/Programs/EnvironmentalPlanning/Water/tabid/178/Default.aspx

Davidson Canyon possesses attributes that make it of exceptional ecological significance. Davidson Canyon is one of the largest drainages into the Cienega Corridor. It is widely recognized as a major contributor to the continued health of the water aquifer in the Tucson Basin. Davidson Canyon is of the main tributaries to Cienega Creek, which recharges nearly 20% of Tucson's water supply.

Surrounding lands (Bar V Ranch) have been acquired by Pima County with 2004 bond funds as part of the Sonoran Desert Conservation Plan.

The Davidson Canyon has been added to the Outstanding Arizona waters
http://pima.gov/Mining/C.Outstanding%20Waters%20desig%20for%20DC/press%20release/New%20release.pdf

which affords up-front protections for these unique resources and prevent degradation of their water quality. It is clear we must work to preserve, rather than repair.

Existing and Reasonably Foreseeable Impacts to Davidson Canyon/Cienega Creek (and other considerations):

What are cumulative impacts?

"Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. http://ceq.hss.doe.gov/nepa/regs/ceq/1508.htm

1. Rosemont Copper Potential Impacts to the Davidson Canyon:

a. Recent Study released entitled "Technical Memorandum, Updated Groundwater Modeling Report, Proposed Rosemont Open Pit Mining Project Prepared for Pima County and Pima County Regional Flood Control District *(attached 14)*
b. Potential source and non source pollutants into the Davidson Canyon
c. Potential loss of surface water
d. Air quality

2. Proposed Cal Portland Cement Mining Co –

www.taiheiyo-cement.co.jp/english/index.html

a). Pima County has granted Cal Portland a flood plain use permit that would allow a haul road crossing of Davidson Canyon. Recently, the permit expired. More information regarding Pima County and the attempts to protect Davidson Canyon:

http://pima.gov/Mining/default.html

b. The Army Corps of Engineers is currently in the permitting process for a mine access road across Davidson Canyon for CalPortland.

3. Proposed Charles Seel Mining Co

(Mineral Lease is 11-112196) The Seel application is for 240 acres in Township 17 South, Range 17 East, Section 29 described as SENE NESW E2SESW N2SE SWSE W2SESE.

a) Haul road through the Davidson Canyon

4. El Paso Natural Gas Line

c. Crosses the Davidson Canyon south of I-10, close to the separate existing TEP Fort Huachuca and Western Area Power Administration lines.

b. Increased sedimentation

c. Increased Off Highway Vehicle use

5. Arizona National Scenic Trail
http://www.governor.state.az.us/dms/upload/NR_040909_Statement_Arizona%20Trail_3-31-09.pdf

a. Associated view shed issues.

b. Possible OHV entry to the Arizona Trail from additional utility access roads

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6. Kinder Morgan Liquid Products Pipeline

a. Crosses Davidson Canyon and Cienega Creek north of I-10

b. Increased sedimentation to Cienega Creek and Davidson Canyon

c. Increased OHV use

7. Bar V Ranch - Sonoran Desert Conservation Plan for Pima County. http://www.sonorandesert.org/properties/barv

8. Possible degradation to the Riparian Area- designated IRA (Important Riparian Area) http://www.pima.gov/cmo/sdcp/Riparian.html

a. Wildlife corridor, animal habitat

b. High biological significance area containing habitat for vulnerable species Gila topminnow, Gila chub, Mexican garter snake, lowland leopard frog, lesser long-nosed bat, and many migratory birds

b. Comments by Lynsey Gould, director of Conservation Outreach for the Rincon Institute at a Special Open Hearing and Vote in front of the ACC on August 18th 2008 regarding a another line near the recently proposed Sunzia alternatives.

"The Rincon Institute strongly advises against the proposed Vail area 138kV line project, specifically the Phase II line and the Mountain View substation by Tucson Electric Power that originates near Houghton Road and Interstate 10 and terminates near Marsh Station Road and Interstate 10. Established in 1991, the Rincon Institute is a nonprofit conservation organization located in southeast Tucson. We work to integrate community and conservation through the Rincon and Vail valleys. As it is currently proposed, the line cuts into open space identified as a biological core by the Sonoran Desert Conservation Plan. That is adjacent to the Cienega Creek preserve which is a protected and important riparian area. The addition of this proposed line does not support the Rincon Institute's mission and goals because of the adverse effects it would have on the ecological and natural resources of this important riparian area" (Pages 124-125 L 13-25 and L1-6)

c. State designated regionally critical wildlife corridor underneath I-10 which connects the Santa Rita, Empire and Rincon Mountain ranges

9. View shed impairment to Cienega Creek Recreational Areas.

http://vailaz.com/content.asp?contentid=528

10. View shed impairment to Colossal Cave Mountain Park.

http://www.colossalcave.com/welcome.html

11. Loss of ranching opportunities (large proposed right of way)

12. Two existing TEP 345 kv lines crossing Cienega Creek north of I-10.

a. Additional future lines in same corridor in TEP ten year plan.

13. Davidson Canyon Designated Outstanding Waters

http://pima.gov/Mining/C.Outstanding%20Waters%20desig%20for%20DC/press%20release/New%20release.pdf

a. Santa Cruz "Traditional Navigable Water" (waterways/tributaries)

b. This designation means that no activity that would cause permanent degradation of water quality would be permitted in the waterway.

c. Perennial Flowing Springs

14. Cienega Creek-Designated Outstanding Waters

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a. Davidson Canyon is the largest drainage into Cienega Creek

b. Perennial Flowing Springs

15. Diverse flora and fauna

a. Priority vulnerable species listed on the Sonoran Desert Conservation Plan

b. Threatened and endangered species or species or species of concern present.

16. Air Pollution

a. Dust from illegal OHV use on existing and future utility right of ways.

17. Noise Pollution

a. Noise from the extra high voltage conductors, particularly when wet. Existing and planned in Tucson area alternatives.

18. Possible cumulative economic property value loss with multiple and existing high voltage and extra high voltage lines.

Comments from a Special Open Hearing and Vote on August 18th 2008 regarding potential negative economic impact from another transmission line (Line Site Case 137) in the Cienega Corridor north and south of I-10.
http://www.tep.com/company/news/Vail/docs/081808_TEP_SOM.pdf

a. Resident of the neighborhood that would directly impacted by the proposed Tucson area Alternative Link F60: *"I know I have been repeatedly hounded with "You already bought a home with lines there." But those are the two lines that we knew were going to be there. We did not anticipate nor was it disclosed that we would have any other lines put through our neighborhood. I think this would be a travesty to our neighborhood to have these lines put in place.(Page 145 L9-16)*

b. Attorney for one intervener in the case: "*In conclusion, and apropos of the old adage, don't shoot the messenger because of the content of the message. In this instance Mountain View Ranch urges you to not ignore or discount the content of its message simply because the messenger is a developer." (Page 201 L15-19) (Link F110)*

c. Attorney for Tucson Electric Power: *"...you are absolutely right, there is an impact you issuing a CEC for Phase II. There is an absolute impact. There is an impact on the developer that he presumably has to disclose that to future buyers and his worry that there will be an impact on his ability to sell lots or how much money, profit he will earn from those lot sales."(Page 227, L 20-25, Page 228 L 1) (Link F110)*

d. ACC Commissioner Pierce: "*...And it probably has a greater impact on a smaller property owner who often that's everything to them. And for it to all of a sudden be devalued, somebody buys it at that and lo and behold it doesn't occur, somebody gets a windfall, I have a difficulty, I have difficulty reconciling that one issue." (Page 230, L1-7) (Links F-60, F110)*

19. Three to four current and platted housing developments and one new, regional, planned mixed-use destination development called the Passages of Tucson planned at or near the immediate I-10/ SR 83 interchange.

Has contact been made with the Passages Of Tucson as it would be directly impacted by the proposed "Tucson" area alternatives?

http://www.passagesoftucson.com/

20. Cienega Corridor-Endangered Rural Landscape: In 2004, the rural Cienega Corridor was recognized by the Cultural Landscape Foundation as one of the nation's top seven endangered cultural landscapes. *(Attached 18 and link below)*

http://tclf.org/content/working-landscapes-cienega-corridor

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B. Alternative Routes Outside of Pima County:

We recommend that BLM look at reasonable opportunities, routes and corridors north and east of Pima County. Such routes would take advantage of shorter stretches from Sunzia East along Interstate 60 west of Socorro or

Interstate 40 north of I-60. This would allow an invitation to the Navajo and/or Apache Nations for possible positive economic opportunities associated with the Sunzia project. Has any organization solicited comments from either Nation in regard to this project? These potential routes are reasonable, potential shorter (from Sunzia East to Pinal Central), and could have a higher level of buildability along existing transportation corridors closer to other existing 500kv systems. As such they deserve further consideration.

Additionally, we recommend that BLM analyze opportunities to co-locate the proposed Sunzia project with other planned merchant projects outside of Pima County, where a large portion of proposed benefit of the project is expected to occur. The individualized ten year plans of numerous utility providers can be found online at

http://www.westconnect.com/init_trans_provider.php

and the finalized Westconnect Transmission Planning Report, Errata and Final Plan. ***(attached 15-17)*** Of particular interest is the exhibit on page 89 titled Exhibit 17-1 in the Westconnect Planning Report

http://www.westconnect.com/planning_transmission_draft_2009_report.php

http://www.westconnect.com/filestorage/wc_trans_planning_2010_final_rpt_041910

We concur with the following comments submitted by TWS:

***3. Additional Information on Technologies that Could be Implemented to Minimize Impacts**

Transmission technology continues to improve, as do examples of successful implementation of new techniques to minimize impacts. These include but are not limited to undergrounding lines, advanced tower designs, using double circuits on compact monopoles and performing tower installation and maintenance with helicopters. Though these advanced approaches can increase technical and economic challenges for projects, they will only become more important to consider as transmission siting continues to grow more difficult and contentious. We note that CWG is submitting comments detailing additional examples of advanced technologies, and recommend BLM fully analyze opportunities to employ these technologies in the DEIS.

Recommendation: BLM should analyze potential implementation of advanced technologies to minimize impacts in the DEIS, and where appropriate, require that they be used.

***4. BLM Should Include a Robust Cumulative Impacts Analysis in the DEIS**

In order to properly site transmission projects, it is essential that a cumulative impacts analysis be conducted to fully evaluate the implications of this type of development on public lands. We are aware of several other projects planned in the SunZia project area. It is highly likely that there are other projects planned along the 460 mile route of which we are not aware. These projects will contribute to overall cumulative impacts to sensitive resources in this area, and while some of them are not being permitted by BLM, all reasonable efforts must be made to obtain information regarding their potential impacts and construction timing so that a full picture of cumulative impacts can be presented in the DEIS.

A comprehensive cumulative impacts analysis including the evaluation of such projects will strengthen the DEIS, including defining appropriate associated mitigation measures, and will contribute to more informed decision-making.

Recommendation: BLM should conduct a thorough cumulative impacts analysis for the DEIS, including but not limited to projects such as the planned I-10 bypass around Tucson and additional transmission lines planned for the area.

***5. BLM Should Analyze and Require Implementation of a Full Range of Off-site Mitigation Strategies, as well as On-Site Mitigation**

Though SunZia has the possibility of providing significant benefits by facilitating renewable energy development and thus reducing greenhouse gas emissions from electricity production, there will be significant environmental impacts from developing the project. These impacts should be avoided to the greatest extent possible by siting in areas with low resource values and minimized and mitigated to the best degree possible, using best management practices, the best available technology and innovative strategies for both on and off-site mitigation. For this EIS, we request development of a

CMG JUN 18 2010

mitigation component that provides for no net loss in habitat for wildlife species. We also request that this component be included in the preferred alternative in the DEIS.

In accordance with BLM policy, the following factors indicate that off-site mitigation is appropriate for this project:

- The SunZia SW Transmission Project is a major electrical right-of-way project, one of the types of large development projects for which offsite mitigation may be appropriate;
- The SunZia SW Transmission Project line is likely to affect resources and values of high public importance;
- The SunZia SW Transmission Project line may have permanent impacts that cannot be mitigated onsite.

a. BLM should implement a "no net loss" or a "net gain" requirement for resources and values

BLM should ensure that any loss of resources or values associated with the SunZia project is compensated with the addition and protection of equivalent or better resources and values offsite. For example, for high quality habitat which is relatively scarce or becoming scarce on a national basis or in the ecoregion section, BLM should ensure no net loss of in-kind habitat value. Additions of lands and resources should equal or exceed the value of any resources or values which are lost. BLM should also make a determination about the value of the habitat to be impacted and adopt direction for mitigation requirements for the specific habitat types impacted.

Additions could be gained through some combination of three primary mechanisms; however, requirements should ensure that the majority of mitigation efforts be focused on the first two mechanisms, with the highest priority given to acquisition:

- Purchase of additional private lands to be put in the federal estate under conservation management to guarantee the maintenance of the equivalent or better values and resources lost on the project site, or
- Additional conservation designations on existing federal lands which would permanently protect the equivalent or better resources and values lost on the project site, or
- Restoration and research efforts to improve the quality and quantity of equivalent resources and values off-site.
- If the selected route impacts water resources, mitigation for those impacts could be addressed by purchase of water rights

b. Off-site mitigation should be required to take place in the same ecoregion as the project site, and as locally as possible wherever feasible

The World Wildlife Fund defines an ecoregion as a "large unit of land or water containing a geographically distinct assemblage of species, natural communities, and environmental conditions."[2] Ecoregional health is critical for maintaining the health of individual ecosystems within the ecoregion. In addition to ensuring that off-site mitigation meets a "no net loss" requirement for resources and values lost on the project site and is tied to the species being impacted, BLM should require that mitigation take place in the same ecoregion as the project site, to ensure the continued health of the overall ecoregion. In situations where availability of private lands for purchase and addition to the federal estate under conservation protection is limited additional conservation designations on existing BLM land, as well restoration, research, and other mitigation measures, will be necessary.

As impacts from SunZia will vary significantly across the 460 mile project distance, wherever possible BLM should require that off-site mitigation be implemented on a far more local scale than simply in the same ecoregion as the impact.

Recommendations: BLM should analyze and require implementation of a full range of off-site mitigation strategies, including those outlined above, as well as requiring robust on-site mitigation.

***6.BLM Should Continue Coordination with the Department of Defense**

Military readiness, healthy natural resources, and the development of renewable energy are all essential to our national interests. Therefore, BLM should continue coordination with the Department of Defense (DOD) to identify potential siting

[2] http://www.worldwildlife.org/science/ecoregions/delineation.html

and mitigation solutions that could minimize impacts to the environment while also minimizing impacts to military missions. It is our understanding that some of the routes which appear to have the least environmental impacts have raised concern at some local military installations because of potential impacts to their mission.

Thorough analysis of potential mitigation opportunities is critical to define what the true impacts of SunZia will have on military missions. Renewable energy generation and transmission projects across the west are facing challenges with potential impacts to DOD, and BLM should proactively work with all stakeholders to identify solutions for individual projects as well establishing better coordination at the programmatic level.

Recommendation: BLM should continue coordination with DOD to identify potential siting and mitigation solutions that could minimize impacts to the environment while also minimizing impacts to military missions.

***7. BLM Should Provide All GIS Data Gathered as Part of the EIS Process for Download on the Project Website**

Significant and important GIS data are being gathered as part of the EIS process for SunZia, and it is critically important for the public to have access to it to help understand, analyze and make substantive comments on the proposed project.

Thank you for your thorough consideration of these comments.

Sincerely,

Elizabeth Webb

Elizabeth Webb
Empire-Fagan Coalition
PO Box 812 Vail, AZ 85641
www.empirefagan.org

** We concur with these comments submitted by The Wilderness Society.*

Attachments: *(With the exception of #13 and #18, the attachments have been included only in the email comments but we trust that all attachments will be investigated with equal diligence.)*

1. 1SunziaTEP137.pdf
2. 2SunziaTEP137.pdf
3. 3SunziaTEP137.pdf
4. 4SunziaTEP137.pdf
5. 5SunziaTEP137.pdf
6. 6SunziaTEP137.pdf
7. 7SunziaTEP137.pdf
8. 8SunziaTEP137.pdf
9. 9SunziaTEP137.pdf
10. 1SunziaTEP137SpecialHearing.pdf
11. 2SunziaTEP137SpecialHearing.pdf
12. SunziaTEP137ProjectAreaMap.pdf
13. SunziaBOSResolution.pdf
14. SunziaRosemontImpactsToDavidsonCienega.doc[1].pdf
15. Sunziawc_2010_planning_report_complete_030510.pdf
16. Sunziawc_2010_report_errata.pdf
17. Sunziawc_trans_planning_2010_final_rpt_041910.pdf
18. 18SunziaWorking LandscapesCienega CorridorThe Cultural Landscape Foundation.doc
19. 19SunziaDavidsonCanyonCoronadeTucson.pdf
20. 20SunziaDavidson Canyon Map.pdf
21. 21SunziaDavidsonResolution.pdf
22. 22SunziaModifiedMaVailArea.pdf
23. 23SunziaModifiedMapVailArea.pdf

JUN 18 2010

Attachment 18 Sunzia Empire Fagan Coalition Comments

RECEIVED
B.L.M.-MAILROOM
2010 JUN 14 PM 1:02
STATE OFFICE
SANTA FE, NEW MEXICO

LANDSLIDE: At risk

Working Landscapes: Cienega Corridor

Cienega Corridor (/content/cienega-corridor), Vail, AZ

Published June 6, 2004

The Cienega Corridor, just east of the city of Tucson, covers approximately 93,000 acres and provides both diverse cultural history and a natural wildlife corridor.

The corridor links Las Cienegas National Conservation Area and Sonoita Valley Acquisition Planning District in the south to Saguaro National Park East and Coronado National Forest's Rincon Wilderness in the north. The corridor is located in a major watershed formed by the Rincon, Whetstone, Santa Rita, and Empire Mountain ranges and is home to rural communities in the Rincon and Vail Valleys. The watershed feeds the Cienega Creek and Pantano Wash, supporting critically important wildlife habitat and corridors, open space, economic resources, and groundwater recharge.

As open space, the Cienega Corridor provides multiple recreation opportunities for the rapidly growing Tucson population, as well as a regional identity strongly based on Western rural lifestyle values. In addition, the area is biologically and geologically significant. It serves as a critical habitat to endangered plant and animal species; a wildlife movement corridor, specifically in a 'biological core area'; and a key watershed providing the City of Tucson with 20% of its groundwater recharge system. The corridor also has twenty one distinct soil and rare soil types, as well as numerous and unique limestone caves, known for endangered bat and rare invertebrates habitats.

JUN 10 2010

History

The corridor's unique landscape allowed for a rich and diverse cultural heritage. Perhaps 18% of the Rincon Valley and Cienega Creek area has been surveyed for cultural remains, yielding more than 200 prehistoric Hohokam sites spanning a period of 4000 years. Sobaiburi and Apache presence also has been documented.

Surviving historic sites reflect the westward population shift in the United States during the 19th century. These sites include ranch houses, mines, abandoned railroad communities, transportation routes, stagecoach stops, Civilian Conservation Corps sites, cemeteries, and the Saint Rita Chapel.

The number of transportation routes through the area is truly remarkable. These routes include a Spanish Colonial-era route between the San Pedro River Valley and Tucson; the Mormon Battalions, an 1846 road through Cienega Creek; the Fort Lowell Road and its various spurs; and the Butterfield Overland Mail Route. These various routes were used by numerous stagecoach companies including the Southern Pacific Mail Line, the National Mail and Transportation Company, the San Antonio and San Diego Stage Company, the Butterfield Overland Mail Line, the Tulley and Ochoa Freight Line and, in 1880, the Southern Pacific Railroad.

The township of Vail, "The Town Between the Tracks," is named after Walter Vail, who, along with his partners, formed the Empire Ranch in 1876. The ranch included most of Pima, Cochise, and Santa Cruz counties, and extended into New Mexico. When the Southern Pacific Railroad came through in 1880, oral tradition says that Mr. Vail built the small adobe building that still stands between the tracks to accommodate the transfer of freight and mail to the area. The building was deeded to the US Postal Service in 1900. The railroad also created many small communities. The remains of Pantano, one of the largest of these, are still visible along the tracks east of Vail.

Threat

Today the community is at a crossroads. The traditionally rural Rincon and Vail Valleys are experiencing a rapid growth rate that threatens the survival of the natural and cultural character of the community. Since 1990, Pima County has grown more than 26%. Projections are for an annual growth rate of 2% through 2020, adding an additional 416,000 new residents. Because of critical habitat designations for endangered species in northwest Tucson, it is expected that much of the future growth will occur in the Cienega Corridor, already surrounded by large-scale development.

EPA
JUN 18 2010

In addition, the majority of the land in Cienega Corridor is part of the Arizona State Trust Lands. The school districts are beneficiaries of the State Trust and receive funding from the sale of Trust Land. Over 1300 acres of State Trust Lands were sold in 2003, and pressure to divest additional acreage is increasing.

The need to protect Cienega Corridor is urgent. Action must be taken now to ensure that this corridor—culturally priceless and valued by its community, and an important wildlife corridor and watershed for Tucson 's water recharge system—is forever protected.

How to Help

Long time residents and newcomers are collaborating to preserve the natural and cultural resources of Cienega Corridor. The Cienega Corridor Conservation Council, comprised of small landowners, ranchers, developers, hunters, biologists, recreation users, public land managers and concerned citizens, is committed to retaining the rich, diverse identity that provides this community with a sense of place, even as a new urban landscape surrounds it.

Learn More

Emily Brott
Cienega Corridor Conservation Council
Sonoran Institute
7650 E. Broadway Blvd. Suite #203
Tucson, AZ 85710
tel. 520.290.0828 / tel. 520.290.0969
Emily@sonoran.org (mailto:Emily@sonoran.org)

POST YOUR OWN COMMENT
(/COMMENT/REPLY/2102)

EPA
JUN 18 2010

Attachment # 13 Sunzia
Empire-Fagan
Coalition
Comments

RECEIVED
B.L.M.-MAILROOM
2008 JUN 11 PM 1:03
STATE OF ARIZONA
SANTA CRUZ

RESOLUTION NO. 2008 - 174

IN SUPPORT OF THE JUNE 2008 DECISION OF THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE TO DENY A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY FOR PHASE II OF THE TUCSON ELECTRIC POWER VAIL AREA 138kV SYSTEM PROJECT

WHEREAS, the Cienega Corridor in Pima County received national recognition in 2004 as one of seven endangered cultural landscapes in America; and

WHEREAS, in accordance with the Sonoran Desert Conservation Plan, the Pima County Board of Supervisors has invested $9.1 million of the 2004 Conservation Acquisition Bond program towards conservation of the Cienega Corridor, acquiring and managing over 14,000 acres to preserve an important wildlife corridor and rare riparian habitat, which includes the Bar V Ranch and a significant portion of Davidson Canyon; and

WHEREAS, through the Sonoran Desert Conservation Plan, Pima County has long recognized the biological resource value in the Cienega Corridor and, as such, the comprehensive plan designates this area for low rural densities; and

WHEREAS, this area contains two of the highest designations under the Conservation Lands System policy, with possible development-related open space set asides of 80 percent or more if a land use change was requested and approved; and

WHEREAS, the Pima County Board of Supervisors passed a resolution in 2006 in which Pima County and the Regional Flood Control District entered into a cooperative agreement with the Cienega Corridor Conservation Council to conserve the natural and cultural values in the Cienega Corridor; and

WHEREAS, Phase II of the Vail Area 138kV system project, as proposed by TEP, would negatively impact the County owned Bar V Ranch and is in close proximity to the County's Cienega Creek Natural Preserve;

NOW, THEREFORE, BE IT RESOLVED, that the Pima County Board of Supervisors supports the June 4, 2008 decision of the Arizona Power and Transmission Line Siting Committee to deny a Certificate of Environmental Compatibility for Phase II of the Tucson Electric Power Vail Area 138kV System Project, and urges the Arizona Corporation Commission to uphold the Power Plant and Transmission Line Siting Committee's decision to deny Tucson Electric Power's Certificate of Environmental Compatibility for Phase II.

PASSED, ADOPTED AND APPROVED by the Board of Supervisors of Pima County, this 1st day of July, 2008.

Chairman of the Pima County Board of Supervisors

CMS
JUN 18 2010

page 1 of 2

Resolution 2008-117
Page 2

ATTEST:

Lori Godoshian
Clerk of the Board of Supervisors

APPROVED AS TO FORM:

Deputy Pima County Attorney

JUN 18 2010

page 2 of 2

From: JILL HENRY
To: NMSunZiaProject@blm.gov
Subject:
Date: 06/09/2010 10:48 AM

Dear Sirs,

I just read about plans that BLM has to build or extend power transmission towers near the Bosque Del Apache Wildlife refuge...one of the few heaven on earth places I know of. I take visitors there whenever I can, and to hear about this project really dismays me. Please reconsider to locate in another less fragile area. I will do everything I can to make sure the wildlife refuge stays the way it is.

Thank you.

Sincerely,

Jill Henry

From: Hubley, Barbara
To: NMSunZiaProject@blm.gov
Subject: Opposed to Power Lines
Date: 06/04/2010 12:27 PM

I am a frequent visitor to this area and am in full support of the message and opinion sent by the Friends of the Bosque del Apache National Wildlife Refuge below...

I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Sincerely,

Barbara Hubley, MPAH

Director, Clinical Support Services

Massachusetts General Hospital Imaging

32 Fruit Street, Blake-SB 0029, Boston, MA 02114

Tel: 617-724-1059 Fax: 617-724-0264

bhubley@partners.org

www.massgeneralimaging.org

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dispose of the e-mail.

From: Brendan Hughes
To: nmsunziaproject@blm.gov
Subject: Scoping Comments on Proposed SunZia Transmission Project
Date: 06/06/2010 05:17 PM

To whom it may concern:

My name is Brendan Hughes and I would like to provide scoping comments for the proposed SunZia transmission project. If this project proceeds, BLM should site this transmission line along existing highways and transmission corridors. There appears to be sufficient development already in the study area and the study area expansion to allow for this. Very few, if any, new roads are needed to build this line. If the power company needs to build a few tens of miles or 100 miles of extra line to accomplish this goal, then BLM should force this action to protect habitat and species from further fragmentation and degradation.

Additionally, BLM should acknowledge the inefficiency and cost of long-distance transmission projects and advocate for rooftop and car-park solar installations at the point of energy consumption. The substations of this proposed project could also have small solar installations to supplement their energy supply.

Thank you for your consideration.

Brendan Hughes
61093 Prescott Trail
Joshua Tree, CA 92252

Hotmail has tools for the New Busy. Search, chat and e-mail from your inbox. Learn more.

From: Laura Huntoon
To: NMSunZiaProject@blm.gov
Subject: Public comment on SunZia project route in Cochise County AZ
Date: 05/21/2010 03:47 PM

To Adrian Garcia, BLM Project Manager

After reviewing the proposed route for the SunZia project, I am writing to object to the proposed route.

The proposed lines to be located on federal, state, and private lands, up the San Pedro River to San Manuel would disrupt a delicate ecological system.

An acceptable alternative is to follow Interstate 10, where the ecological damage has already been done.

Laura Huntoon PhD AICP
University of Arizona
Director of Graduate Studies, Planning Program
School of Landscape Architecture & Planning

huntoon@u.arizona.edu
520-621-1004

June 8, 2010

Adrian Garcia
BLM
SunZia Transmission Line Project
P.O. Box 27115
Santa Fe, NM 87502-0115

epg
JUN 18 2010

To Whom It May Concern:

I am writing to voice my opposition to the proposed 500Kv power line. The E-80-110-120 route will cross my property near Gran Quivira N.M. This property has been in my family for three generations. My Grandfather and Father have farmed and ranched on this land for almost one hundred years. They have nurtured and protected this land for me and future generations of my family. I want to also state that I am completely against all other routing proposals which will negatively impact agricultural lands. We take great pride in having some of the last remaining property in the western United States which has remained aesthetically pleasing. Implementation of such an unsightly non-essential transmission line will eternally impact the available uses of this property as well as disrupt the natural ecological environments of wildlife.

I will under no circumstances let you or anyone defile this pristine property by crossing it with a 500Kv power line. There is a false impression that a corporation can purchase any right-of-way easement desired, however, monetary procurement will not purchase a change in ideology, heritage or tangible representations of my values. Greed is not a motivational force for me or my family. My family and I will fight all endeavors which negatively impact private property throughout the course of this project. Our property has remained unchanged for nearly a century and I will not allow some large corporation such as SunZia to pillage it for monetary gain and disappear as quickly as they appeared.

SunZia wants to make the case that this line will serve the greater good of mankind because it will transport needed power to Arizona and California. So while Arizona and California reap the benefits of New Mexico's energy we will be left with the hideous invasive culmination of steel and concrete in our pristine landscape. At this same time neighboring states pawn off the burden and embodiment of urban growth and unrelenting energy needs in the form of power lines to New Mexico. The bottom line is that SunZia is a business with the purpose of making money, which doesn't care whom they have to step on to achieve it.

SunZia has reaped the benefits of our government pursuing the falsehood of "green energy" at any cost even if it means taking away the rights of Americans. This bandwagon effect we see in relation to "green energy" has led to huge government subsidies which fund ill-fated forms of energy production which cannot self sustain, and again the American people lose, while corporations like SunZia, great rich quick. "Green Energy" is only designed to further inhibit the rights and freedoms of the American

people. Thankfully our private property rights still exist and I will use them to fight against this project indefinitely. The basis of American society is Private Property. This means that no entity, large or small has the right to interfere with the desires of citizens based on any form of defined need by the larger populations of society. Knowing that property rights are the cornerstone to American success and freedom serves as the basis for my argument against this project. Americas founding fathers believed that private property held by the citizens of this nation would be the key to success and the foundation of American society. They were absolutely correct, private property is the sole factor in our success and fueled our manifest destiny which ensured our position as the worlds superpower. Aside from the many reasons listed in my letter the basic fact remains that no one will coerce me into selling a right-of-way on my property that will forever change the beauty and unencumbered landscape of our property.

Sincerely,

Oral R. Connell
509 N. Summit
Mountainair, NM 87036

From: mollieisaacs
To: NMSunZiaProject@blm.gov
Subject: opposition to power lines near Bosque del Apache
Date: 06/04/2010 08:30 PM

I would like to state my opposition to the proposed study area expansion. It does not provide any new routes that would relieve the serious concerns regarding the wildlife and the economy of the community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. I am a member of the Friends of the Bosque, and concur with the position of the Bosque del Apache National Wildlife Refuge and many others in the community. I feel that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the thousands of birds, ducks, geese, cranes and others that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. I will continue to join in the efforts of The Friends of the Bosque to educate, motivate, and mobilize their 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Thank you.

Mollie Isaacs

3443 E. Lee Street
Tucson, AZ 85716
April 4, 2010

Mr. Adrian Garcia
Bureau of Land Management
SunZia Transmission Line Project
P.O. Box 27115
Santa Fe, NM 87502-0115

Received at BLM 4/8/10 AG

epc DATE RECEIVED 6/18/10

Dear Mr. Garcia:

From the BLM's announcement of March 31, 2010 I have learned that the BLM will hold a scoping meeting for the SunZia Southwest Transmission Project in Tucson on April 29, 2010 to fully consider routes through Tucson. Although it is difficult to comment on these without fully knowing what SunZia will present at the meeting, I greatly appreciate the opportunity to address those general routes already proposed. These include routes through central Tucson and down the Avra Valley west of the city. I am both a member of the Cascabel Working Group and a resident of Tucson, and thus the project interests me from more than one perspective.

As I understand, the Bureau of Reclamation has requested that the Avra Valley route be withdrawn because it conflicts with the Tucson Wildlife Mitigation Corridor associated with the Central Arizona Project. Therefore I focus more on central Tucson routes in what I include, although I comment on the Avra Valley route as well. In addition, I have considered the benefits of combining the SunZia Project with Tucson Electric Power Company's long-term transmission plans, and I include a discussion about this and additional thoughts about the project. These may not be appropriate for inclusion in the BLM's compilation of comments, and I will leave this to your judgment.

On March 10, 2010 several community and environmental organizations attended a meeting in Phoenix sponsored by the Sonoran Institute about transmission projects in general and the SunZia Project specifically. While these organizations oppose both the Aravaipa and San Pedro routes for the project, they want it to succeed through Tucson and have been working since then on their own plans to achieve this. These organizations would like to present their own plans and ideas at the scoping meeting, and I would like to ask that time be reserved for their presentations as well as those of the Cascabel Working Group. Please let me know if this is possible.

Thank you for your efforts to ensure full public comment on this project.

Sincerely,

Norman M Meader

Norman M. Meader
(520) 323-0092
nmeader@cox.net

Enclosures

Analysis of SunZia Central Tucson Routes
Norman M. Meader
Cascabel Working Group, March 22, 2010

Introduction

SunZia has proposed two potential routes through the Tucson area, one directly through central Tucson (two alternatives) and one to the west through Avra Valley (Figure 1). To determine where these routes would go in detail, I have examined topographic, BLM, and Forest Service maps; schematic maps of Tucson Electric Power's (TEP's) transmission corridors; and Google Earth images. From these I have verified current transmission corridors and located the positions of the Tucson substations (Vail, South, Bicknell, and Tortolita) that the SunZia route would encounter. Because the Bureau of Reclamation apparently will not permit the lines to cross its wildlife mitigation corridor in the Avra Valley, it appears that SunZia cannot use the Avra Valley route. Therefore I discuss only central Tucson routes here.

Overview

The two alternative central Tucson routes follow the north and south sides of I-10, respectively, into Tucson from the east to reach the Santa Cruz River corridor on the west side of Tucson (Figures 1, 2, and 3). From there they follow this corridor northward, which TEP uses for its 138-kV lines to bring power into Tucson from the Tortolita substation. Neither of these alternative routes follows a current high-voltage transmission corridor into Tucson, although such corridors do exist.

TEP does have 138-kV and 115-kV corridors that proceed west from the Vail substation that lead to the Santa Cruz River corridor, although a small detour would now be required around a corner of the San Xavier District of the Tohono O'odham Nation, which would not permit the project to cross. Following current high-voltage corridors would greatly reduce the cultural complexity that SunZia's routes currently traverse in reaching central Tucson and the difficult right-of-way issues associated them (Figure 3). TEP may not permit their use, however.

Santa Cruz River Corridor

A principal difficulty with a central Tucson route for both alternatives is the narrowness and adjacent cultural complexity of the Santa Cruz River corridor in downtown Tucson (Figures 3 and 4). To negotiate it with its 138-kV line, TEP has had to crisscross the channel with its lines and to locate some of its towers in the riverbed. It is tight in places, and using even a double-circuit transmission line here could be a significant challenge, I think.

In addition, in following the river, the routes traverse Pima County's Santa Cruz River Park, and although TEP's line is in this corridor, Pima County may not permit the corridor's use for additional lines. The section of the river corridor that is the most difficult to traverse is between West Congress Street to the south and Grant Road to the north, a distance of about two miles (Figure 4). It does not appear possible to negotiate this section without passing over some residential neighborhoods.

Union Pacific Railroad Corridor

The route north of I-10 follows the Union Pacific Railroad corridor from Vail into Tucson and then skirts the west side of Davis-Monthan Air Force Base where the corridor departs from I-10. The route then follows the combined Aviation Highway/Union Pacific corridor into downtown. The final section of this route before the Santa Cruz River is difficult to negotiate because of complex and intense cultural use. The Aviation Highway ends at Broadway Boulevard east of downtown, and from there the railroad corridor by itself narrows. The SunZia route would have to negotiate this narrower corridor for 1.5–2.0 miles and then exit it to cross I-10 somewhere between West St. Mary's Road and Speedway Boulevard (Figure 2 and 4).

After the route crosses I-10 it rejoins the alternative southerly route that reaches the Santa Cruz River via the Benson Highway corridor. At this point the recombined routes jog west away from the river and then proceed northward again before rejoining it, skirting the Arizona School for the Deaf and Blind on the west. It appears impossible for the lines to avoid passing over residential neighborhoods here in doing so.

Benson Highway Corridor

The alternative route south of I-10 follows TEP's 345-kV corridor from near Vail westward to the Vail substation (Figure 1). West of the Vail substation the route would open a new corridor along I-10, eventually intersecting the Benson Highway corridor near the Valencia Road/I-10 interchange. Between the Vail substation and the Benson Highway corridor the lines would pass through or skirt several new and expanding subdivisions.

From the Valencia interchange west, the route follows the Benson Highway corridor toward the junction of I-10 and I-19, where it crosses I-19 to reach the Santa Cruz River corridor. Along Benson Highway the route would also border residential neighborhoods in places. Cultural complexity increases toward the city's center along this route, as it does north of I-10, and the Benson Highway corridor ends about a mile east of the I-10/I-19 interchange at Park Avenue. Both of these factors would increase the difficulty of securing right-of-way along this route. Housing is especially dense immediately southeast of the intersection of I-10 and I-19 where the Benson Highway corridor is absent, although a rather narrow drainage canal does lead to the river through this neighborhood.

Conclusions

It is difficult not to conclude that the objections of Tucsonans to at least parts of these routes would be hard to overcome. Other routes that do not follow the Santa Cruz River corridor may exist, although I have not studied the Tucson metropolitan area sufficiently to know what is potentially available. Burying the lines in critical intervals may help allay objections to them, although this would introduce significant added technical complexity to that portion of the route and is far more expensive.

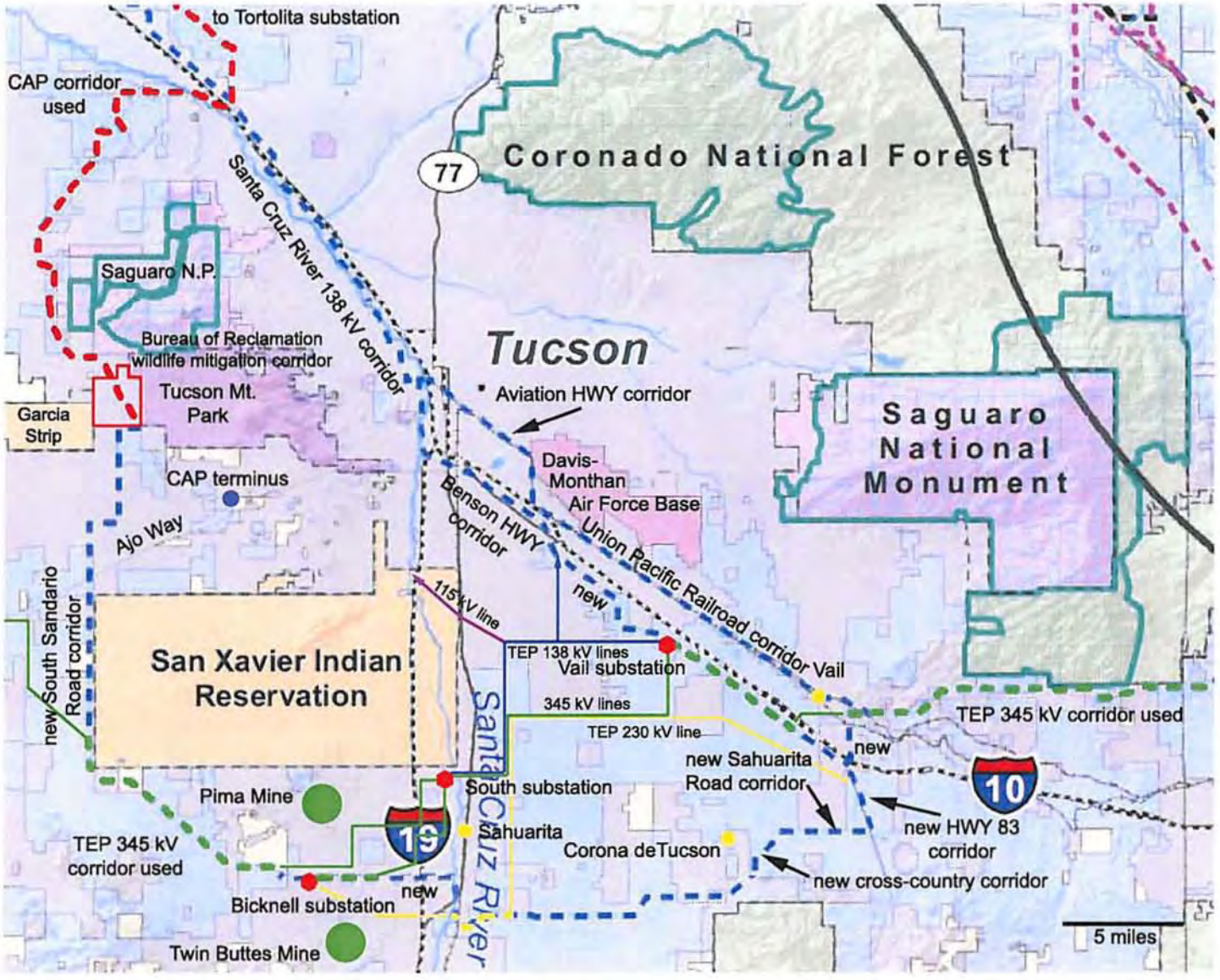


Figure 1. SunZia routes through and around Tucson are shown with with the heavy, dashed blue line. Route lines are green where they follow a Tucson Election Power 345-kV corridor, yellow where they follow a 230-kV corridor, and red where they follow the Central Arizona Project corridor.

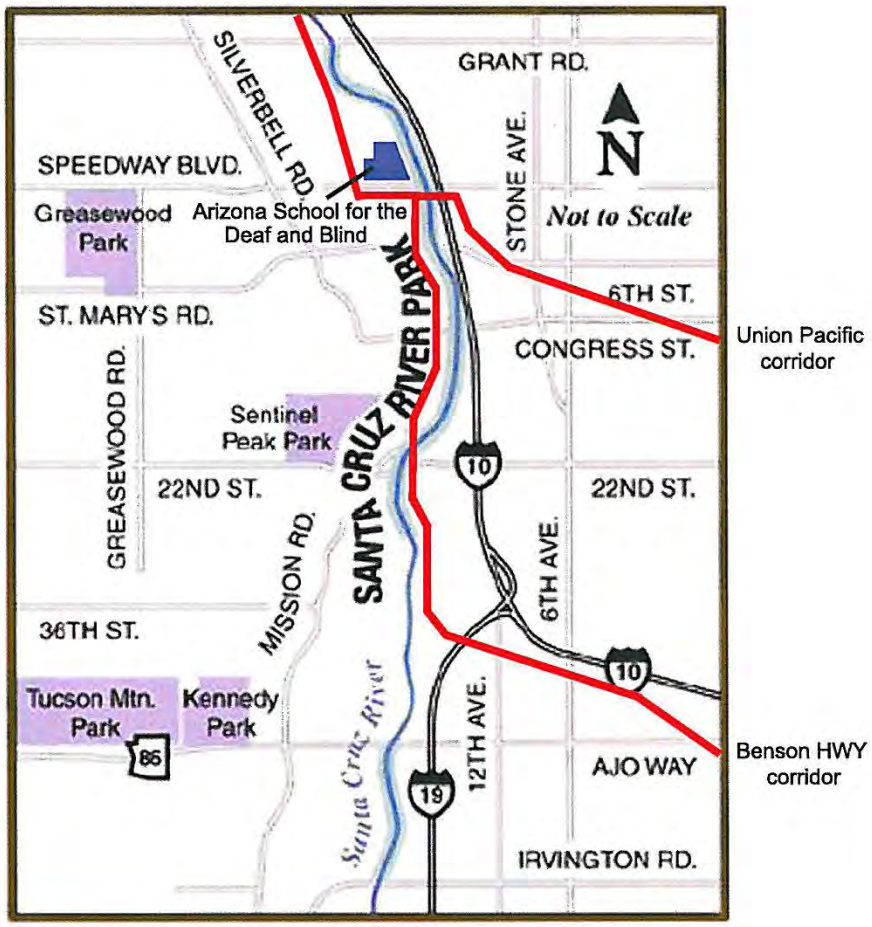


Figure 2. Approximate SunZia routes through central Tucson.

Figure 3. Approximate SunZia routes through central Tucson (from Google Earth; north is to the top). Transmission lines cannot follow these routes without substantially affecting residential neighborhoods in places. The Benson Highway corridor is to the south, and the Aviation Highway/Union Pacific Railroad corridor is to the north. (Note that I-10 is mislabeled.)

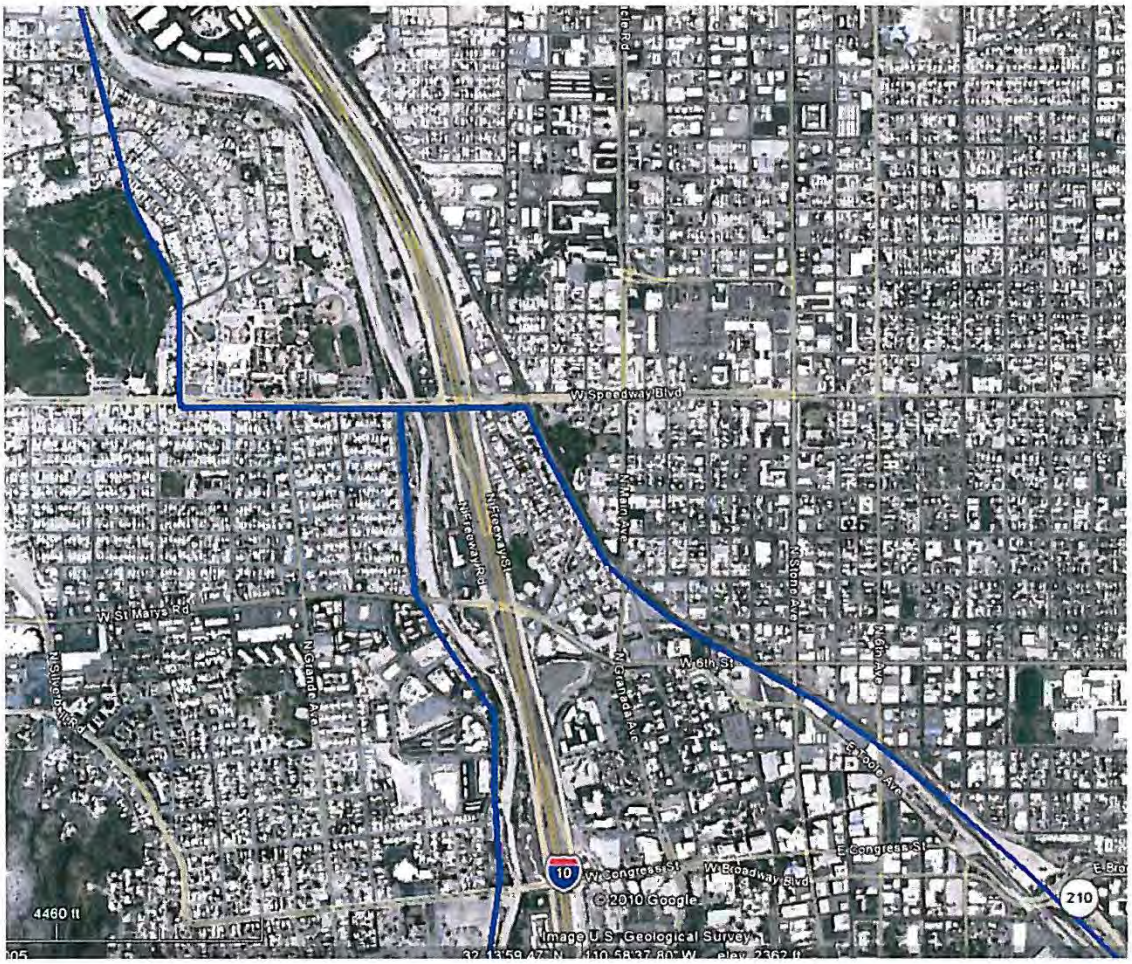


Figure 4. Closer view of proposed SunZia routes through downtown Tucson (from Google Earth; north is to the top). The route east of the river follows the Aviation Highway (route 210) and Union Pacific Railroad corridor into downtown. The route west of the river has crossed I-19 just south of the I-10/I-19 interchange about three miles to the south. Both follow the Santa Cruz River corridor northward from where they join. The most intense human land use along these routes occurs here, which presents the greatest problem to overcome.

Description of SunZia's Avra Valley (Western) Route
Norm Meader, Cascabel Working Group, April 3, 2010

Beginning note: Most of this was written before the Bureau of Reclamation requested that SunZia withdraw its Avra Valley route because the route would cross the Tucson Wildlife Mitigation Corridor associated with the Central Arizona Project. The Bureau established this corridor as a concession to complete the project, and associated legal agreements prohibit uses other than habitat preservation and enhancement.

The proposed route through Avra Valley west of the Tucson Mountains appears much easier to negotiate overall, although SunZia avoids some well-established transmission corridors to get there. Again, this may reflect a lack of awareness of them. Instead of following current corridors between the Vail and South substations, SunZia departs from TEP's east-west 345-kV corridor at Vail and heads south, following a new route that parallels Highway 83 from I-10 to Sahuarita Road.

From there the route turns westward and follows Sahuarita Road for 4 miles, where it turns south and cuts cross-country to avoid Corona de Tucson. It then apparently intersects TEP's east-west 230-kV line that provides power to the Bicknell substation west of I-19, following it westward. To cross the Santa Cruz River and I-19, SunZia proposes a short segment of new corridor to reach TEP's 345-kV corridors that transfer power between the Bicknell substation area and the South substation. The route then passes between the Pima and Twin Buttes Mines.

A significant portion of the above route would be new even though well-established corridors already exist, and it is not readily apparent why SunZia proposes it. The new route is not shorter, and TEP's established corridors cross flat, open country with few cultural features. Thus opening a new corridor seems disadvantageous. Any major difficulties with established corridors occur near Sahuarita and would affect the new route as well.

To reach the lower end of Avra Valley, SunZia follows a portion of TEP's 345-kV corridor northwestward from the Pima Mine area before departing from it along the western boundary of the San Xavier District of the Tohono O'odham Nation. It then follows principally South Sandario Road northward to reach the Central Arizona Project (CAP) corridor, which seems very advantageous to follow. The CAP route passes around the north end of the Tucson Mountains and then crosses back to the east side of I-10 before heading north past the Tortolita substation and the Saguaro generating station. The CAP provides a ready-made transmission corridor if arrangements can be made to use it.

Potential Conflicts With Landholders and Land-Use Patterns Along the Western Route

The portions of this western route that would require more negotiations, it appears, would be along Sahuarita Road where it would border residential (although lower-density) areas; near Sahuarita where the route must cross the Santa Cruz River and I-10; the section along South Sandario Road between the San Xavier District of the Tohono O'odham Nation and the Central Arizona Project; and the section near Marana where the CAP passes beneath I-10.

The cross-country section between Sahuarita Road and Sahuarita traverses the "Southlands," an area that has been well studied as part of Pima County's comprehensive Sonoran Desert Conservation Plan. The project may encounter some conflict here even though the route does not disturb human settlements. Near Sahuarita, SunZia's route would cross agricultural lands on the east side of I-19, while on the west side it would bisect a low-density subdivision. Moving the route north or south to an existing corridor would avoid this latter conflict, however.

The new segment along South Sandario Road in Avra Valley would border or traverse agricultural land and low-density housing in places, and near Marana the route would cross agricultural lands. The greatest conflict with private land owners and housing would occur along South Sandario Road north of Ajo Way (Highway 86). Most of this conflict could be avoided if the route turned east at Ajo Way (coming from the south) and followed the south side of Ajo Way to the southern terminus of the Central Arizona Project, which is just north of the highway. Here a lower-voltage power line crosses Ajo Way to reach the CAP. This alternative route would be 4+ miles longer, however.

Another concern in Avra Valley would be the route's close approach to Saguaro National Park and Tucson Mountain Park. Past development projects have been strongly opposed because of their potential impact on these parks. The route would also cross the Bureau of Reclamation's Wildlife Mitigation Corridor, which was established as a concession to complete the Central Arizona Project.

It is uncertain whether the line would concern the Tohono O'odham people of the Nation's San Xavier District. A TEP 345-kV line currently follows the district's boundary around its southwestern corner for approximately four miles. This line detours around the district even though a previous lower-voltage power line crosses it, indicating that the Tohono O'odham did not want the newer line on their land.

Conclusions

Overall this westward route appears to present far fewer obstacles than a central Tucson route. It is much more open and could accommodate two transmission lines much more easily. Conflict with cultural features and land ownership would be greatly reduced as well. The route would be somewhat longer, but this would be offset, at least partly, by fewer right-of-way issues and lower legal costs.

The SunZia Project and Tucson Electric Power Company's Needs
Norm Meader, Cascabel Working Group, April 1, 2010

The more that I have studied the SunZia Project, the more I have come to appreciate its potential importance to Tucson and Pima County. Both would be major recipients of the energy that these lines would carry, which would greatly reduce Tucson Electric Power Company's problems in delivering power to new growth areas on the east and south sides of Tucson. Routing the project directly through Tucson would help facilitate this.

Currently, to provide this power TEP's ten-year plan relies on constructing 500-kV or 345-kV transmission lines down the San Pedro Valley east of Tucson, down the Avra Valley west of Tucson, and from the Westwing substation northwest of Phoenix to the South substation south of Tucson. The latter would cross two national monuments and the Tohono O'odham Nation (Figure 1). In addition, TEP would construct two 345-kV lines into the city from the San Pedro Valley and has also tried to permit a double-circuit 345-kV line from the South substation to the border town of Nogales, apparently intending to import power from Mexico for the Tucson metropolitan area. This latter project itself currently cannot be completed because of a lack of agreement between the permitting agencies involved. All of these routes appear socially and environmentally unrealistic in some way now, which accentuates the potential importance of the SunZia Project to Tucson.

Because of the magnitude of energy that TEP seeks to provide for Tucson's growth, it seems plausible to simply terminate one of SunZia's 500-kV lines at the Vail substation southeast of Tucson and to focus on routing a single line through or around the city (Figure 2). This would make completing the project through Tucson more feasible. Terminating the line here could be complemented by having TEP arrange energy swaps with current or proposed Tucson power providers to the north.

SunZia already plans to build its own 345-kV line from the Winchester substation to the Vail Substation to deliver power directly to Tucson (shown in its presentation to the WECC on February 10, 2010), and dedicating one of the 500-kV lines to Tucson and southeastern Arizona in its place thus seems reasonable. Overall, this 500-kV line could take the place of several extra-high-voltage transmission projects in TEP's ten-year plan and potentially save the company hundreds of millions of dollars in transmission line costs (see Table 1 for a cost comparison). The question is whether TEP and SunZia would feel comfortable in altering the project in this way.

If a central Tucson route is seriously considered, TEP would need to be integrally involved in finding a solution, as perhaps only TEP knows the city and potential corridors well enough to find a workable route for the lines. In addition, if TEP were to become a much greater beneficiary of the project's power, it would seem logical for TEP to become a larger stakeholder in the project and to contribute more funding to it.

If SunZia brought the project into Tucson this way, it would be of tremendous benefit to the congressional districts of both Representatives Giffords and Grijalva. It would secure a large supply of needed energy for their districts, the power would be from a renewable source, and it would be brought into Tucson with minimal impact on sensitive environmental areas. To make the project fully acceptable would require innovative approaches to routing the remaining line through Tucson, one that would potentially require placing the line underground in critical areas.

Reconfiguring the project this way should make Representatives Giffords and Grijalva much more receptive to supporting it, and if it were successful, this could be a tremendous coup for them both. This might motivate them to advocate for the project rather that merely oppose routes for it, and they might possibly help with regulatory hurdles and work to provide financial incentives such as tax breaks. These financial incentives would help offset the added costs of a Tucson route and potentially make SunZia more open to seriously considering one.

Table 1. Potential cost savings achieved by combining Tucson Electric Power Company's long-term extra-high-voltage transmission line plans with the SunZia Southwest Transmission Project.

Tucson Electric Power Company Proposed Lines		
Lines Removed	Length (miles)	Cost in $M*
Tortolita to Winchester 500-kV	80	$160
Tortolita to South 345-kV	68	$102
Winchester to Vail 345-kV (line 1)	40	$60
Winchester to Vail 345-kV (line 2)	40	$60
Total miles and cost	228	$382
Other long-distance HV lines to consider removing		
Westwing to South 345-kV	178	$259
South to Gateway 345-kV (double circuit)†	60	$120
Total miles and cost	238	$379

SunZia Southwest Transmission Project Proposed Lines		
Lines Removed		
Winchester to Tortolita 500-kV (line 1)	80	$120
Winchester to Tortolita 500-kV (line 2)	80	$120
Tortolita to Pinal Central 500-kV (line 2)	38	$57
Winchester to Vail 345-kV**	40	$60
Total miles and cost	238	$357
Lines Added		
Winchester to Vail 500-kV (line 1)	40	$60
Winchester to Vail 500-kV (line 2)	40	$60
Vail to Tortolita (I-10 distance) (line 1)§	43	$206
Total miles and cost	123	$326

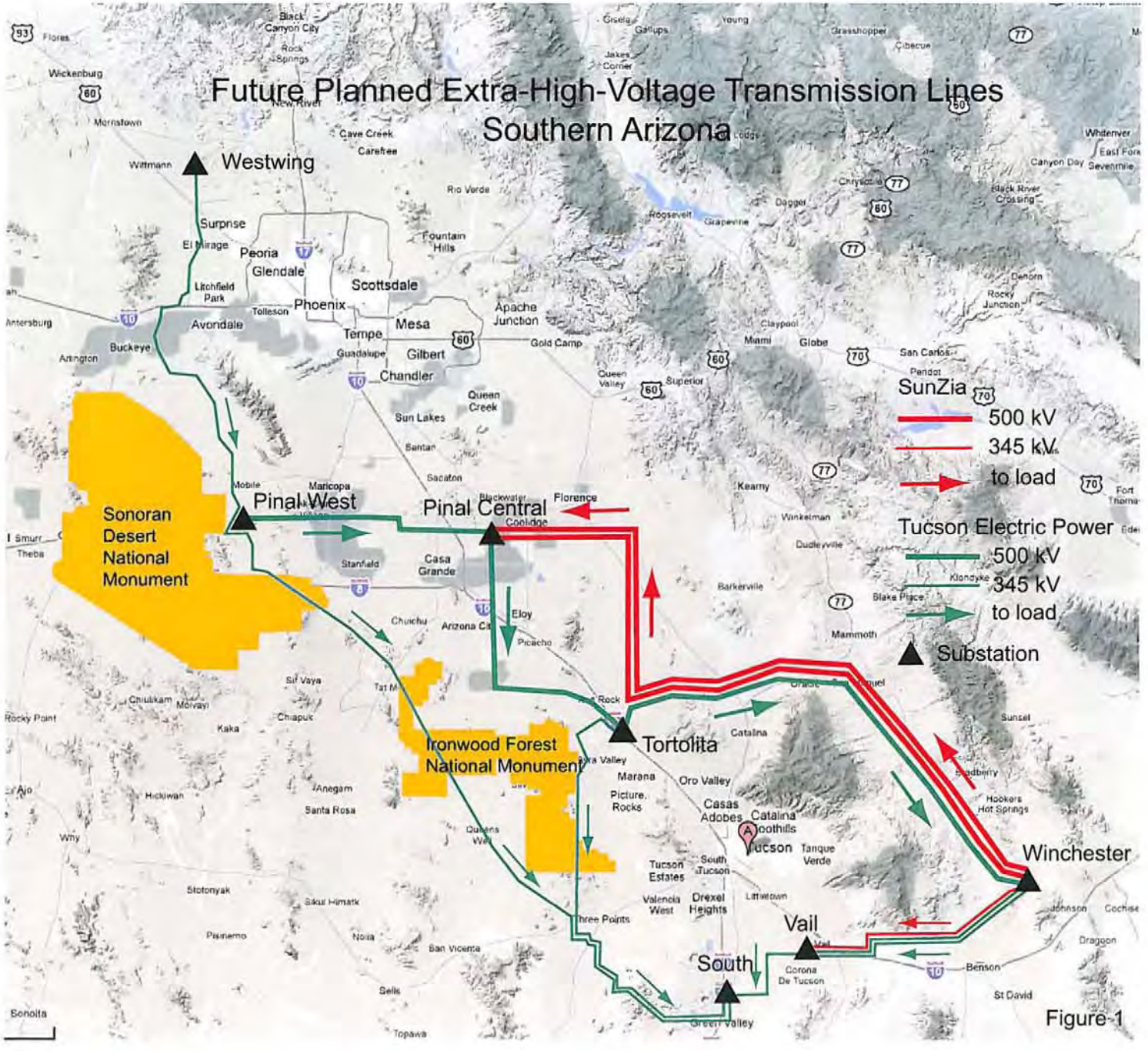
*Costs are estimated at $1.5M/mile for 345-kV lines, $1.5M/mile for 500-kV lines run together, and $2.0M/mile for 500-kV lines run alone.

†The cost of the 345-kV double-circuit line between the South substation and the proposed Gateway (Nogales) substation is estimated at $2.0M/mile.

§The cost of the 500-kV line between Vail and Tortolita is estimated at $2M/mile for 28 miles (above-ground portion) and $10M/mile for 15 miles (underground portion). Increasing the underground mileage to 20 miles would increase the cost of this segment to $246M and the total cost to $366M.

**This line is shown on SunZia's presentation to the Western Electricity Coordinating Council on February 10, 2010 and may be the same as the second 345-kV line that TEP proposes into Tucson. Neither SunZia nor TEP acknowledges this, however.

Note that the distance between the Winchester and Tortolita substations following I-10 through Tucson is ~83 miles, while the distance between the substations following a San Pedro Valley route is ~80 miles, not significantly different.


Future Planned Extra-High-Voltage Transmission Lines
Southern Arizona
Westwing
Pinal West
Pinal Central
Tortolita
Substation
Winchester
Vail
South
SunZia
500 kV
345 kV
to load
Tucson Electric Power
500 kV
345 kV
to load
Sonoran Desert National Monument
Ironwood Forest National Monument
Surprise
El Mirage
Peoria
Glendale
Scottsdale
Phoenix
Litchfield Park
Tolleson
Avondale
Tempe
Mesa
Gilbert
Chandler
Guadalupe
Buckeye
Arlington
Apache Junction
Gold Camp
Fountain Hills
Rio Verde
Queen Creek
Sun Lakes
Casa Grande
Stanfield
Eloy
Picacho
Florence
Coolidge
Blackwater
Maricopa
Mobile
Wickenburg
Morristown
Wittmann
Cave Creek
Carefree
Black Canyon City
Rock Springs
Gisela
Gallups
Young
Grasshopper
Cibecue
Jakes Corner
Roosevelt
Grapevine
Dagger
Chrysotile
Claypool
Miami
Globe
Superior
Queen Valley
San Carlos
Peridot
Kearny
Winkelman
Dudleyville
Barkerville
Klondyke
Blake Place
Mammoth
Whitenver
East Fork
Canyon Day
Sevenmile
Black River Crossing
Denorn
Rocky Junction
Fort Thomas
Sunset
Bradbury
Hookers Hot Springs
Catalina
Oro Valley
Marana
Picture Rocks
Casas Adobes
Catalina Foothills
Tucson
Tanque Verde
Tucson Estates
South Tucson
Valencia West
Drexel Heights
Littletown
Three Points
Corona De Tucson
Green Valley
Benson
St David
Johnson
Cochise
Dragoon
Sells
San Vicente
Nogales
Pisinemo
Stotonyak
Sikul Himatk
Topawa
Santa Rosa
Anegam
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Arizona City
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Tat M
Chukkam
Morvayi
Rocky Point
Ajo
Sonoita
Smurr
Theba
Antersburg
Arrington
Flores
Black Canyon City
Rock Springs
Cave Creek
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Wickenburg
Morristown
Wittmann
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Fountain Hills
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El Mirage
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Scottsdale
Phoenix
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Guadalupe
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Arlington
Apache Junction
Gold Camp
Queen Creek
Sun Lakes
Santan
Sacaton
Casa Grande
Stanfield
Eloy
Picacho
Coolidge
Florence
Blackwater
Maricopa
Mobile
Tortolita
Catalina
Oro Valley
Marana
Picture Rocks
Casas Adobes
Catalina Foothills
Tucson
Tanque Verde
Winchester
Vail
South
Tucson Estates
South Tucson
Valencia West
Drexel Heights
Three Points
Corona De Tucson
Green Valley
Benson
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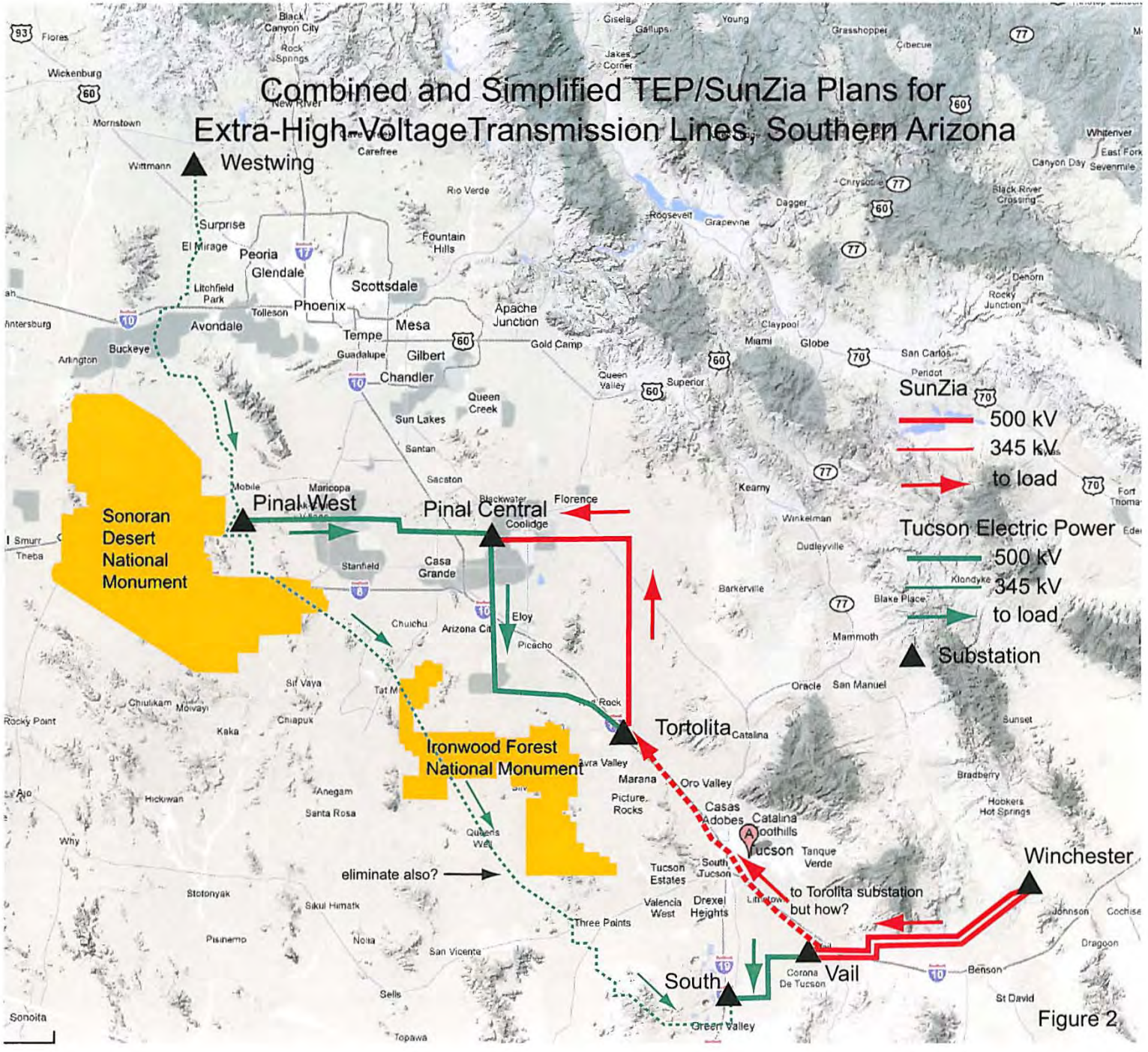
Figure 1


Combined and Simplified TEP/SunZia Plans for
Extra-High-VoltageTransmission Lines, Southern Arizona
Westwing
Pinal West
Pinal Central
Tortolita
South
Vail
Winchester
Substation
Sonoran Desert National Monument
Ironwood Forest National Monument
eliminate also?
to Torolita substation but how?
SunZia
500 kV
345 kV
to load
Tucson Electric Power
500 kV
345 kV
to load
Phoenix
Scottsdale
Tucson
Casa Grande
Florence
Eloy
Picacho
Marana
Oro Valley
Green Valley
Benson
Figure 2

SUNZIA PROJECT DISCUSSION
Norm Meader, Cascabel Working Group, April 1, 2010

A Tucson Scoping Meeting and Difficulties With a Central Tucson Route

In evaluating the routes that SunZia has proposed through the city of Tucson, I doubt that the Benson Highway corridor or the Union Pacific Railroad corridor are realistic possibilities for above-ground transmission lines because of the cultural density and complexity that they eventually encounter, especially closer to central Tucson (see the enclosed analysis of central Tucson routes for diagrams). The routes through downtown Tucson become so culturally complex that SunZia itself must feel that they are not genuinely realistic or viable for standard above-ground towers and lines. With this in mind, SunZia may feel that a Tucson scoping meeting would accomplish little toward resolving a route for the project using conventional technologies.

It may be possible, however, to use such a meeting so that environmental and community organizations can offer their own ideas on how to complete the project, something many want to do. Exchanging ideas could help both sides resolve issues. Although it may seem unlikely to SunZia that these organizations could propose a workable solution with their limited expertise, people are seeking outside technical advice to help them and genuinely wish to try. If any Tucson solution is possible, it will clearly have to be innovative and unconventional. It will also require Tucson Electric Power Company's help and cooperation to find one, I believe. TEP knows the city and its corridors best and could provide perhaps the best guidance on routes, however unlikely finding one may initially seem.

Besides the strong objections from Tucson residents that above-ground lines would likely raise, using a conventional steel-tower construction appears physically unrealistic in places, especially with erecting two sets of lines side by side. Burying the lines in critical parts of the route thus appears necessary, which would significantly increase costs and could be a deterrent to SunZia, although this may be a necessary compromise to make the project succeed. If this is considered, a corridor would be needed across or around the city similar to that for a pipeline. Because of right-of-way limitations through Tucson, future expansion of this transmission corridor as SunZia plans could be limited.

Involvement and Support by Environmental Groups for the Project

On March 10, 2010 a workshop was held at the Sonoran Institute in Phoenix on electrical transmission projects in general, ending with a discussion of the SunZia Project. Representatives from the following organizations attended: Arizona Public Service Company, Arizona Renewable Transmission Task Force, Arizona Game and Fish Department, Sonoran Institute, the Wilderness Society, Defenders of Wildlife, Desert Watch, Friends of Sonoran Desert National Monument, National Parks Conservation Association, Natural Resources Defense Council, Sierra Club, Sky Island Alliance, Tucson Audubon Society, and Cascabel Working Group.

It was the consensus of the environmental organizations involved that SunZia must not follow an Aravaipa or San Pedro route, but at the same time they feel it important to assist SunZia complete

its project. This is not because the project will carry predominantly renewable energy per se but because SunZia's approach represents a major paradigm shift in siting such projects, that is, bringing environmental, governmental, and industry stakeholders together from the very beginning to seek a solution. At this point, a Tucson route appears the only environmentally viable option to these groups, even though everyone realizes that this will be incredibly difficult to achieve.

To help find a solution, the Sonoran Institute has offered to convene a meeting of non-stakeholders (i.e., individuals unassociated with environmental groups or SunZia) who have technical expertise in the siting and construction of such projects. They hope this would provide further objective ideas to help complete the project. If any solution is found for a Tucson route, it will have to be creative and unconventional.

The 500-kV lines proposed for the project are the largest size currently built in the U.S. and do not readily lend themselves to being routed through densely populated areas, especially two lines together. Alternatives that the above groups are considering include burying the lines in critical areas and running both lines together as a double-circuit on a single set of towers. In addition, using monopoles as Tucson Electric Power Company is doing for its new 500-kV line between the Pinal Central and Tortolita substations would help conserve space.

These groups hope to present their own constructive alternatives at a possible Tucson scoping meeting and are working on them. Although it may seem improbable that the project can be completed through Tucson, people want to find a solution if possible. If a Tucson route is taken seriously, it will also help greatly if Pima County and the City of Tucson provide input on proposed routes and offer guidance on any possible solutions.

Potential Legal Challenges

The three principal alternative southern Arizona routes (excluding central Tucson) chosen for the SunZia Project – Aravaipa, San Pedro Valley, and Avra Valley – were also selected three years ago as possible routes for an I-10 bypass around Tucson. All three were vehemently opposed by residents and conservationists, who now find themselves facing the same challenges again. These three routes have reemerged as the only prospective paths for another large-scale development project.

In assessing SunZia's initial routes for the project, the Wilderness Society and associated environmental organizations focused on the impact of crossing the Galiuro Mountains south of Aravaipa Canyon without providing an assessment of the San Pedro Valley as well. This, I think, led SunZia to believe that the San Pedro Valley was less sensitive environmentally and a more plausible route for the project. In reality, the San Pedro Valley is much more prominent nationally for its conservation value than the Aravaipa area, and the valley is the focus of continued protection efforts by national organizations.

If either the Aravaipa or San Pedro route were chosen, environmental groups would, I believe, legally challenge this no matter what goodwill SunZia has worked to achieve with the environmental community. Choosing either route is not merely a matter of angering someone

and then proceeding with the project. Doing so would likely result in a protracted legal battle that would delay the project. These groups would also likely appeal any ruling against them to progressively higher courts.

Concluding Thoughts

As human settlement and land use intensifies in the U.S., it is becoming increasingly difficult to route large-scale transmission projects because of strong social objections, even in remote areas. This represents perhaps the greatest challenge to establishing new corridors and transmission capacity. Technical innovation is greatly needed merely to allay and surmount these social difficulties, especially in the current era of much-needed transmission expansion.

From: Karl Jacoby
To: NMSunZiaProject@blm.gov
Subject: Transmission Lines
Date: 06/05/2010 02:00 PM

Dear Sir/Madam:

I write to register my deep concern about the possibility of transmission lines from the Sun Zia Project being run through Aravaipa Canyon in Arizona. This is an extremely rare and fragile ecology. Moreover, it is a site of unparalleled historical import, containing the remains of O'odham villages, a U.S. Army fort, and several Western Apache sites (including the site of the Camp Grant Massacre, one of the most important, if less known, historic sites in Arizona history). It would be a tremendous tragedy to damage this location any further.

Sincerely,

Karl Jacoby

****
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Professor
Department of History
Brown University
Box N
Providence, RI 02912

Phone: (401) 863-2131
Fax: (401) 863-1040
****

Shadows at Dawn website: www.brown.edu/aravaipa

From: Kc5gei@aol.com
To: NMSunZiaProject@blm.gov
Subject: kc5gei
Date: 06/06/2010 03:43 AM

Hi,
You have not been sending me updates by email why?
My comments about sunzia project are still the same.
Stay away from Windmill Ranch Subdivision as far away as possible.
BLM is showing on site that you are trying to restore NM. If that is true prove it and keep Sun Zia Project away from Windmill Ranch Subdivision. If BLM is trying to restore wildlife in NM, stop the hunting and the slaughter of the wildlife on Windmill Ranch Subdivision. Last one was requested by Jim Grider on Dec. 12,2006. A helicopter came out here killing oryx along with many other animals and running them away. Past week or two been hearing the oryx again, rabbits just returned this past winter, a few deer,...etc. Do not let the Sun Zia project come any where near Windmill Ranches Subdivision in Lincoln county Please. There was no choice of routes to vote on your site as neighbors had mentioned in emails. So I vote for any that are fartherest away from Windmill Ranch Subdivision.
Please explain why you dropped me from your mailing list.
Thank you,
Karen Wehnau

DATE RECEIVED
6/18/10

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed high-power transmission route through Arizona's wilderness areas, including both Aravaipa and San Pedro. Our wilderness areas should not be sacrificed in order to provide an energy source for other states. Arizona residents will benefit minimally from this plan, while bearing the brunt of the environmental impact.

SunZia needs to abandon any plan to construct transmission lines through the Aravaipa (or any other Arizona wilderness area). Routes through Tucson using existing infrastructure corridors are available and would have far less impact on the environment. It is an outrage that a so-called "green" energy project would destroy millions of acres of pristine Arizona wilderness.

Signature: _____ Date: June 6, 2010

Name & City: Mark H. [illegible]
San Manuel AZ

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Signature: _____ Date: 06/06/16

Name & City: DAVID [illegible]
SAN MANUEL

From: sue kelly
To: NMSunZiaProject@blm.gov
Subject: SunZia Transmission Line Project
Date: 06/10/2010 05:30 PM

Dear Mr. Garcia,

As a resident of Southern Arizona and Tucson, I have to express my deep concerns about some of the proposed routes for the SunZia Southwest Transmission Project. I am especially distressed that the route through the wilderness area in the Aravaipa area seems to be the preferred route at the moment. The fact that this area has fewer human residents and thus you receive fewer "NIMBY" complaints does not make this area less worthy of your protection. (The route through the San Pedro area would also be very undesirable, but as that area has a strong advocacy group and seems to have been removed from serious consideration, my comments will focus on the Aravaipa route.) The Aravaipa area is a part of a large, relatively undisturbed (and roadless) wilderness area. It is a migration route and haven for many animals that would not thrive with much human encroachment. Not only would the construction and presence of the power lines cause substantial disturbance in itself, but it would open a much easier path for subsequent destruction such as that which would be caused by ATVs. Such traffic would be unavoidable once the access road and clearing that would necessarily accompany the power lines are built. Humans who currently have access to this area by backpacking, tend to have a much greater respect for and a much lower impact on nature than those who might gain entry on motorized vehicles. Once desecrated, it will be much more difficult to successfully oppose further development and roads in the area, and another pristine wilderness area and much of its fauna will be lost.

I was initially encouraged that SunZia seemed to be considering alternate routes through the Tucson area until I realized that they seem to have put very little effort into finding a Tucson route that might actually work. A viable route through the Tucson area is the ideal solution since Tucson Electric Power seems very willing to cooperate, and since TEP has need of a new transmission line in the near future anyway. SunZia and TEP could plan a joint venture which would satisfy both of their needs. If the Tucson routes proposed by SunZia are not acceptable, they need to consider others, such as that proposed by the Cascabel Working Group, or go back to the drawing board, this time in cooperation with TEP and others in Tucson.

It seems ironic that a project that is promoting itself as “green”; a conveyor of renewable energy, would be willing to sacrifice pristine wilderness areas. The reality is that this is just a business whose primary motivation is profit, and who should not be permitted to choose a route such as those passing through either the San Pedro or the Aravaipa region, which would be so environmentally damaging, simply because it is less expensive. While I am a strong advocate of green energy, I believe that it should be planned in a way that minimizes environmental impacts. I understand that a certain amount of infrastructure needs to precede green energy production facilities, but there should be more than just the potential of such production in an area before using it as a justification for a project such as this. Listening to the current controversy about whether solar-thermal energy plants are really practical in areas where water is a very limiting resource, makes me wonder if the large renewable energy sources that they are predicting for Southern Arizona should or will actually be constructed in these areas. If not, the only justification for passing the transmission line through Southern Arizona is to tie into their planned natural gas power plant in Bowie. While obviously much cleaner than coal, natural gas still has a huge carbon footprint, and hardly qualifies as “green

energy”. That said, I would not object to a route which would serve the Tucson area in cooperation with TEP rather than avoiding it, but I strongly oppose a route that both sacrifices our wild areas and avoids Tucson, especially since Tucson will need such a transmission line in the near future anyway.

Thank you for considering my comments.

Sincerely,

Suzanne Kelly
1834 N Sidney Pl
Tucson, AZ 85712

From: henry kline
To: NMSunZiaProject@blm.gov
Subject: SunZiaProject
Date: 06/04/2010 10:39 PM

Gentlemen
I'm writing to request that you strongly consider the proposal by the Friends of the Bosque to locate new power lines away from the Bosque. We visit it yearly, and consider it a real treasure which has helped restore the Sandhill crane population, which had been devastated by previous habitat loss and encroachment.
Sincerely, Henry M. Kline Jr.

DATE RECEIVED
6/18/10

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June 6, 2010

Signature Date

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06/06/10

Signature Date

Name & City: DAVID [illegible]
SAN MANUEL

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Suzanne J. Perry 6-5-10

Signature Date

Name & City: SUZANNE J. PERRY
ORACLE

DATE RECEIVED 6/18/10

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Barbara Walss 6-5-10

Signature Date

Name & City: BARBARA WALSS
ORACLE, AZ

From: Sandra Knox
To: NMSunZiaProject@blm.gov
Subject:
Date: 06/02/2010 02:12 PM
Attachments: SunZia_objection_letter.doc

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

_Sandra Knox 6/2/10_____
Signature & Date

_Sandra Knox, Winkelman, Az_____
Name & City

To Whom It May Concern:

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Evaline J. Auerbach 6/5/10

Signature Date

Name & City: Evaline J. Auerbach
Oracle, Arizona

To Whom It May Concern:

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Casey Egan 6-5-10

Signature Date

Name & City: Casey Egan
Oracle, AZ

From: jeff laird
To: NMSunZiaProject@blm.gov
Subject: WREZ Qualified Resource Area Map
Date: 04/25/2010 05:11 PM

Can I get more information on the designation of the Wind Resource area on the above referenced map which is located approximately east of Albuquerque, NM between Galisteo, NM and Carrizozo, NM? Who designated this? What are the plans for transmission lines in this area?
Thanks,
Jeff Laird
124 Mission Hills Rd., Estancia, New Mexico 87016 USA
TEL 505-384-1336 FAX 505-384-5290 *JLaird@LairdCo.com*

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed high-power transmission route through Arizona's wilderness areas, including both Aravaipa and San Pedro. Our wilderness areas should not be sacrificed in order to provide an energy source for other states. Arizona residents will benefit minimally from this plan, while bearing the brunt of the environmental impact.

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Casey Egan 6-5-10

Signature Date

Name & City: Casey Egan
Oracle, AZ

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Deborah Hames 6·5·10

Signature Date

Name & City: 1390 W. Rockcliff Way
PO BOX 1581
Oracle, AZ 85623

To Whom It May Concern:

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Donald Reil 6/5/10

Signature Date

Name & City: Donald Reil
Saddle Brooke

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Donald Reil 6/5/10

Signature Date

Name & City: Donald Reil
Saddle Brooke

From: Albert Vetere Lannon
To: NMSunZiaProject@blm.gov
Subject: Supplemental Comments
Date: 06/02/2010 11:20 PM

In reviewing the proposed Avra Valley and Tucson routes, as well as the San Pedro and Aravaipa routes, and after thinking about it and talking it over with others in the community, I wish to add these supplemental comments to those turned in at the Scoping Meeting in April.

The 10,000 residents of the community of Picture Rocks, more in Avra Valley, and certainly lots of people in some Tucson neighborhoods, would be highly impacted by proposed power line routes. Most of those have not really had a chance to hear any discussion or details or to participate in any open and transparent public input forums.

It does not seem fair or appropriate that the original study area had a year and 12 Scoping Sessions, and the expanded area -- us -- only a couple of months and one meeting.

If you want to move forward without delay and confrontation, it is imperative that the people to be impacted be involved and make their own decisions. That would require not just a single Scoping Session, but many meetings with community organizations to make the SunZia/BLM case for these lines going through their communities, and to use the give and take of good faith debate to possibly improve the proposal. The process needs to be open and expanded.

We are at least entitled to the year and 12 meetings that others had. Anything less would look like "the fix was in,' and what we, the public think, is meaningless. That would only create legal and other confrontations and a lot of heat with little light.

Further, we need to come to our opinions as fully informed as possible; some charts and maps and consultants shining us on doesn't meet that standard. I've heard that a feasibility study of the proposed Tucson routes has already been prepared, but not released. We need to see it and discuss it with you in order to come to any meaningful position.

All we are asking for is that Tucson/Avra Valley/San Pedro/Aravaipa be given the same consideration given to the original study area, with an open and transparent process.

Sincerely,
Albert Vetere Lannon

Wild Heart Ranch
13141 W. Camino de Conejo
Tucson, AZ 85743
(520) 622-3561

"It's all connected!"

To Whom It May Concern:

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DATE RECEIVED 6/18/10

Quentin Branch 6-5-10

Signature Date

Name & City: QUENTIN Branch
Po Box 654 Oracle Az 85623
1982 W. Linda Vista Rd.

To Whom It May Concern:

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Brittania Penica 6-5-10

Signature Date

Name & City: Brittania J Penica
Mammoth, AZ

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DATE RECEIVED 6/8/10

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Brittania Penica 6-5-10

Signature Date

Name & City: Brittania J Penica
Mammoth, AZ

From: Kathy Larsen
To: nmsunziaproject@blm.gov
Subject: The impact of Aravaipa Canyon
Date: 06/08/2010 01:57 PM

We are totally against the Sun Zia project though the Aravaipa Valley. This would be destroying the beautiful wilderness and views of our canyon. Please do not destroy this area.

Herb and Kathy Larsen

The New Busy think 9 to 5 is a cute idea. Combine multiple calendars with Hotmail. Get busy.

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DATE RECEIVED 6/18/10

Karen Medley June 5, 2010

Signature Date

Name & City: KAREN MEDLEY
P.O. Box 956
ORACLE, AZ 85623

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6-5-10

Signature Date

Name & City: Jeff Egan
Oracle

From: dtlars@aol.com
To: NMSunZiaProject@blm.gov
Cc: friends@sdc.org
Subject: Comments
Date: 06/05/2010 12:07 PM

As a member of the Friends of the Bosque del Apache National Wildlife Refuge I would like to join in our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Please do not withhold my personal information and do not add me to your mailing list.

Thank you for your attention. Take care.

Jody Larson

107 Tierra Rica Drive, Santa Fe, NM 87505
505.982.0776

To Whom It May Concern:

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DATE RECEIVED 6/18/10

Karen Medley June 5, 2010

Signature Date

Name & City: KAREN MEDLEY
P.O. Box 956
ORACLE, AZ 85623

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6-5-10

Signature Date

Name & City: Jeff Egan
Oracle

DATE RECEIVED
6/18/10

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R. John Medley 06/06/16

Signature Date

Name & City: R. JOHN MEDLEY
ORACLE, AZ 85623

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SunZia needs to abandon any plan to construct transmission lines through the Aravaipa (or any other Arizona wilderness area). Routes through Tucson using existing infrastructure corridors are available and would have far less impact on the environment. It is an outrage that a so-called "green" energy project would destroy millions of acres of pristine Arizona.

Joan Moore 6/4/2010

Signature Date

Name & City: Joan Moore
Oracle, AZ

From: Gene Latham
To: NMSunZiaProject@blm.gov
Subject: SunZia Southwest Transmission Project Environmental Impact Statement Comments
Date: 06/08/2010 01:43 PM

First, and most importantly, New Mexico and California seem to be under the mistaken impression that Arizona should feel both grateful and appreciative of the two respective states desire to complete a money-making deal at the expense of Arizona.

The destruction of our property values and public/private lands to accomodate extremely dangerous high-tension lines erected along the I-10 corridor between Benson and Tucson, Arizona to promote a partnership deal between New Mexico and California, is outrageous.

It has always been our understanding, wind and solar power generation is best created in the local vicinity of the user, and not transported over long distances. If California's current policies do not allow for the contruction of power generation in their own state, they need to re-think those policies to accomodate their needs. California has a history of transporting all the resources they demand, for their own use, from other states without regard to the inconvenience or impact this causes others.

With proper thought and planning, Sunzia Southwest can utilize high-voltage paths already in existence from Magdelena and Socorro, New Mexico through Springerville and Holbrook, Arizona, rather than creating havoc for property owners and businesses along the I-10 corridor.

Any plan that calls for the use along transportation corridors (utilities/railroad and/or transportation right-of-way) between Benson and Tucson will cut through developed residential communities, displacing many local residents. This would have a negative financial impact on this area; and, the potential for delaying the entire project in court for many years.

Respectfully,

Harry E. and Verna L. Latham
516 N. Tequila Trail
Benson, Arizona 85602

From: Zierenberg Nancy
To: NMSunZiaProject@blm.gov
Subject: official comments on project
Date: 05/06/2010 01:40 PM

Adrian Garcia, Project Manager
SunZia SW Proposal
BLM New Mexico State Office
POB 27115
Santa Fe NM 87502-0115
505-954-2199
NMSunZiaProject@blm.gov

May 6, 2010

Re: Scoping comments on the transmission line proposal.

Hello Adrian,
I'll try to keep my comments short and to the point. First of all, I have seen nothing indicating a need for this project. We don't need to generate more energy, but instead need to discourage the population boom heading to the arid southwest where we have no water. That should be a priority for our survival. If there is really a need beyond that of "future growth" I'd like to know what that is!

Placing any kind of upgraded transmission line anywhere but along I-10 or other areas where there are already lines is not acceptable. I would assume that if this project goes through, you would be actually replacing older lines and equipment, not just adding to the mess? After all, who is this power going to? Southern California? Arizona is not willing to sacrifice any more "relatively" pristine valleys or riparian corridors to something so foolish that will destroy what little we have left. Not for money from California, nor for our own energy efficiency. There are better ways to do things and we know that. The trick is not to allow industry to dictate what our choices will be! And that includes industry that controls our agencies (like BLM) as well.

It will come to this eventually: that if we want more "green" energy efficiency, we all need to start relying on individual placement of devices like solar for our households, and it's up to industry and some clever individuals to make this happen. That will go a long ways toward keeping what's left of our open lands, healthy habitat for wildlife, and natural heritage around for future generations.

What are all those substations for shown on the rough map you sent out? Are these just booster stations or distribution stations? Not much is explained in the mailing, but I imagine we'll have plenty to comment on once the EIS is completed. I hope you don't make the mistake of granting any rights of way in sensitive areas. Someone is pushing hard for this project, but if the need isn't really shown, it's going to be a hard one to get through!

Sincerely,
Nancy Zierenberg
1755 W Calle Pacifica
Tucson AZ 85745
nzberg4@cox.net

DATE RECEIVED
6/18/10

To Whom It May Concern:

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R. John Medley 06/06/16

Signature Date

Name & City: R. JOHN MEDLEY
ORACLE, AZ 85623

To Whom It May Concern:

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Signature Date

Name & City: Joan Moore
Oracle, AZ

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W E Busse — 6/05/10

Signature — Date

Name & City: W E Busse
Oracle Az

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Jane Garrett — June 5, 2010

Signature — Date

Name & City: Jane Garrett Oracle, Arizona
(north of

DATE RECEIVED
6/18/10

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Signature — Date

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(north of

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Jerry Iser June 6, 10

Signature Date

Name & C

Mr. & Mrs. Jerry Iser
90187 E Aravaipa Rd.
Winkelman, AZ 85192-9769

Bureau of Land Management =

I am strongly opposed to the Sun Zia Project through the San Pedro Valley and Aravaipa watersheds. These precious wilderness sites are home to an immense and irreplacable array of wildlife and unique botanical species.

Conservation is called for, NOT destruction.

Virginia Tench
5787 N. Cascabel Rd
Benson, AZ 85602

DATE RECEIVED
6/17/10

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Virginia Tench
5787 N. Cascabel Rd
Benson, AZ 85602

PUBLIC COMMENT RE SUNZIA/BLM POWERLINE

2 copy
DATE RECEIVED
6/18/10

We are residents of the Avra Valley & we do not want 500 kilovolt power lines near our homes, schools and community. We want the integrity of the Tucson Mitigation Corridor, set up to protect wildlife, to remain intact. We do not want our parks and communities at risk of noise and visual pollution. Use the existing I-10 corridor.

NAME	PHONE/EMAIL
1. Christopher W. Banks	520 682-7229
2. Pat McElroy	520-982-3954
3. Elizabeth Paxton	271-2046
4. Charles Shaw	
5. Michael Boggia	395-1644
6. Mary Boggia	395-1644
7. Rebecca Harris	682-8213
8. Nancy Kyle	616-7245
9. [illegible]	682-3471
10. Sherri Smith	520-349-5820
11. Peter Mott	616-7505
12. Jat V. Udovich	271-1276
13. [illegible]	616 [illegible]
14. JoAnn Lacroix	616 7632
15. Becky Kurschbaum	861-3105
16. Stefa Lightbourn	561 850-6064
17. Jack J. Gancarek	579-6970
18. [illegible]	520-883-3473
19. Pauette Holloway	520-904-4370
20. [illegible]	520 668-0407

Sponsored by concerned neighbors; donations welcome. Please return completed petitions to: Albert Lannon, 13141 W. Camino de Conejo, Tucson.

Received at BLM on 6/8/2010 AXG

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NAME	PHONE/EMAIL
1. E M Battin 7151 N. SANDARIO RD.	404-0219 MBATTIN@FS.FED.US
2. RICHARD SILVERS 13179 W Vaqueros RD 85742	(520) 682-2043
3. LINDA STORZER 12245 N. KALAMA Cir 85653	591-3337
4. Pamela Ruppelius 12232 N. Hong St	682-378
5. Bonnie-Lee Meadows 1245 N. San Joaquin	247-9239
6. Arthur D. Brown " " "	247-9239
7. Dale Hallen 4891 N LAKA YUCCA	TUCSON 85743 270-1312
8. KATHY CRAY 10914 W. ANTHONY, #2 85743	682-0786
9. Lisa Volturcs	Lisavolturcs18@hotmail.com
10. Richard	
11. Anthony VAZQUEZ 7140 N. Blue Blvd	TUCSON AZ 85743
12. CAROL Bondurant 12200 W. Cameo Mary Ln	Tucson AZ 85743
13. Greg Villeneuve 7725 N Lydia Ave	Tucson AZ 85743
14. Kevin Snyder	KSnyder-603@msn.com
15. DAVE PUTNAM	KDJ@JUNO.COM
16. Paul Wassman 12111 Saguaro Park Lane	
17. JAMES PETHIE 5630 AVRA R	
18. Mary Salgado	marycsalgado@live.com
19. Pete Stewart	CHetPeter16@GMail.com
20. Gail Hallen	dghallen@msn.com

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NAME	PHONE/EMAIL
1. Susan Martinez	682-7822
2. Geneva MacLean	3880028
3. Jamie Rutherdt	6820287
4. Karen Zopf	682-8760 kzopf520@comcast.net
5. Pam Moseley	349 0725
6.	
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Sponsored by concerned neighbors; donations welcome. Please return completed petitions to: Albert Lannon, 13141 W. Camino de Conejo, Tucson.

Received At BLM on 6/8/2010 AG

From: Cynthia Lawrence
To: NMSunZiaProject@blm.gov
Subject: power lines
Date: 06/05/2010 05:21 AM

To whom it may concern,
photography is important to the area. photographers from all over the country and the world bring their $10,000 cameras to the Bosque every year. power lines would discourage the tourists. NM has the last unspoiled views in the US. help preserve the view at the Bosque Del Apache.
Thanks,
Cyndie

From: Skeeter
To: NMSunZiaProject@blm.gov
Cc: editorial@dchieftain.com
Subject: Sun Zia Transmision Line
Date: 06/10/2010 05:21 PM

Mr. Adrian Garcia
Hello; I met you at the public meeting in Socorro recently and just wanted to remind you for the record, that I am still opposed to the proposed transmission line through Socorro County. I still have the same question now that I did when I met you in person. Why don't you generate the power you want to sell in Arizona where you claim you want to sell it? By your own maps that you have published, there is more solar generating potential in Arizona than there is in New Mexico. Even if there was a slight tilt in favor of the New Mexico site, I think the cost of the line would Negate the New Mexico site for probably longer than the proposed life of the line. That is unless the push for the New Mexico site is more a matter of who is going to sell the land for the project at a killing, than what is best for the citizens and the project. I can't help but feel that the figures in the background of this project are counting on this project to make them a pile of money either on land they own or on land they have an option on.
I see that you have finally decided to study an alternative route that runs south of T or C, N.M. This is probably the best of a bunch of poor options. I guess time will tell whether the final decision is made for the benefit of the citizens and taxpayers or the moneyed interest.

Sincerely yours,
Lane & Skeeter Leard
P.O.Box 129
Sn Antonio, N.M. 87832

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:23
STATE OFFICE
SANTA FE, NEW MEXICO

Cascabel Working Group
C/O 6590 N. Cascabel Road
Benson AZ 85602

June 9, 2010

Delivered via electronic mail (NMSunZiaProject@blm.gov) and U.S. mail.

epc
DATE RECEIVED
6/18/10

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115

Re: DEIS contributions to the Proposed SunZia Transmission Project

Dear Mr. Garcia:

Thank you for receiving these contributions to the Draft Environmental Impact Statement (DEIS) for the proposed SunZia Transmission Project routes traversing the San Pedro River Valley. This project was undertaken with your and Mickey Siegel's express assurances at our Cascabel meeting on January 13, 2010 that our contributions to the DEIS would be welcome and included.

We are apologetic that our entire contribution is not yet complete as we must rely on volunteers who also have busy lives. We do understand and are grateful that BLM will continue to accept comments received after the June 10, 2010 public comment period. Nonetheless, we are enclosing the first section of our report that is relatively complete as indicative of the scope and range of our contributions. The full report will follow as soon as possible, likely within the next month.

Thank you for your thorough consideration of these DEIS contributions.

Sincerely,

Daniel F. Baker
Cascabel Working Group, Secretary

Cascabel Working Group
C/O 6590 N. Cascabel Road
Benson AZ 85602
<cascabelworkinggroup.org>

RECEIVED
B.L.M.-MAILROOM
2010 JUN 11 PM 1:23
STATE OFFICE
SANTA FE, NEW MEXICO

DRAFT ENVIRONMENTAL IMPACT STATEMENT CONTRIBUTIONS FOR PROPOSED SUN ZIA TRANSMISSION LINE ROUTES TRAVERSING THE SAN PEDRO RIVER VALLEY

SUBMITTED BY THE

CASCABEL WORKING GROUP

(PART I)

Authors

NEPA requires that the preparers of the Environmental Impact Statement (EIS) and their qualifications be listed. The primary author of this document to date is Daniel F. Baker.

Mr. Baker received his Bachelor of Arts degrees in Philosophy and English Literature from Westmont College in Santa Barbara, California before several years of graduate study in Philosophy of Religion. He eschewed doctoral fellowships in philosophy to pursue a career in graphic arts. As a principal partner in a successful business, he served in several administrative and executive capacities before retiring to Cascabel in 1994 where he has lived since.

He is a major shareholder in the Saguaro Juniper Corporation, and was a founder of the non-profit Cascabel Hermitage Association where he continues to serve on the board of directors as secretary. He served as a Supervisor for the Redington Natural Resource Conservation District (NRCD) for several years and was named NRCD Cooperator of the Year in 1996. He was hired by The Nature Conservancy (TNC) and served in the capacity of Cascabel Community Steward until 2002. He was principally involved in TNC's acquisition of the 2600 acre Three-Links Farm. In his TNC capacity he travelled the length of the San Pedro River from its headwaters in Mexico to its confluence with the Gila River, and helped lead numerous tours of its lower reaches. He facilitated and recently helped complete conservation easements on 1700 acres in Hot Springs Canyon, a major tributary of the San Pedro River. He continues to lead San Pedro Valley natural history tours for various universities, environmental and church groups, drawing on his education with TNC and as an amateur naturalist. He currently serves as board member and secretary of The Cascabel Working Group, and is a homeowner in Cascabel.

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[*The sections below to follow soon*]

IV. MSPRV – DIRECT IMPACTS:

- **A. Landscape Fragmentation**
- **B. Birds**
- **C. Waters, Fish and Amphibians:**
- **D. Mammals**
- **E. Reptiles, Butterflies, Pollinators, etc.**
- **F. Biotic Communities, Plants and Exotics**
- G. **Misc.: Fire, Noise, Etc.**

V. CONCLUSION

VI. APPENDIX: List of threatened, endangered, and species of concern in MSPRV

I. INTRODUCTION

This document represents the initial input of the Cascabel Working Group to the Draft Environmental Impact Statement (EIS) for SunZia transmission line north/south routes traversing the San Pedro River Valley (SPRV). Our focus, as the name implies, is primarily "environmental." NEPA's characterization is wider by virtue of its defining the EIS purview as the "human environment", thus implicating cultural and sociological resources along with natural ones. Nonetheless, those equally significant aspects of the SPRV are only incidentally touched upon here and await other venues for fuller development.

For those familiar with the work of the Cascabel Working Group, it will come as no surprise that we believe that a fair application of National Environmental Protection Act (NEPA) laws in light of the biological evidence argues strongly against SPRV routes. Acknowledging that bias, it is important to note however that this study did not require a cherry-picking of the research to support a preconceived viewpoint. The reality is that the authors had difficulty in knowing when to curtail their investigations. Despite the "green" credentials of the SunZia project, opposition to an SPRV route by every environmental organization that has weighed in on the issue is testimony to the widely held biological consensus.

It is important to note that neither the Cascabel Working Group, nor the evidence of this document, is taking a position in opposition to the SunZia transmission line project *per se*. The need for renewable energy is significant and urgent, and the degree to which the SunZia project participates in that effort is laudable. It is only urged that, in the rush to *renewable* energy for the sake of the human and natural environment, we not sacrifice *non-renewable* natural resources of global significance in the process. In so far as the SunZia project proceeds, we propose that present energy corridors that are already ecologically compromised be pursued in favor of ones such as the SPRV that would severely impact our natural environmental heritage.

II. GEOGRAPHICAL AREA:

The areal focus of this document is those portions of the SPRV traversed by proposed routes for the SunZia transmission lines, principally from about the Winchester substation to the San Manuel and Oracle area. This reach of the SPRV is largely congruent with what has been traditionally termed the Middle SPRV (MSPRV), as it is in Pima County's Sonoran Desert Conservation Plan, that is, from the rocky outcrop just north of Pomerene known locally as "The Narrows", to the crossing of the San Pedro River by the Cascabel Road just south and east of San Manuel,[1] a reach of nearly 40 miles.

It is important to note however that though those markers are largely defined by the San Pedro River, the consideration of this document is the entire Middle San Pedro River Valley watershed, that is, both the basin and range extent of that traverse. The Galiuro and Winchester Mountains to the east, the Rincon and Catalina Mountains to the west, as well as the attendant foothills and canyons, are equally part and parcel of the MSPRV ecosystem to be considered here.

At the point of this writing, no one SunZia SPRV route among the several proposed has been selected, and they are largely undefined in detail. In general these several routes primarily run on either the eastern or western flanks of the valley. Though crossing the SPR at one or several

[1] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 3.

points, those routes primarily traverse the SPRV on its northwest trending axis for a length of approximately forty miles across the upland foothills, bajadas and canyons. Especially relevant to the area of consideration and impacts is the SunZia project's petition to the Federal Energy Regulatory Commission (FERC) wherein they state:

> *A right-of-way of up to 1,000 feet in width is required to construct, operate, and maintain the Project. However, in order to accommodate future expansion, the Project's EIS study corridor is one mile wide. The wider study corridor will significantly reduce the environmental obstacles to future transmission expansion along the Project's path by considering environmental resources any such expansion would be likely to affect.*[2]

While this lack of specificity is a detriment to detailed route analysis, on the other hand it argues for a wider consideration of MSPRV impacts.

III. MSPRV – INDIRECT IMPACTS:

A. NEPA – Context and Intensity

The SunZia project mile-wide study corridor and the introduction of future transmission expansion greatly enlarge consideration of both the spatial and temporal impacts of the project. As NEPA warrants, "effects" in the EIS include "Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects."[3] Such considerations are also pertinent to a NEPA judgment of Environmental Objection (EO), "Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts."[4]

Other legal definitions explicit in NEPA also recognize that such wider consideration is germane to the modern understanding of ecological science – i.e. the interconnection and interdependence of all elements of an ecosystem. The severity, duration, or geographical scope of impacts, along with associated threats to national environmental resources is a basis for environmentally unsatisfactory reviews. NEPA Section 1508.8 also notes that "indirect effects may include... related effects on air and water and other natural systems, including ecosystems. ...Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative."[5]

Another component related to wider considerations of areal impacts explicit in NEPA is the "significance of an action," or what one might call the weighted metrics to be considered. With regard to those weighted measures, NEPA requires that both the "context" and "intensity" or "severity of impact" be considered. That means that the proposed action "must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected

---

[2] http://www.sunzia.net/pdf/012910_FERCpetition.pdf, p. 4
[3] CEQ NEPA Regulation Section 1508.8 [40 C.F.R. § 1508.8].
[4] Ibid.
[5] Ibid.

interests, and the locality." In evaluating the intensity of the proposed action, it requires that, "Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas" should be considered.[6]

B. SPRV General Attributes:

1. San Pedro River

While the loosely defined SunZia project routes avert most of the designated conservation status lands in the MSPRV, there is an abundance of "proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas" to address.

The most renowned of course is the San Pedro River itself, often regarded as the last major free-flowing river in the desert southwest, and considered to be "...the best example of a desert riparian system remaining in the Southwest."[7] Accolades such as the following are numerous:

> *The upper San Pedro river basin sits at the ecotone between the Sierra Madre Mountains to the south, the Rocky Mountains to the north, the Sonoran Desert to the west, and the Chihuahuan Desert to the east. The basin is one of the most ecologically diverse areas in the Western Hemisphere and contains numerous different biotic communities and supports several endangered plant and animal species. ...The San Pedro is one of the last free-flowing streams in the American Southwest and serves as an international flyway for more than 400 species of birds, and sixty km of riverine territory north of the U.S.-Mexico border is designated as a national conservation area.*[8]

It has in fact been recognized as having natural heritage values of global significance by several organizations, including The Nature Conservancy,[9] the Commission for Environmental Cooperation,[10] and the American Bird Conservancy.[11] Indeed, the Bureau of Land Management which is overseeing the SunZia project is itself among them.[12]

Speaking to the renown of the San Pedro River was the convening of a tri-national Commission for Environmental Cooperation (CEC) negotiated by the United States, Canada and Mexico under the North American Free Trade Agreement (NAFTA).[13] It too touted the San Pedro area as

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[6] CEQ NEPA Regulation Section 1508.27 [40 C.F.R. § 1508.27.]

[7] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 3.

[8] Forward by W. James Shuttleworth, Director, NSF Science and Technology Center for Sustainability of Semi-arid Hydrology and Riparian Areas (SAHRA) in Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), p. x.

[9] "Last Great Places," Special issue, *The Nature Conservancy* (41: May/June, 1991).

[10] "Ribbon of Life: An Agenda for Preserving Transboundary Migratory Bird Habitat on the Upper San Pedro River," Commission for Environmental Cooperation (1999).

[11] "The American Bird Conservancy Guide to the 500 Most Important Bird Areas in the United States," American Bird Conservancy (Random House Trade Paperbacks, 2003).

[12] "San Pedro River Ecosystem – An Acquisition Plan," prepared by U.S. Bureau of Land Management (Safford District Office, Arizona, 1990).

[13] Sustaining and Enhancing Riparian Migratory Bird Habitat on the Upper San Pedro River," for the Commission for Environmental Cooperation, 1998, p. 1.

"internationally renowned for its native biodiversity," containing "one of the richest assemblages of species of any region in the United States (Simpson 1964 in Friedman and Zube, 1992)."[14] But its focus was the fact that "The San Pedro River supports one of the most important migratory bird habitats in North America; indeed, roughly half of the birds that breed in this arid region are dependent upon it."[15] Along with possessing "one of the highest bird diversities of areas its size in the United States,"[16] they called the supporting habitats "of special continental importance…."[17]

> *For these reasons, in 1995 the American Bird Conservancy, in partnership with Partners in Flight and the National Audubon Society, named the SPRNCA a Globally Important Bird Area. This was the first designation of this kind in the Western Hemisphere.*[18]

What is relevant here is that the prominence generically ascribed to the San Pedro River (SPR) is equally applicable in its lower reaches. Virtually all of the significant biological features of the Upper SPR apply to its middle and lower reaches, as should the managerial prescriptions, as it wends its way north to the Gila River. After all, "…ecosystem management efforts that end abruptly at administrative or international boundaries are, in the long-term, unlikely to accomplish the overall goal of biodiversity conservation."[19] The CEC itself concurred, noting that:

> *The expert team has adopted a bird's-eye-view of habitat availability, which transcends political boundaries. We consider the United States and Mexican reaches of the basin a single hydrologic entity. ...The objective of this investigation is to provide information that will help maintain a high quality, self-sustaining riparian ecosystem within and beyond the San Pedro Riparian National Conservation Area. ...all North Americans benefit from, and have a stake in preserving this riparian habitat and the migratory birdlife that it supports…..*[20]

It is abundantly clear that the attributes sited by the CEC and for SPRNCA apply to the Middle SPRV (MSPRV). This reach of the SPR also partakes of the same internationally renowned biodiversity, and evidently more so than the Upper SPRV. While also partaking of the Madrean and Petran Woodlands that make up the Sky Islands ranges, here the Sonoran Desertscrub (154.12) comes from the north and west to meet the Chihuahuan Desertscrub ( ) of the valley half way. There is also only north of Interstate-10 the Interior Chaparral (133.3) rimming the ranges of the MSPRV, as well as immediately proximate biotic communities to the valley that are not present further south – the Plains and Great Basin Grasslands (142.3) of Allen Flat through which the SunZia route would pass on its way to the Winchester substation, and the Great Basin Conifer Woodland (122.4) in the Aravaipa Valley just east of Kielberg Canyon.

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[14] Ibid., p. 16.
[15] Ibid.
[16] Ibid., p. 3.
[17] Ibid., p. 15.
[18] Ibid., p. 23.
[19] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion, p. 4.
[20] Ibid., p. 15.

Within a 25 mile radius of the central MSPRV exists eight biotic communities, as great as any area in the American Southwest, twice as many as in the Upper SPRV.

This extraordinary biodiversity will be returned to when looking more pointedly at the ecoregional influences in the MSPRV, and especially when reviewing in depth the vertebrate populations in the area. But when addressing the San Pedro River *per se,* it is its preeminence as the main flight corridor for neotropical migrant birds in the West that elicits the greatest attention. The studies that substantiate the SPRV's "continental importance" bear out that those migrating birds do not suddenly change watersheds when reaching the Lower SPRV.[21] A third of the monitoring stations for the principal study in that regard were in the MSPRV, two in the canyons of upper Hot Springs Canyon tributaries, and two on the SPR not far north of its confluence with Hot Springs and Paige Canyons. Some of the most significant data comes from those sites.[22] Indeed, one of the principal biologists in the study indicated that the highest densities of neotropical migrants were found in Cascabel where birds showed inter-species aggression indicating limitations of habitat.[23]

Another commonality with the Upper SPRV is the vitality of the river itself. Some tend to minimize the Lower San Pedro's significance because of its apparent dependence upon the Upper, and its admittedly more intermittent flow regime. Nonetheless, its downstream locale does not make it second in significance – migrants require, and by virtue of the visiting numbers apparently receive, as much nutrition in their migrations here as they do upstream.

Further, while hydrologic studies confirm that a greater share of upstream groundwater reaches the middle San Pedro River as subflow from upstream at the Narrows than formerly presumed by the Arizona Department of Water Resources estimates, this section of the river is still most largely dependent upon mountain front recharge. "Mountain front recharge is probably the most important source of valley-fill groundwater recharge in this sub-basin."[24]

It is true that less recharge would be expected as the elevation of the river descends into the drier Sonoran zone. However, as Skagen's study demonstrated, there is actually more utilization by neotropical migrants of the upland oases in the riparian habitats of the SPRV mountains and foothills than on the river itself.[25] The river appears to be the green "ribbon through the desert" that is the navigational arrow pointing the way, while many of their best stopover resorts seem to be those permitted by the uplands. Still, if the river itself were not important, the birds would be following other drier valleys.

This connection of the uplands and the river is a point that will be continually returned to, for it is the most glaring ecological misapprehension of the SunZia proposed routes through the MSPRV: that somehow the connection between river, foothills and mountains does not exist and can be transected without deleterious impact to an ecosystem of critical continental importance.

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[21] Susan K. Skagen (USGS), C.P. Melcher, W.H. Howe and F.I. Knopf, "Comparative Use of Riparian Corridors and Oases by Migrating Birds in Southeast Arizona", in *Conservation Biology* (Vol. 12, No. 4, August, 1998), pp. 896-909.

[22] Ibid., p. 907.

[23] Dave Krueper, BLM biologist, personal communication.

[24] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 14.

[25] Skagen, op. cit.

2. Unfragmented and Intact landscape

While the MSPRV shares the Upper SPRV's biodiversity and avian flight corridor, that does not mean there is no difference, and in fact the distinction is a critical one. There is no question that SPRNCA and the political efforts of the Upper San Pedro Partnership (USPP) have garnered most of the attention for the SPR. That has been appropriate since development has been an ongoing concern in the Upper San Pedro, while the Middle SPRV has until recently escaped such large-scale impacts. It so happens however that past disregard now speaks to the MSPRV's distinctiveness.

It is the very lack of development and landscape fragmentation which has created the political upheaval in the Upper SPRV that really distinguishes the MSPRV. It is what strikes the eye of any visitor and even the most casual observer. "Spanning this reach of river is a nearly unfragmented landscape linking the Galiuro and Winchester mountains with the Santa Catalina and Rincon mountains, which represents the narrowest intermountain distance between these ranges."[26]

Unfragmented landscapes are key indicators developed by biologists in assessing the conservation value of regions and sites and the imminence of the threat they face.[27] "Large blocks of habitat have the potential to sustain viable species populations, and they permit a broader range of species and ecosystem dynamics to persist."[28] This is a concept that will be returned to in greater detail when assessing the impacts of the SunZia routes through the MSPRV.

This unfragmented landscape of the MSPRV was, for example, a major rationale in Pima County's acquisition of the A-7 Ranch which extends from the Rincon and Santa Catalina mountains to the valley floor and SPR. As stated in the plan, "The overall biological goal in this subarea adopted by the Science Technical Advisory Team is to protect native plants, animals and natural communities of the Middle San Pedro River throughout Pima County by maintaining and/or restoring ecological and evolutionary processes that sustain them within a largely unfragmented landscape."[29] It was also articulated as one of their conservation strategies: "Maintain relatively unfragmented landscape connections between the Rincon, Santa Catalina, Galiuro and Winchester mountain ranges and through the San Pedro River valley that facilitate movement of wide-ranging wildlife species to meet seasonal and annual life requirements and for genetic interchange."[30] Pinal County has also recognized the unfragmented nature of the area by adopting a County Open Space and Trails Master Plan that identifies much of the Lower San Pedro Valley as open space.[31]

Integral to the unfragmented and open space character of the MSPRV is the lack of improved roads. The MSPRV is in fact part of one of the largest "roadless areas" in the American Southwest. "Roadless area" is a technical term that means, "Literally an area without any

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[26] Malusa, J. and J. M. Porter, A biotic survey of Buehman, Espiritu, Youtcy, and Roble canyons in the Redington Pass region, Arizona, 1990. Report prepared for Riley west, Inc. [SDCP, p. 5]

[27] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 89.

[28] Ibid., p. 121.

[29] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 12.

[30] Ibid.

[31] TNC Scoping comments, July 19, 2009.

improved [author's emphasis] roads maintained for travel by standard passenger type vehicles."[32] The Cascabel/Redington road within the MSPRV routes proposed by SunZia does not meet that criterion. The U.S. Department of Interior classifies a road that "May or may not be graded, and has a dirt surface of any width" as an "Unimproved Road,"[33] though Cochise County classifies it merely as a "primitive road."

With only a few exceptions around the margins, the area is predominantly "roadless" from the western flanks of the Rincon Mountains and crest of the Catalina Mountains to San Manuel and highway 77, then to the Gila River on the north, to the town of Bonita on the east, and to Three Links Road on the south. That area includes not only the MSPRV and its ranges, but also portions of the Lower SPRV, the Santa Teresa Mountains, and most of the Aravaipa Valley and the Pinaleno Mountains.

> *...wildlife connections... extend from the San Carlos Reservation south through the Aravaipa and Santa Teresa Wilderness Areas, and then further south into the wilderness land of the Galiuro Mountains. There exists a 100-mile-long stretch of land, extending from the San Carlos Apache Reservation all the way south through Gila, Pinal, and Graham Counties to northern Cochise County, containing a network of wildlife trails that has never been interrupted by a motorized vehicle road, one of the last remaining wildlife migration corridors of this type and magnitude in the Southwest.*[34]

Indeed, the MSPRV is part of a largely unfragmented area of nearly one million acres.[35]

It may be objected that the areal extent here considered is already fragmented by a natural gas pipeline, an electric transmission line and service roads, and ranch roads. In that regard, the point here is not that the MSPRV is "pristine" and without scars, but rather that it is "*largely* unfragmented and intact." The pipeline and existing power line roads have indeed left significant erosive scars, introduced exotic species, and permitted greater ORV trespass, all points that will be examined below in greater detail as significant direct impacts of the proposed SunZia project.[36] Ranch roads on the other hand typically follow washes and ridges and do not cut trans-valley swaths to steep high points.

The SunZia project however, with its twin 16-story 500Kv towers and access roads along the full length of the valley foothills, is enormously greater in its scope and projected impact than anything existing in the valley. That is not to mention the expansion to other infrastructure projects along the same corridor that are clearly foreseen by SunZia's FERC application. The SunZia project is to the existing power lines what an Interstate Highway would be to the Cascabel/Redington unimproved dirt road. Were it implemented, the appellation for the Middle SPRV would have to be altered to "largely fragmented," and prospects for some larger conservation status for the valley would be greatly imperiled if not fatal.

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[32] FSH 1909.12, Section 7.11.

[33] http://www.doi.gov/pam/frm-1876.pdf

[34] Peter Else, Friends of the Aravaipa Region (FAR), letter of May 26, 2010.

[35] Personal communication: David B. Harris, Director, Land and Water Protection, AZ Chapter of The Nature Conservancy.

[36] Cf. Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office, May 1998; and Lower San Pedro Watershed Assessment Project, AZ Water Protection Fund #00-109.

Since NEPA directs us to consider issues of context, threat and proximity, it is noteworthy to consider that west of the Rincon and Catalina Mountains is a metropolitan area of a million people. On the east side is a largely wild, open and environmentally intact area over 1-1/2 times the size of the state of Rhode Island, with a population of only a few hundred people.

> *Although the lower basin is close and accessible to the burgeoning Tucson and Phoenix metropolitan areas, it has so far not undergone extensive population growth and urban/suburban development. In 2000, the population in the central basin, which includes about 80km of the river from the Narrows north to near San Manuel (but not including San Manuel), was reported to be 213 people (J. Haney, unpublished data).*[37]

Another related term applied to the MSPRV is that it is a relatively "intact landscape," which is largely inapplicable to significant portions of the upstream valleys. "Intact habitat represents relatively undisturbed areas that are characterized by the maintenance of most original ecological processes and by communities with most of their original suite of native species."[38] The term cannot honestly be applied to the MSPRV without some qualification. Significant impacts to the dominance pattern of plant species caused by heavy grazing as well as alteration of the hydrologic regime by entrenchment of the SPR occurred around the turn of the twentieth century.[39] Exotic species are present, and natural fire regimes have been altered in the grasslands. Areas in the valley where those aspects persist are more characteristic of "altered" habitats. But as distinct from "heavily altered" habitats, "Original habitat is likely to return with time, moderate restoration, and adequate source pools."[40]

So long as one does not resort to absolutist categories of "pristine" and "original" landscapes which rarely occur in present day lowland areas of the Southwest, the MSPRV represents a relatively intact landscape that is characterized by the maintenance of most original ecological processes and by communities with most of their original suite of native species. With regard to the great extent of the valley which is rangeland,

> *The data indicate that about 40% of the rangeland is in high or very high similarity to the historic condition. In other words, the species present and the proportions making up those species are fairly similar to presumed "historic" conditions for the site. Moderate similarity was found on 53% of the area, indicating either different species occurred or, more likely, the species deviated from the "historic" proportions. This probably indicates shrub increases in most cases. Only 7% were in low similarity.*[41]
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> *...there is general agreement that overall range and watershed condition has improved greatly since the early 1900s and especially since the 1950s. Numbers of livestock have declined dramatically and management (pasture rotation, distribution of grazing) has greatly improved. ...Other than roads, there is*

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[37] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), p. 348.

[38] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 120.

[39] Cf. Hastings and Turner, The Changing Mile (University of Arizona Press), 1965.

[40] Ibid., pp. 120-21.

[41] Lower San Pedro Watershed Assessment Project, AZ Water Protection Fund #00-109, 2004, pp. 22-3.

> *probably less human impact on the vegetation of the watersheds now than at any other time since settlement.*[42]

Similarly, riparian woodland areas along the SPR and its valley tributaries have continued to be maintained or improved to relatively intact status. The acquisition of protected conservation sites on significant portions of riparian areas by various agencies and NGO's has certainly been a factor. "Close to one third of the lower river corridor is now in protected status, and stream flow and habitat conditions are improving."[43]

> *Dryland rivers have some of the most variable flow regimes in the world.... However, the very unpredictability of streamflows in dry regions, over time, has produced ecosystems with high resilience. Despite having undergone extensive change, the San Pedro River today sustains productive and diverse biotic communities.*[44]

The Muleshoe CMA has an active prescribed burn program in which neighboring ranches have participated with good results. Pima County's A-7 Ranch also has a fire management plan.[45] The Muleshoe CMA also reports that, "This rest from livestock use over the past decade has allowed natural processes to resume and has helped restore proper functioning condition to the riparian systems on the Muleshoe. This has resulted in improved riparian function, greater diversity in the age structure of the woody riparian species, and increased streambank stability."[46]

Likewise, most major ranches in the valley have fenced many of their riparian areas and created alternative waters in order to allow for better cattle management. Since relatively intact, lower-elevation riparian woodland is now extremely rare throughout the Sky Island region,[47] it is altogether appropriate to state that "There are few places remaining in the southwestern U.S. that are as intact and have the quality and extent of aquatic and riparian habitat as that found on the San Pedro River."[48]

Similar to largely unfragmented landscapes, relatively intact habitats are key indicators developed by biologists in assessing the conservation value of regions and sites. As noted by The Nature Conservancy in their ecological analyses of the Sonoran and Apache Highlands ecoregions, "Landscape-scale Conservation Sites capture entire ecosystems, such as a complex of mountain ranges and valleys, where ecological processes remain largely intact."[49] Thus it can be inferred that the imprimatur "largely intact" pertains to the Lower San Pedro as their fourth highest ranking conservation site out of 100 in the Sonoran Desert,[50] and the Aravaipa

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[42] Ibid., p. 24.

[43] TNC Scoping comments July 19, 2009.

[44] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), pp. 3-4.

[45] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 13.

[46] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office, May 1998, p. 23.

[47] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 259.

[48] TNC Scoping comments, July 19, 2009.

[49] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion, pp. i-ii.

[50] Ibid., pp. 29-30.

Watershed, Kielberg Canyon, Buehman Canyon/Bingham Cienega, and the Winchester Mountains, Allen Flat as four of their 99 conservation priorities in the Apache Highland region[51] - all sites falling within the MSPRV.

Indeed, when large blocks of unfragmented landscape come together with extensive intact habitats in a region of significant biodiversity, a region may take on global significance. As we shall examine shortly, the renowned World Wildlife Fund assessment of terrestrial ecoregions gives the highest priority to "Globally or regionally outstanding ecoregions that present rare opportunities to conserve large blocks of intact habitat," which not incidentally includes the Chihuahuan Desert, Sonoran Desert, Arizona Mountains and Madrean Sky Islands ecoregions, all of which converge in the MSPRV.[52] In fact, each of these same ecoregions was elevated to "Global 200 status" because of their extraordinary ecological phenomena containing extensive intact habitats and large vertebrate assemblages,[53] all of which are again characteristic of the MSPRV.

The Upper San Pedro Partnership referenced above continues to fight the legal and artificial distinctions between the river and its surrounding watershed that continues to develop and threaten the sustainability of the river and its habitat. The distinctive virtue of the MSPRV is that in addition to all of the same biological attributes of the Upper SPR it flows within a relatively intact and largely unfragmented landscape. If the San Pedro River can lay claim to being the last major free-flowing river in the desert Southwest, the Middle SPRV can make a correlate claim: *the last relatively intact and largely unfragmented extended landscape in the desert Southwest through which courses a major free-flowing river.*

3. Historic and Cultural Resources (cursory)

There is sufficient cultural and historic material in the MSPRV to fill several books, as indeed it already has. NEPA defines the EIS purview as the "human environment", thus implicating these cultural and sociological resources along with natural ones. Indeed it is made explicit when stated that "Unique characteristics of the geographic area such as proximity to historic or cultural resources…" should be considered in evaluating "intensity" of impacts.[54] Nonetheless, since the focus of this paper is primarily the biological environment, and such cultural and historic considerations are also beyond the time and expertise of the authors, only a few cursory points will be made such as contribute to the overall argument.

As the Muleshoe Ecosystem Management Plan and Environmental Assessment summarized, "Human occupation of what is now the Muleshoe Ecosystem may stretch back some 12,000

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[51] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion. Prepared by The Nature Conservancy of AZ, Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora, agency and institutional partners, 2004, pp. 46-7.

[52] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 84.

[53] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), pp. 199–224.

[54] CEQ NEPA Regulation Section 1508.27 [40 C.F.R. § 1508.27.]

years."[55] This is evidenced by projectile points being unearthed in mammoth remains just south of the MSPRV. "Today the San Pedro River Valley contains one of the highest concentrations of Paleo properties in the nation."[56]

The Middle SPRV is particularly rich in archaeological sites with a great complexity of periods and cultures represented.

> *CDA* [Center for Desert Archaeology] *and other researchers have identified over 500 archaeological sites in the lower San Pedro Valley. About one third of these sites contain architecture and probably human remains. Furthermore, at least 40 sites were villages inhabited by 100 to 250 people for a century or more and they are marked today by rich archaeological deposits that include thousands of ancient houses and scores of public structures such as ballcourts and platform mounds, as well as large burial areas."*[57]

The Center for Desert Archaeology has made the SPRV a focus of their work, and has seen fit to commission a resident archaeologist and sponsor a very active volunteer stewardship program. In fact the abundance of sites extends right up to the visit of Father Kino to the Sobaipuri of Baicatcan in 1692, which has recently been reasonably established to be near the confluence of the San Pedro River and Hot Springs Canyon. Though scientists shy away from grandiose proclamations, it has been said that the SPRV contains the longest continuous archaeological record in the continental U.S., and rivaled in North America only by the Bering Straits.[58]

What such a plethora of archaeological sites affirms is the longstanding human importance of the MSPRV quite beyond any claims of modern scientists. The twelve millennia of human evidence is that this watered land bridge between two deserts served just as it still does for birds and animals today – a corridor for migration between north and south Americas, and at the same time sufficiently rich in living sustenance to be made a home.

It is worth noting too that the ethnobotanical evidence for those twelve millennia is that people made no artificial division between river, uplands and mountains. Their diets were as rich with the agaves, acorns, pine nuts and the myriad other plant and animal upland resources of the watershed as that available along the river and from their farms. It is one of the main attributes of the Sky Islands that so many ecotones can be crossed in such a short distance that makes it such a rich source of food and biodiversity. For example, the Pinaleno Mountains just east of the Galiuros contain the highest diversity of habitats in the shortest vertical distance of any mountain range in North America, traversing five ecological communities.[59] Without a formal ecological science, they nonetheless clearly understood how everything was connected.

Indeed, one of the major attributes of the San Pedro River Valley is not only that it is an intact ecosystem, but an intact cultural landscape as well.

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[55] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office, May 1998, p. 28.

[56] Ibid.

[57] Center for Desert Archaeology and National Trust for Historic Preservation, BLM scoping comments re SunZia Project, November 25, 2009, p. 13.

[58] Patrick Lyons, Dr. Jeffrey Clark, Desert Center for Archaeology (Pers. Comm.).

[59] http://www.nature.org/wherewework/northamerica/states/arizona/preserves/art1942.html

> *Of particular concern is the lower San Pedro River Valley. This area is widely recognized for the significance of its intact cultural and natural landscape; the scale of regional preservation provides an opportunity to interpret individual cultural resources as part of a broad cultural and economic landscape rather than as isolated phenomena. In addition, the great time depth allows us to study changes in this human landscape over the full time span during which people have inhabited the New World. Such opportunities are no longer available in many Arizona valleys (e.g., Phoenix, Tucson, Safford) where agricultural and, subsequently, urban development destroyed much of the archaeological record before it could be adequately documented. Currently, this largely unfragmented landscape contains no major linear facility, so the potential physical and visual impacts of the introduction of transmission lines of this size cannot be overstated.*[60]

Of course the cultural record and history does not end with ancient sites. Contemporary newspaper accounts record that the MSPRV experienced the raids of Geronimo's band, the last free ranging Native Americans in the continental U.S., right up until his surrender. But Mexicans were already making the area home, long before the valley became American with the Gadsden Purchase. Some of the evidence of their rich heritage is scattered about the valley in adobe ruins and in the graveyards of the Gamez's, Soza's, Araiza's, and more, not to mention that some of their descendents remain residents.

Anglo settlers have a long and worthy ancestry here as well. The history of Redington is about as wild and colorful as that of Tombstone, just a few miles to the south. Their ranching descendents carry on that tradition of a rugged western lifestyle across as much as five generations, and their voices are among the strongest in wanting to maintain the integrity of this valley. One of those ranching ancestors, Frank Marion Pool (of Pool Wash fame), who moved to the lower San Pedro from Tucson in 1883, wrote in his unpublished memoirs:

> *It is one of the most beautiful valleys I ever saw, the river a living stream. When I arrived, a few farms were already under cultivation, grass everywhere. Fine cattle ranged from the Mexican line to where the San Pedro river joins the Gila. There was wild game in abundance: deer, antelope, wild hogs, beaver, raccoons, foxes, wildcats, mountain lions, bear, rabbit, quail, doves, ducks and geese. The river teemed with fish, suckers and Gila salmon, some of them weighing as much as fifteen pounds.*[61]

To maintain as much of what was, and sustain as much of what can be, is a dream that can bring together a twelve thousand year Native American history with Mexican-Americans, Anglo ranchers, biologists and environmentalists. That is the diversity of human connection that mirrors the ecological one in the MSPRV.

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[60] Center for Desert Archaeology and National Trust for Historic Preservation, BLM scoping comments re SunZia Project, November 25, 2009, p. 5.

[61] Nat McKelvey, "Reckless, Romantic Redington", *Arizona Highways*, May, 1958.

4. Protected Status Lands and Partners

Given the international significance of the San Pedro River, the outstanding biodiversity of the region, and the extent of the largely unfragmented and relatively intact landscape of the MSPRV, it is not surprising that there are a plethora of protected status lands and working partners in the area. Perhaps the only surprise is that there are so many, exhibiting nearly as much diversity as the land itself. Here follows a brief summary of those efforts.

- The first institutional conservation work in the MSPRV dates to 1910 with the establishment of U.S. Forest Service (USFS) holdings in the Galiuro Mountains on the east side of the Valley.
- The Galiuro Wilderness was designated in Congress in 1964 and was enlarged in 1984.
- USFS holdings were expanded to include extensive lands of the Coronado National Forest in the surrounding Winchester, Santa Catalina and Rincon Mountains as well as the Rincon Mountain Wilderness Area.
- The Redfield Canyon Wilderness was designated by Congress as part of the Arizona Desert Wilderness Act of 1990.
- The Saguaro National Park, in recognition of the area's unique environmental attributes, was established as a National Monument in 1933 and upgraded to National Park status in 1994. The Saguaro East Unit, which includes the Saguaro Wilderness Area, overlooks the MSPRV.
- The Muleshoe Cooperative Management Area (CMA) with 57,500 acres is jointly managed by the Bureau of Land Management (BLM), Forest Service (USFS), Arizona Game and Fish Department (AGFD), and The Nature Conservancy (TNC). It includes part of the Galiuro Wilderness, Redfield Canyon Wilderness, and Hot Springs Area of Critical Environmental Concern (ACEC).

  As the CMA report states, "Since ecosystems do not stop at traditional boundary lines...," managers looked across boundaries to develop an active partnership between public and private interests to work on the plan. An interdisciplinary team of resource specialists from the BLM, AGFD, USFS, TNC, Soza Mesa Ranch, Saguaro-Juniper Association, and Bayless and Berkalew Company was convened to develop the plan.[62] It is noteworthy that though east valley SunZia routes take pains to skirt the Muleshoe CMA, they run through Soza Mesa, Saguaro-Juniper and Bayless and Berkalew who are all neighboring ranches that have similar resources and management concerns.

  In the Muleshoe CMA, Wildlife and its habitat are managed cooperatively under a Master Memorandum of Understanding (MOU) (1987) between BLM and the Arizona Fish and Game Commission. The BLM manages habitat for species identified as Wildlife of Special Concern by AGFD in conformance with state objectives which are identified in the AGFD Wildlife 2000 Strategic Plan. Federally listed species and those proposed for listing are protected by the Endangered Species Act of 1973 as amended (ESA). The

[62] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office, May 1998, p. 1.

BLM is mandated to protect threatened and endangered species and the ecosystems (habitats) upon which they depend.[63]

- The Safford District RMP designated the 16,763 acre Hot Springs Watershed ACEC for the protection of riparian, cultural, and fish and wildlife values including threatened and endangered species values.[64]
- The Pima County A-7 Ranch is part of Pima County's award-winning Sonoran Desert Conservation Plan and extends from the forests of the Catalina Mountains to the San Pedro River. Using 2004 voter-approved bond monies, the County acquired Six Bar Ranch and the A7 Ranch in the San Pedro River Valley, included 6,800 acres of fee lands, the 34,000-acre State grazing lease, and the 80-acre Bureau of Land Management grazing permit. The County manages the ongoing ranching operations, while conserving and protecting biological and ecological values of the lands. "The overall biological goal in this subarea adopted by the Science Technical Advisory Team is to protect native plants, animals and natural communities of the Middle San Pedro River throughout Pima County by maintaining and/or restoring ecological and evolutionary processes that sustain them within a largely unfragmented landscape."[65]
- Buehman Canyon is a critical wildlife corridor that is jointly managed by TNC, Pima County and the USFS. Buehman Canyon was investigated and designated a "Unique Water" of the State by ADEQ in 1996.
- Bingham Cienega is a spring-fed marsh on 285 acres that was acquired by Pima County Flood Control District in 1989 and is managed by TNC. Sonoran Cienega Wetland and Wooded Swamp are a globally imperiled natural community.
- In 1990 The Bureau of Land Management identified 8500ha for possible acquisition in the SPRV, and now holds extensive deeded and conservation easement lands in the in their Cascabel core Areas of Critical Environmental Concern.[66] The Cascabel community negotiated a Cascabel Ecosystem Management Plan with the BLM.
- The 3 Links Farm was purchased by TNC which placed conservation easements on 2,209 acres. Considerable water rights have been retired and this six mile stretch of river is once again flowing.
- The Bureau of Reclamation is also an investor in the 3 Links Farm. They did a habitat conservation plan with the Fish and Wildlife Service when they needed to mitigate for effects of southwestern willow flycatcher at Roosevelt Lake.
- The 57ha Spirit Hollow Preserve just southeast of San Manuel is habitat acquired by the Salt River Project as mitigation for impacts to southwestern willow flycatchers as a result of dam alterations and reservoir operation activities at Roosevelt Lake.
- The Center for Desert Archeology has been locally active since the 1980's in order to protect the extensive cultural and historic resources in the SPRV. It holds archeological

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[63] Ibid., p. 28.
[64] Ibid., p. 36.
[65] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 12.
[66] "San Pedro River Ecosystem – An Acquisition Plan," prepared by U.S. Bureau of Land Management (Safford District Office, Arizona, 1990).

conservation easements in the MSPRV and supports a Cascabel staff member and an active local site stewardship program.

- In Hot Springs Canyon conservation easements covering over 1700 acres were recently donated by the Saguaro Juniper Corporation, the non-profit Cascabel Hermitage Association, and several other private landowners. Their generosity is testimony to the conservation ethic shared by many of the MSPRV residents.

- The U.S. Forest Service recently determined that the strong ecological values of the San Pedro River Ecosystem Project deserved the highest funding priority in its national Forest Legacy Program. The San Pedro River project will conserve 694 acres of riverside forest near Cascabel. Corbin Newman, regional forester, Southwestern Region of the U.S. Forest Service said, "The importance of the San Pedro River ecosystem to the Southwest was validated by its selection as the number-one Forest Legacy Program project in the nation by the national review panel." The award received commendations from Governor Brewer and the district's Congresswoman Gabrielle Giffords.[67] In support of the project, Jeanine Derby, Forest Supervisor for the Coronado National Forest, noted that habitat fragmentation was a key management issues in their Forest Plan revision and said, "The lower San Pedro River Valley is a critical link between Coronado National Forest lands in the Catalina Mountains to the west and Galiuro Mountains to the east."[68]

- Neighboring the MSPRV is the perennial Aravaipa Creek, widely recognized as one of the most important refugia for native fish in the Southwest. A 77,400-acre area including the canyon and its surrounding uplands are jointly managed by the Bureau of Land Management (BLM), Arizona Game and Fish Department (AGFD), and The Nature Conservancy. The area includes the Aravaipa Canyon Wilderness, three Areas of Critical Environmental Concern (ACEC), and the Conservancy's Aravaipa Canyon Preserve.

- Arizona State Land Department (ASLD) rangelands in the Hot Springs, Soza and Redfield Canyon watersheds are part of the State Trust Land Reform Initiative of which "approximately 570,000 acres of the most critically important state trust lands through the designation of these lands as permanent conservation lands, to be held in trust and managed by the Arizona State Land Department to protect Arizona's quality of life for future generations." Extensive portions of ranches flanking both the western and eastern slopes of the MSPRV are part of the proposed ASLD conservation lands.[69]

- Though many of the MSPRV ranches are not part of protected status lands, their long history of conservation work cannot be ignored or diminished. Some of the local ranching families go back generations to the late 1800's, and have been instrumental in keeping open spaces in the valley. In recent decades, they have been increasingly involved in local conservation work.

  To assist in that work, the Redington Natural Resource Conservation District was established in 1947 to offer technical assistance for area ranchers and other landowners in

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[67] http://www.nature.org/wherewework/northamerica/states/arizona/press/press4031.html

[68] Letter of support re San Pedro River Ecosystem Forest Legacy project, Coronado National Forest, Supervisor's Office, Jeanine Derby, Forest Supervisor, 300 W. Congress St., Tucson, AZ 85701.

[69] http://www.land.state.az.us/news/2009/062609_reform.htm

conservation related projects. The District's area of conservation influence covers some 285,000 acres in this part of the Valley.

The Nature Conservancy in their scoping comments to the BLM with regard to the SunZia transmission project summarized well a good deal of these conservation efforts:

> *Over the last three decades The Nature Conservancy and many other agencies and organizations have been working steadily to protect the Lower San Pedro Basin. This area has become a focal point for conservation and mitigation investments because of the opportunity to protect and restore a relatively undisturbed river system, cross-valley wildlife movement, and ecological processes such as fire that maintain ecosystem health.*
>
> *Partners in this effort include the Bureau of Land Management, Bureau of Reclamation, Salt River Project, Arizona Game and Fish Department, Pima County and a number of private landowners. The Resolution Copper Company has offered to protect additional lands in the valley through its proposed land exchange for a mine site in Superior. Together, these partners have protected close to 40,000 acres and invested over $25 million in acquisition of conservation lands and appurtenant water rights. Close to one third of the lower river corridor is now in protected status, and stream flow and habitat conditions are improving.*[70]

Now these many efforts are beginning to coalesce into a locally generated conservation vision, which may eventually include Valley wide cooperative management status between area landowners, conservation groups and state and federal agencies that would put an end to further utility development here, would actively conserve its myriad environmental and cultural resources and would furthermore encourage not merely the possibility, but the viability, of traditional land uses such as ranching and outdoor recreation.[71]

C. Ecoregional Analyses:

In transitioning from general attributes of the Middle SPRV to a more biological focus, perhaps the place to begin is with Brown and Lowe's iconic map of "The Biotic Communities of the Southwest."[72] The map goes beyond political and bureaucratic boundaries to catalogue biotic baselines, largely defined by the temperate deserts of the Southwest – Mohave, Sonoran and Chihuahuan. It extends to the westward edges of the Mohave including Baja California, eastward to the edge of the Texas panhandle and the eastern edge of the Mexican state of Chihuahua, north to the Utah state line, and to the southern tip of the Mexican state of Sonora.

Focusing on biologic rather than political divisions allows one to see that the Middle San Pedro River Valley's position is in the precise middle of this map of the Southwest (halved and quartered the 4'x6' wall map folds at the juncture of Hot Springs Canyon and the San Pedro River). That is not just serendipitous, for the MSPRV partakes of every one of the basic biotic

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[70] TNC Scoping comments, July 13, 2009.

[71] David Omick, Cascabel Working Group presentation at SunZia Project meeting in Cascabel, January 13, 2010.

[72] Brown, D.E. and C.H. Lowe, "Biotic Communities of the Southwest (map at scale 1:1,000,000)," U.S.D.A. Forest Service General Technical Report RM-78 (1980).

formations in the Southwest and draws from four ecoregions that roughly correspond to the cardinal directions from the center of that mapping.

Using Lowe's descriptors and catalog numbers, in the MSPRV the Forest Formation is represented by the Petran Montane Conifer Forest (122.3) in the mountain ranges' highest portions. The Woodland Formation is represented by the Madrean Evergreen Woodland (123.3) flanking those peaks. The Scrub Formation is represented by the Interior Chaparral (133.3) in a lower transition zone. The Grassland Formation is represented by the Semidesert Grassland (143.1) in the upland slopes. The Desertscrub Formation is represented by the Chihuahuan Desertscrub in the southern valley basin (153.2). The Desertscrub Formation is also represented by the Arizona Upland Subdivision of the Sonoran Desertscrub (154.12) in the northern valley basin.

Those biotic formations or biomes "are not provinces *per se*, which are biotic, faunistic, or floristic in structure, function or other aspects."[73] Nonetheless, they do either roughly correlate to or fit within four great terrestrial ecoregions that merge in the Middle San Pedro River Valley, one of the few areas in North America where such convergence occurs, and is in large part explanatory of the great biodiversity resident here.

The World Wildlife Fund (WWF) distinguishes those ecoregions as Sonoran Desert (western), Chihuahuan Desert (eastern) Madrean (southern) and Arizona-New Mexico Mountains (northern). This region is in fact so complex (mirroring the complexity of the underlying geologic strata) that there is some variance as to how biologists conceive them. The Nature Conservancy (TNC), for example, due perhaps to the needs of their more local conservation concerns and analyses, amalgamates some of those ecoregions together into what they call the Apache Highlands. The WWF divisions, they explain, are more suited for large scale framing.[74] That noted, there is no variance in the extraordinary diversity referenced, and data from both analyses are relevant.

1. Ecoregional Science

Modern conservation biology and natural resource management has shifted more and more toward an "Ecoregional" or "Ecosystem" approach.[75] The reasons for this are several. Though there is clearly intra-species competition in the Darwinian sense, the relatively new science of ecology has come to better understand the interconnection and interdependence of species that make up entire biological systems. Much of this theory is derived from island biogeography which has demonstrated that over time larger intact and unfragmented areas support more

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[73] David E. Brown, Editor, "Biotic Communities of the American Southwest – United Sates and Mexico," in *Desert Plants* (Vol. 4, No's 1-4, 1982), p. 9.

[74] "Some biogeographers also consider them [Sky Islands] distinct from the nearby major mountain systems (i.e., Sierra Madre Occidental, Arizona Mountains, and Colorado Plateau), as they combine elements from both major systems, and refer to the biogeographic region as Apachean. However, at a continental scale, we interpret the Sky Islands as primarily Madrean in character...." Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), P.259.

[75] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz., An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (2000), p. 46.

species, whereas fragmentation reduces species diversity and viability.[76] "Large blocks of habitat generally contain larger and more stable species populations, and are uniquely able to support species with naturally low population densities or large home ranges (Noss and Cooperrider 1994)."[77]

Ecoregional science also helps conservationists and natural resource managers answer two critical questions, "'What are the most important places?' and 'How much conservation is enough?'"[78]

> *So called 'landscape-scale analyses' that evaluate and identify conservation priorities over large areas such as the Sonoran Desert Ecoregion are now widely regarded as a critical tool for arming conservation practitioners, policy makers, and the general public with the best scientific information upon which to implement conservation strategies.*[79]

Another important aspect of ecoregional science is the political implications. While the Endangered Species Act (ESA) is clearly an important and critical tool in conservation, its species specific focus, notwithstanding its recognition of habitat requirements, has at times been divisive. On the one hand conservation promoters may find private property concerns erupting over a particular species' habitat even while many ranches have been demonstrated to be some of the best conservers of species diversity, often due to their largely unfragmented extent.[80] On the other hand it can also encourage developers to pursue a strategy of legalistic maneuvering between islands of threatened and endangered species habitat while fragmenting the larger ecosystems upon which their long-term sustainability depends.

Ecoregional assessments have developed complex indices which avert these shortcomings, and conservation organizations have been some of the leaders in implementing this approach. The World Wildlife Federation (WWF) has "developed a detailed map of the terrestrial ecoregions of the world that is better suited to identify areas of outstanding biodiversity and representative communities (Noss 1992)."[81] Their conservation assessment of terrestrial ecoregions of North America was funded principally by the Commission for Environmental Cooperation under

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[76] MacArthur, R.H. and E.O. Wilson, The Theory of Island Biogeography, (Princeton University Press, Princeton, NJ, 1967).

[77] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 19.

[78] Conservation Priorities in the Apache Highlands Ecoregion, Dale Turner, Rob Marshall, Carolyn Enquist, Anne Gondor, and Dave Gori, The Nature Conservancy, Tucson, AZ; Eduardo Lopez, Gonzalo Luna, Rafaela Paredes Aguilar, and Chris Watts, Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora, Reyes y Aguascalientes, Sonora, Mexico; Sabra Schwartz, Arizona Game and Fish Department, Phoenix, AZ http://www.fs.fed.us/rm/pubs/rmrs_p036/rmrs_p036_375_379.pdf

[79] Marshall, et al., op. cit., p. 2.

[80] Cf. Quivira Coalition publications.

[81] David M. Olson, Eric Dinerstein, Eric D. Wikramana Yake , Neil D. Burgess, George V. N. Powell, Emma C. Underwood, Jennifer A. D'Amico, Illanga Itoua, Holly E. Strand, John C. Morrison, Colby J. Loucks, Thomas F. Allntt, Taylor H. Ricketts, Yumiko Kura, John F. Lamoreux, Wesley W. Wettengel, Prashant Hedao, and Kenneth R. Kassem, "Terrestrial Ecoregions of the World: A New Map of Life on Earth" in *BioScience*: Vol. 51, No. 11, (November 2001), p. 933.

NAFTA with the intent of providing a frame of reference for action to conserve biodiversity in North America.[82]

The WWF notes that their ecoregions "...are classified within a system familiar to all biologists — biogeographic realms and biomes. Ecoregions, representing distinct biotas (Dasmann 1973, 1974, Udvardy 1975), are nested within the biomes and realms and, together, these provide a framework for comparisons among units and the identification of representative habitats and species assemblages. ...they are built on the foundations of classical biogeography and reflect extensive collaboration with over 1000 biogeographers, taxonomists, conservation biologists, and ecologists from around the world.[83] The biological distinctiveness of these ecoregions is based on broad measures of species richness, endemism, unusual ecological and evolutionary phenomena, and the global rarity of Major Habitat Types.[84]

Likewise, in 1996 The Nature Conservancy began developing ecoregion-based conservation assessments for the entire United States and portions of the 31 other countries in which the Conservancy works.[85] They avoid the weaknesses of a solely species specific approach by combining what they call Coarse Filter and Fine Filter indices:

> *The Coarse Filter is represented by ecological groups, or assemblages of plant species.... The Fine Filter is comprised of the species for which distributional and population data are better known and catalogued in databases such as those housed in Natural Heritage Programs. ...The primary advantages of the Coarse Filter-Fine Filter approach include: (1) evaluates biodiversity at two different scales emphasizing the habitats in which the Ecoregion's species inhabit; (2) maximizes the number of species represented; (3) captures the variability in ecological conditions in which species occur; and (4) helps compensate for data gaps that result from uneven species inventory across the Ecoregion.*[86]

Indicative of TNC's approach, in their ecological analysis of the Sonoran Desert ecoregion they selected a total of 353 species from six taxonomic groups (amphibians/reptiles, birds, fish, invertebrates, mammals, plants) and also used 78 natural vegetation communities to represent a broader level of biological organization across the ecoregion.[87] Similarly in their Apache

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[82] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. xix.

[83] David M. Olson, Eric Dinerstein, Eric D. Wikramana Yake , Neil D. Burgess, George V. N. Powell, Emma C. Underwood, Jennifer A. D'Amico, Illanga Itoua, Holly E. Strand, John C. Morrison, Colby J. Loucks, Thomas F. Allntt, Taylor H. Ricketts, Yumiko Kura, John F. Lamoreux, Wesley W. Wettengel, Prashant Hedao, and Kenneth R. Kassem; "Terrestrial Ecoregions of the World: A New Map of Life on Earth" in *BioScience*: Vol.51 No. 11, (November 2001), p. 933.

[84] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 15.

[85] Dale Turner, Rob Marshall, Carolyn Enquist, Anne Gondor, and Dave Gori, The Nature Conservancy, Tucson, AZ; Eduardo Lopez, Gonzalo Luna, Rafaela Paredes Aguilar, and Chris Watts, Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora, Reyes y Aguascalientes, Sonora, Mexico; Sabra Schwartz, Arizona Game and Fish Department, Phoenix, AZ; Conservation Priorities in the Apache Highlands Ecoregion. http://www.fs.fed.us/rm/pubs/rmrs_p036/rmrs_p036_375_379.pdf

[86] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz, An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (2000), p. 12.

[87] Ibid., p. i.

Highlands ecoregional analysis, all native vegetation community types were mapped similar to Brown and Lowe and all of the native terrestrial ecosystems were considered as coarse-filter conservation targets, while 223 species were chosen for fine-filter conservation targets.[88] The end result of their analyses is that, "Landscape-scale Conservation Sites capture entire ecosystems, such as a complex of mountain ranges and valleys, where ecological processes remain largely intact."[89]

However, it is not only conservation organizations that have adopted an ecoregional approach. Federal agencies as well are yielding to the advantages of ecoregional science. "In 1993, as part of the Forest Service's National Hierarchical Framework of Ecological Units (ECOMAP 1993), ecoregions were adopted for use in ecosystem management. They will also be used in the proposed National Interagency Ecoregion-Based Ecological Assessments."[90]

Indeed, that approach was evident in the San Pedro River Ecosystem Project's garnering the highest funding priority in the USFS's Forest Legacy Program. The Coronado National Forest Supervisor in her letter of support noted that "...one of the key management issues we have identified is habitat fragmentation."[91] The USFS Southwestern Regional Forester also noted that, "The importance of the San Pedro River ecosystem to the Southwest was validated by its selection as the number-one Forest Legacy Program project in the nation by the national review panel.... The funding of this project is an important addition to collaborative efforts to sustain and enhance the San Pedro River watershed."[92]

The Bureau of Land Management (BLM), which is coordinating SunZia's Southwest Transmission Project, is also lately coming on board with an ecoregional strategy. They admit that their historic local, field office approach to land use policies has been inadequate.

> *Unfortunately, the ecological consequences of some best decisions made for a local area can accumulate at intermediate landscape scales where they may contribute to ecosystem change caused by invasive species, altered wildland fire cycles, climate change, urban and industrial development, and other agents. With current ecological understanding and the availability of new tools, the BLM is beginning to systematically identify landscape-scale, ecologically-based conservation and restoration needs and place them on an equal footing with other land management and resource use objectives.*

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[88] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p 10.

[89] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz, An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (2000), pp. i-ii.

[90] http://www.fs.fed.us/land/ecosysmgmt/

[91] Letter of support re San Pedro River Ecosystem Forest Legacy project, Coronado National Forest, Supervisor's Office, Jeanine Derby, Forest Supervisor.

[92] Corbin Newman, regional forester, Southwestern Region of the U.S. Forest Service, in http://www.nature.org/wherewework/northamerica/states/arizona/press/press4031.html

> *To better address these issues, the BLM has decided to use an ecoregional approach that will allow the agency to more efficiently and effectively address broad, landscape-scale issues across administrative boundaries.*[93]

In November of 2009 the BLM announced a "Coordination of Rapid Ecoregional Assessments" with The Nature Conservancy (TNC) and the California Department of Fish and Game (CDFG).[94] Rapid ecoregional assessments are collaborative scientist-manager exercises in assembling and synthesizing targeted information about an ecoregion.[95]

These are possibly less exhaustive but equally focused assessments as those performed by TNC in the Sonoran Desert and Apache Highlands ecoregions. The purposes and methodology are very similar. They propose that a multi-disciplinary, interagency core assessment team of scientists, ecologists, planners, etc. from BLM, CDFG, and TNC be established. Then "BLM will assess the resource values on native species of concern, and regionally important terrestrial and aquatic ecological features and the change agents of invasive species, wild land fire, development (including renewable energy), and climate change."[96] Based upon the assessment findings and other relevant considerations, BLM managers will formulate "Ecoregional Management Strategies" and identify responsive regional actions that should be taken.[97]

The coordination with TNC is hopeful and clearly recognizes their experience and expertise in ecoregional assessments. However, though the BLM is initiating rapid ecoregional assessments throughout the Southwest, their initial project is the Mojave Desert Assessment which is not slated to be completed until January 2011. The Sonoran Desert assessment will have similar goals but is still in its initiation phase. This is unfortunate since a key purpose of the assessments is to "attempt to answer high-level questions related to the appropriate siting of renewable energy and conservation areas" and could clearly bear on the issue at hand.[98] At the least, hopefully BLM's coordination with TNC and agreement to undertake an ecoregional approach can lead them to heed the exhaustive ecoregional assessments already undertaken by TNC and WWF for the areas being reviewed here.

What is an ecoregion? A classic definition by cited by TNC is R. G. Bailey's: "Ecoregions are large areas of land and water that share similar climate, physiography, and biotic communities."[99] The WWF's definition is slightly more elaborated: "An ecoregion is defined as a large area of land or water that contains a geographically distinct assemblage of natural communities that (a) share a large majority of their species and ecological dynamics; (b) share similar environmental conditions, and; (c) interact ecologically in ways that are critical for their long-term persistence."[100]

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[93] http://www.dmg.gov/documents/BR_Ecoregional_Strategy_BLM_102809.pdf
[94] http://www.dmg.gov/documents/BR_Coordntn_of_Rpd_Ecrgnl_Assssmnts_DMG_111909.pdf
[95] http://www.dmg.gov/documents/BR_Ecoregional_Strategy_BLM_102809.pdf
[96] http://www.dmg.gov/documents/BR_Coordntn_of_Rpd_Ecrgnl_Assssmnts_DMG_111909.pdf
[97] http://www.dmg.gov/documents/BR_Ecoregional_Strategy_BLM_102809.pdf
[98] http://www.dmg.gov/documents/BR_Coordntn_of_Rpd_Ecrgnl_Assssmnts_DMG_111909.pdf
[99] Marshall, et al., op. cit., p. 21.
[100] David M. Olson, Eric Dinerstein, Eric D. Wikramana Yake , Neil D. Burgess, George V. N. Powell, Emma C. Underwood, Jennifer A. D'Amico, Illanga Itoua, Holly E. Strand, John C. Morrison, Colby J. Loucks, Thomas F. Allntt, Taylor H. Ricketts, Yumiko Kura, John F. Lamoreux, Wesley W. Wettengel, Prashant Hedao, and Kenneth R. Kassem, "Terrestrial Ecoregions of the World: A New Map of Life on Earth" in *BioScience*: Vol. 51, No. 11, (November 2001), p. 933.

Implicit in that definition is that ecoregions differ from one another in a large majority of their assemblage of species and natural communities. One of the earliest biogeographers determined the differentiation of species between ecoregions to be around 80%.[101] What follows here is a brief overview of the five distinctive WWF terrestrial and freshwater ecoregions that intersect and merge in the MSPRV and the biodiversity that implies. The results of TNC's more detailed ecoregional analyses as they pertain to the MSPRV will be integrated into the review.

2. Sonoran Desert Ecoregion

The Sonoran Desert ecoregion reaches near its easternmost extent in the Lower SPRV. Brown and Lowe map its terminus in the valley at or near the conjunction of Hot Springs and Paige Canyons, and extending northward from there across the basin. It extends well up into the foothills with its signature species saguaro (*Carnegiea gigantea)* creating impressive stands at elevations nearing 4,000 feet, often rivaling densities of Saguaro National Park.

Here follow some of the generic characteristics of the Sonoran Desert ecoregion in which the MSPRV partakes.

- The Sonoran Desert has the greatest diversity of vegetative growth of any desert in the world. (Nabham & Plotkin 1994).[102]
- The Ecoregion harbors a high proportion of endemic plants, reptiles and fish.[103]
- Over 2500 pollinators are known (invertebrates, birds, and bats) including the highest known diversity of bee species in the world (Phillips and Wentworth Comus 2000).[104]
- More than 500 bird species migrate through, breed, or permanently reside in the Ecoregion – nearly two-thirds of all species that occur in northern Mexico, the United States and Canada.[105]
- The Sonoran desert, together with its eastern neighbor the Chihuahuan desert, is the richest area in the United States for birds, particularly hummingbirds.[106]
- The Sonoran Desert is ranked fourth for mammal richness among North American terrestrial ecoregions with 82 species.[107]
- The Sonoran Desert's riverine, aquatic, and riparian resources hold a disproportionate amount of the Ecoregion's biodiversity.[108] Riparian woodlands in the region are now one of the rarest habitat types in North America.[109]

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[101] Udvardy, M.D.F., "A Classification of the Biogeographical Provinces of the World," Morges (Switzerland: International Union of Conservation of Nature and Natural Resources, 1975), IUCN Occasional Paper no.18.

[102] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1310_full.html

[103] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion. p. 2.

[104] Ibid.

[105] Ibid.

[106] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1310_full.html

[107] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), pp. 128-30.

- The Sonoran Desert is ranked by the WWF as one of its Global 200 terrestrial ecoregions.[110] It is among eleven ecoregions in North America "that offer rare opportunities to conserve globally outstanding biodiversity in relatively intact landscapes."[111]

Does the MSPRV offer such a rare opportunity to conserve globally outstanding biodiversity in a relatively intact landscape?

In The Nature Conservancy's ecological analysis of the Sonoran Desert Ecoregion, 100 large landscape were identified across the Ecoregion as a network of Conservation Sites where conservation opportunities should be pursued.[112] The "San Pedro River/Aravaipa Creek Conservation Site" was listed fourth out of those 100. All "Conservation Target Taxa" were represented, and it was in the top three of bird and fish targets.[113]

Ecoregional assessments, as the BLM notes, have the end purpose of formulating "Ecoregional Management Strategies" and identifying responsive regional actions that should be taken. It is likewise TNC's intent that "...a Conservation Site represents a focal point for developing public awareness and implementing conservation actions so that the Conservation Targets identified in this exercise, as well as all of the other species for which our selected targets serve as a surrogate, remain viable on the landscape."[114]

In their "Summary of Status and Priority Inventory Needs for Ecological Groups in the Sonoran Desert Ecoregion," the urgency for conservation action for the "Desert Riparian Woodland" is rated as "High." "Given the high concentration of native plants and animals dependent on these habitats extensive restoration is critical."[115] There are several of these Mixed Broadleaf Deciduous Riparian Forests over or through which the projected Sun Zia routes pass, for example Edgar Canyon, Buehman Canyon and Bullock Canyon.[116] For the "Semi-Desert Grassland", across which all of the MSPRV routes project to pass, again the urgency for action is rated as "High."[117] And for the "Streams, Seeps and Sinks", which are scattered through this Conservation Site, again the urgency for action is "High."

The WWF concurs in their "Priority Activities to Enhance Biodiversity Conservation" for the need to establish protection for habitat along the lower San Pedro River.[118] If the BLM was ready to coordinate with TNC on an ecoregional assessment in the Sonoran Desert as they are in the Mojave, it is difficult to see how they could not concur as well.

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[108] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (2000), .p. 34.

[109] Taylor Ricketts, op. cit., p. 338.

[110] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), p. 202.

[111] Taylor Ricketts, op. cit., p. 98.

[112] Marshall, R.M., op. cit., p. i.

[113] Ibid., pp. 29-30.

[114] Ibid., p. 38.

[115] Ibid., Appendix 11.

[116] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan, March 2000, p. 25.

[117] Marshall, R.M., op. cit., Appendix 11.

[118] Taylor Ricketts, op. cit., p. 340.

3. Chihuahuan Desert Ecoregion

The Chihuahuan Desert ecoregion enters the MSPRV from the south and east until it transitions to the Sonoran Desert ecoregion near the conjunction of Hot Springs and Paige Canyons. Following David Brown, the semidesert grasslands will largely be considered as part of the Chihuahuan ecoregion. "Semidesert grassland adjoins and largely surrounds the Chihuahuan desert, and with the possible exception of some areas in west central Arizona, it is largely a *Chihuahuan semidesert grassland*." [119] Where further north in the SPRV one would see forests of saguaros, here one is likely to see equally dense stands of Palmer's Agave (*Agave palmeri*).

Here follow some of the generic characteristics of the Sonoran Desert ecoregion in which the MSPRV partakes.

- "The Chihuahuan desert is one of the three most biologically rich and diverse desert ecoregions in the world, rivaled only by the Great Sandy Tanmi Desert of Australia and the Namib-Karoo of southern Africa (Olson and Dinerstein 1998)."[120]
- Approximately 3,500 plant species live in this desert.[121]
- Estimates of endemism state that there could be up to 1000 endemic species.[122]
- The Chihuahuan desert, together with its western neighbor the Sonoran desert, is the richest area in the United States for birds, particularly hummingbirds.[123] It is first in bird richness of North American ecoregions with 279 species.[124]
- It is first in mammal richness of North American ecoregions with 109 species.[125]
- "Reptiles show a maximum for species richness in the Chihuahuan Desert (103 species).... Only the Great Sandy Desert of Australia supports a richer desert reptile fauna than the Chihuahuan Desert (Cogger 1992; Flannery 1994)."[126]
- The Chihuahuan Desert ranks globally outstanding in cactus richness (Olson and Dinerstein, 1998).[127] It features over 100 species of cacti.[128]
- The Chihuahuan also ranks highest among North American ecoregions in butterfly richness.[129] It features 250 species of butterflies.[130]
- The Chihuahuan Desert is ranked by the WWF as one of its Global 200 terrestrial ecoregions.[131] It is ranked as a "Class I" ecoregion, i.e., "Globally outstanding ecoregions requiring immediate protection of remaining habitat and extensive restoration."[132]

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[119] David E. Brown, Editor, "Biotic Communities of the American Southwest – United Sates and Mexico," in *Desert Plants* (Vol. 4, No's 1-4, 1982) p. 123.
[120] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1303_full.html
[121] Ibid.
[122] Ibid.
[123] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na1310_full.html
[124] Taylor Ricketts, op. cit., pp. 128-30.
[125] Ibid.
[126] Ibid., p. 47.
[127] Ibid., p. 93.
[128] Ibid., p. 341.
[129] Ibid., pp. 128-30.
[130] Ibid., p. 341.

The routes proposed by SunZia run through vast areas of this Chihuahuan semidesert grassland and across Desert Riparian Woodlands. Whatever the logistic advantages, it seems clear that these routes are seen as having the advantage of generally not partaking in the protected status of either the mountains or the San Pedro River corridor, being mainly state trust lands. But ecologists warn us not to relegate these "desert seas" or grassland basins between the "sky islands" to second class status, for the change in major biotic communities across the landscape gradients is critical to the biodiversity and evolution of the region.[133] Furthermore, besides serving transitional connectivity between these upland and riverine communities, the grasslands are critical in their own right and diminishing in extent.

> *Approximately 43% of the region, historically, was comprised of grasslands (Gori, Enquist 2003). Today that figure has been reduced to 22%, highlighting the fact that the basins of this region have experienced the heaviest human impacts. Among those impacts is the absence of fire, which has contributed to an increase in shrubs at the expense of grasses. ...the greatest areas of grassland with restoration potential are found on federal and state lands.*[134]

Cutting through these semidesert grasslands, and again connecting the mountains and the San Pedro River, are tributary stream systems, some of the same "Desert Riparian Woodland" that passes through portions of the Sonoran Desert ecoregion. "[T]he riparian communities along these streams provide migratory birds and pollinating insects and bats with critical trans-hemispheric travel corridors. ...It is difficult to overstate the importance of Arizona's freshwater systems. The status of these resources – their quantity, quality, distribution, and the biological diversity they harbor, is the single most important issue to both the sustainability of biodiversity and human communities in Arizona."[135]

Were BLM to conduct a "Rapid Ecoregional Assessment" of this area in cooperation with TNC as they are proposing to do in the whole Southwest, they might be compelled to agree with TNC's findings. Using criteria similar to the Sonoran Ecoregional analysis, there are actually four out of 91 Conservation Sites that were selected in the MSPRV that are of critical ecoregional importance. All four are transgressed by proposed SunZia routes:[136]

- The Winchester Mountains, Allen Flat Conservation Site (no. 53), through which a significant portion of the MSPRV SunZia routes pass, is ranked as the number 9 conservation priority in the ecoregion, and the number 6 priority for conservation areas with aquatic systems.
- The Buehman Canyon/Bingham Cienega Conservation Site (no. 48) is the number 54 conservation priority in the ecoregion, and the number 29 priority for conservation areas with aquatic systems.

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[131] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), p. 203.

[132] Taylor Ricketts, op. cit., p. 83.

[133] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p. 2.

[134] Ibid., p. 66.

[135] Ibid., p. 6.

[136] Ibid., pp. 46-9.

- The Kielberg Canyon Conservation Site (no. 46) is the number 64 conservation priority in the ecoregion, and the number 37 priority for conservation areas with aquatic systems.
- The Aravaipa Watershed Conservation Site (no. 7) deserves separate and wholesale attention in its own right as another potential SunZia route. It is the number 12 conservation priority in the ecoregion, and the number 7 priority for conservation areas with aquatic systems.

Again, a major point of these assessments is to prescribe policy and management priorities. The Chihuahuan ecoregion received the WWF's highest priority in North America, and thus it would certainly be true here that "...some ecoregions support such outstanding biological diversity and face such severe threats that they deserve immediate and proportionally greater attention from conservationists."[137] TNC's more local assessment recommendation is clear and pointed, "For private and state trust lands... directing land subdivision and development away from the conservation areas identified in this assessment."[138]

Also, in recognition of the important role these grassland and riparian areas play as transitions and corridors between mountains and river, particularly in a time of climate change, the recommendations are: "(1) Reduce edge effects and promote landscape connectivity...; (2) ...avoiding fragmentation of natural areas...; (3) restore or maintain natural fire regimes; (4) ensure the persistence of genetic variation within species; and (5) attempt to minimize exogenous threats to vulnerable habitats (Halpin 1997, Noss 2001, Hannah et al. 2002).[139] The import for SunZia's trans-valley routes that pass substantially through these Conservation Sites could hardly be greater.

4. Madrean Ecoregion

The Madrean Sky Islands form a transition between the southern end of the Rocky Mountain cordillera and the northern end of Mexico's Sierra Madre Occidental. They can be considered the northern extension of the Sierra Madre Occidental.[140]

> *The biodiversity of the ecoregion is diverse and complex since it harbors both subtropical and temperate flora and fauna.... The mixing of subtropical and temperate plants and animals also creates unusual ecological interactions and assemblages. In general, the lower elevations of the Sky Islands include many subtropical species at their northernmost limit, while higher elevations support many montane species at their southern limit (McLaughlin, 1995).*[141]

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[137] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 83.

[138] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p. 66.

[139] Ibid., pp. 66-7.

[140] Taylor Ricketts, Erik Dinerstein, David Olson, Colby Loucks et al., Terrestrial Ecoregions of North America: A Conservation Assessment (Washington D.C., Island Press, 1999), p. 258.

[141] Ibid.

Brown classifies this area as "Madrean Evergreen Woodland."[142] In the MSPRV, at lower elevations the woodland is typically open and often dominated by Emory Oak (*Quercus emoryi*) before transitioning to Madrean pines at higher elevations. A proposed westernmost SunZia route may travel through portions of this ecoregion. Whether or not that is the case, many Madrean fauna species cross the valley, and the "Mixed Broadleaf Deciduous Riparian Forests" of the Sonoran and Chihuahuan zones intermingle up the canyons. The Sky Islands frame the MSPRV, and the watershed is an ecological unit.

Here follow some of the generic characteristics of the Madrean Sky Island ecoregion in which the MSPRV partakes. (Some of the characteristics attributed to TNC's Apache Highlands ecoregion include portions of other ecoregions considered here.)

- "The mountains of the Apache Highlands are unique on Earth, for they represent the only sky island complex that extends from the sub-tropical to the temperate latitudes (Warshall 1995). The result of these geographic and geologic phenomena is an unusually rich fauna and flora…."[143]
- More than 4000 vascular plant species have been identified, as have 110 mammals (Felger et al. 1997, Simpson 1964).[144]
- At least 468 bird species have been verified in southeastern Arizona during the past 50 years, along with more than 240 butterfly species and 580 species of wood-rotting fungi (Edison et al. 1995, Bailowitz and Brock 1991, Gilbertson and Bigelow 1998).[145]
- The Madrean Sky Islands Montane Forests have produced a relatively high number of endemic species.[146]
- Relatively intact, lower-elevation riparian woodland is now extremely rare throughout the region.[147]
- More than 75 reptile species, making it one of the most diverse reptile regions in North America.[148]
- More than 190 snail species, of which 60 are endemic, are found only in this ecoregion.[149]
- The Gila River Basin, a significant part of the ecoregion, contains one of the most unique fish assemblages in North America.[150]
- The Madrean ecoregion is ranked by the WWF as one of its Global 200 terrestrial ecoregions.[151] It is among eleven ecoregions in North America "that offer rare

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[142] Brown, op. cit., p. 59.
[143] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p. 2.
[144] Ibid.
[145] Ibid.
[146] Taylor Ricketts, op. cit., p. 52.
[147] Ibid., p. 259.
[148] http://www.nature.org/wherewework/northamerica/states/arizona/preserves/art1942.html
[149] Ibid.
[150] Ibid.

> opportunities to conserve globally outstanding biodiversity in relatively intact landscapes."[152]

Again, because TNC's ecoregional assessment for the Apache Highlands does not distinguish ecoregions the same as the WWF, all of the Conservation Sites singled out as particularly important for protection in the MSPRV also range into the Madrean Sky Islands.

> *...Some conservation areas incorporate continuous landscapes from valley bottoms to mountain tops which, if fully protected, should buffer conservation targets against the impacts of climate-induced changes in habitat. Other areas form continuous mountain-to-mountain spans that are needed to maintain habitat connectivity for wide-ranging, forest-dwelling species such as black bear.*[153]

Those continuous landscapes include the Winchester Mountains, Allen Flat Conservation Site, The Buehman Canyon/Bingham Cienega Conservation Site, the Kielberg Canyon Conservation Site and the Aravaipa Watershed Conservation Site referenced in the Chihuahuan Desert ecoregion section above.

Likewise, the assessment recommendations would also apply: "(1) Reduce edge effects and promote landscape connectivity...; (2) ...avoiding fragmentation of natural areas...; (3) restore or maintain natural fire regimes; (4) ensure the persistence of genetic variation within species; and (5) attempt to minimize exogenous threats to vulnerable habitats (Halpin 1997, Noss 2001, Hannah et al. 2002).[154] The WWF recommendation for the area is similar: "Designate more of the Sky Islands as wilderness and identify or restore functional linkage habitat among the various ranges."[155]

5. Arizona Mountains Ecoregion

The Arizona Mountains ecoregion occurs in the MSPRV in areas corresponding to Brown and Lowe's Petran Montane Conifer Forest in the higher elevations of the Sky Islands. This ecoregion corresponds to Omernik's (1995) ecoregion #23 (Arizona/New Mexico Mountains) and there is a fair degree of overlap with Bailey's (1995:64) M313, Arizona-New Mexico Mountains Semi-Desert-Open Woodland-Coniferous Forest-Alpine Meadow Province.[156] The WWF identifies portions of the Galiuro Mountains as representative.[157] Ponderosa Pine (*Pinus ponderosa*) forests often dominate. "Vegetation zones in this ecoregion resemble the Rocky Mountain Life Zones but at higher elevations (Bailey 1995, 64)."[158]

This ecoregion is also the southern extent of spruce-fir forests and the northern extent of many Mexican wildlife species, including tropical birds and reptiles. "In general, this ecoregion was

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[151] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), p. 202.
[152] Taylor Ricketts, op. cit., p. 98.
[153] http://www.fs.fed.us/rm/pubs/rmrs_p036/rmrs_p036_375_379.pdf
[154] Ibid., pp. 66-7.
[155] Taylor Ricketts, op. cit., p. 260.
[156] http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na0503_full.html
[157] Ibid.
[158] Taylor Ricketts, op. cit., p. 256.

considered regionally outstanding because of its relatively high level of species richness (2,817 species) and endemism (132 species)."[159]

The Arizona Mountains were also selected by the WWF as one of the Global 200, i.e. one of 142 of the 867 worldwide terrestrial ecoregions, and only one of eleven in North America. This ecoregion was elevated to Global 200 status because of its extraordinary ecological phenomena, containing extensive intact habitats and large vertebrate assemblages.[160]

Among the management recommendations were several areas "as potential corridors for minimizing fragmentation and insularization effects, including connecting the Gila complex with the Sky Islands to the south for future wolf movements; and connecting riverine habitat through stream buffers designed to restore degraded fish populations."[161] A recommended priority activity to enhance biodiversity conservation is to protect and restore degraded native fish populations through habitat restoration in degraded riparian areas.[162]

6. Gila Freshwater Ecoregion

To this point only terrestrial ecosystems in the MSPRV have been reviewed, but similar analyses have been performed for freshwater ecosystems. Unfortunately North America's freshwater environments are among the most threatened.[163] Thus, with nearly every freshwater system suffering from some degree of degradation, there is an urgent need to establish priorities for conservationists and land managers. The World Wildlife Fund again conducted an extensive conservation assessment with support from the U.S. EPA "...as an initial step in identifying those areas where protective and restorative measures should be implemented first."[164]

The Gila freshwater ecoregion covers most of southern Arizona and part of southwestern New Mexico and extends into northern Sonora in Mexico. The major watershed in this ecoregion is that of the Gila River, a tributary to the lower Colorado River. "As many as seven fish species that are not found in the Colorado ecoregion's waters can be considered endemic to the Gila ecoregion; given a total of nineteen native species found in the Gila, this is an impressive number of endemics."[165] The Gila Ecoregion's Major Habitat Type is "Xeric-Region Rivers, Lakes, and Springs." Its Biological Distinctiveness is "Continentally Outstanding", the class just below "Globally Outstanding." Its Conservation Status is "Critical" i.e. the most severely threatened.[166]

Of 76 freshwater ecoregions in North America, 41 are "Continentally Outstanding," and only 5 of those are "Critical."[167] The term "critical" means that "The remaining intact habitat is restricted to isolated areas or stream segments that have low probabilities of persistence over the

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[159] Ibid.

[160] David M. Olson and Eric Dinerstein, "The Global 200: Priority Ecoregions for Global Conservation", in *Annals of the Missouri Botanical Garden*: 89 (2002), pp. 207-8.

[161] Taylor Ricketts, op. cit., p. 257.

[162] Ibid., p. 258.

[163] Robin Abell, David M. Olson, Eric Dinerstein, Patrick T. Hurley, James T. Diggs, William Eichbaum, Steven Walters, Wesley Wettengel, Tom Allnuff, Cobly J. Loucks and Prashant Hedao, Freshwater Ecoregions of North America: A Conservation Assessment (Washington, D.C.: Island Press, 2000), p. 1.

[164] Ibid., p. 2.

[165] Ibid., p. 183.

[166] Ibid.

[167] Ibid., p. 88.

next 5-10 years without immediate or continuing protection and restoration."[168] The reason for that assessment is that the expanding urbanization of the Phoenix-Tucson area is seen as a major threat by conservationists to the increasingly rare natural constituents of the San Pedro River and Aravaipa Creek.[169] As Tom Collazo, of the Arizona Chapter of The Nature Conservancy notes:

> *...the point that I wanted to make about the Sun Corridor and the million people on the other side of the Valley is that .... all this energy is coming to support the projected future population growth of the Sun Corridor: basically the area from Prescott down to the Mexican border. We have to make some choices as to what parts of the Sun Valley we are going to set aside for conservation and where we're going to choose to have growth occur. And our opportunities to protect outstanding natural values plus wildlife as well as recreation and culture, our best opportunity here is in the San Pedro Valley.*
>
> *Infrastructure projects, I think this a good point to be made as well, should follow a hierarchy of avoid, minimize, and mitigate. And I think we're still at the point where there are very strong arguments that say that San Pedro Valley is definitely in a critical area.*[170]

The data supports that assessment. The WWF gathered taxonomic and regional experts to undertake a preliminary identification of sites across North America where intervention – from dam removal to increased protection – would serve as a first step toward achieving conservation targets. Sites were selected on the presence of important biodiversity targets. Priority sites were selected, for example, because they are places where rare habitats remain intact or where important species assemblages could be restored.[171]

The San Pedro River and Aravaipa Creek, tributary to the Gila, is Site Number 102 of 146 sites listed in the WWF ecoregional assessment as "Important Sites for the Conservation of Freshwater Biodiversity in North America."[172] This is not surprising for a free-flowing river within a largely intact and unfragmented landscape. In the United States, only 2 percent of the nation's 5.1 million kilometers of rivers and streams remain free flowing and undeveloped![173]

As the WWF notes however, "Continental-scale analyses can guide us to the most distinctive and threatened freshwater ecoregions, but conservation requires integrated actions at the scale of sites as well as whole ecoregions. For this we need to understand how biodiversity features are distributed within ecoregions and how individual sites, habitats, and assemblages fit into a broader conservation strategy. Ecoregion-based conservation (ERBC) approaches may be a useful way to begin to preserve or restore the distinct biological features highlighted in this study."[174]

In that regard we are fortunate, for The Nature Conservancy has already performed assessments at the scale of sites for ecoregions inclusive of the MSPRV. In their ecological analysis of the Sonoran Desert Ecoregion, the "San Pedro River/Aravaipa Creek Conservation Site" was listed

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[168] Ibid., p. 20.
[169] Taylor Ricketts, op. cit., p. 339.
[170] Tom Collazo, AZ TNC Director, in a January 13, 2010 address in Cascabel, AZ re the SunZia project.
[171] Ibid., pp. 109-10.
[172] Ibid., p. 111.
[173] Ibid., p. 1.
[174] Ibid., p. 109.

fourth out of the 100 Conservation Sites identified.[175] In their analysis of the Apache Highlands, the "Aravaipa Watershed Conservation Site" is the number 12 conservation priority in the ecoregion, and the number 7 priority for conservation areas with aquatic systems. The "Winchester Mountains, Allen Flat Conservation Site" is ranked as the number 9 conservation priority in the ecoregion, and the number 6 priority for conservation areas with aquatic systems. The "Buehman Canyon/Bingham Cienega Conservation Site" is the number 54 conservation priority in the ecoregion, and the number 29 priority for conservation areas with aquatic systems. The "Kielberg Canyon Conservation Site" is the number 64 conservation priority in the ecoregion, and the number 37 priority for conservation areas with aquatic systems.[176] TNC has integrated the terrestrial and freshwater data into their ecoregional assessments, and thus the distinction of the higher priority when aquatic systems are considered.

In discerning "Ecoregional Management Strategies" and identifying regional actions that should be taken from these ecoregional assessments, the recommendations for aquatic systems are particularly instructive.

> *Freshwater ecoregions differ from their terrestrial counterparts in two important and related ways. First, because of the connectedness of freshwater habitats, spatial and functional linkages across large distances are strong, with upstream activities manifested in downstream effects. Second, conservation of a given freshwater site must nearly always occur at the watershed scale.*[177]

Among the recommended "Priority Activities to Enhance Biodiversity Conservation" are:

- "Reclaim and manage entire subdrainages with multiple tributaries in which populations of imperiled species persist…."
- "Work with land management agencies to sufficiently regulate potentially damaging activities on lands under their jurisdiction."[178]

In sum, there are four "Globally Outstanding" terrestrial ecoregions that merge in the MSPRV to create an environment of exceptional biodiversity. Within its largely intact and unfragmented landscape, finer scale ecological assessments have discerned five large area conservation sites that are high priority for conservation with consistent recommendations against fragmentation. But in the final analysis, it is the San Pedro River subdrainage and its multiple tributaries in which populations of imperiled species persist that tie the MSPRV ecosystem together into a priority site that must be conserved at the watershed scale.

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[175] Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion. pp. 29-30.

[176] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), pp. 46-9.

[177] Abel, op. cit., p. 87.

[178] Ibid., p. P. 184.

D. Connectivity:

Because four terrestrial ecoregions intersect in the MSPRV does not imply that it is a fractured ecosystem. There are of course no lines. "Ecoregional boundaries are approximations of what in reality are gradual shifts in ecological communities."[179] The ecoregions and their species intergrade to create exceptional biodiversity and integrate into a complex watershed-wide interconnected ecosystem.

Two elements of that connectivity have been noted above. First, the "desert seas" or Semidesert Grassland and Sonoran and Chihuahuan Desertscrub basins between the "sky islands" serve as transitional connections between the upland and riverine communities.[180] These biotic formations integrate together along the eastern and western slopes of the MSPRV and are the primary biomes through which the SunZia routes propose to pass. This element of connectivity was particularly noted in Pima County's acquisition of the A-7 Ranch.

> *Within the San Pedro River watershed, the middle basin landscape provides a practical opportunity to create protected connections between Sky Island mountain ranges that includes high elevation forest systems and diverse tributary canyons. Furthermore, these landscape connections provide linkage in a more extensive integral landscape that connects mountains, grasslands, and desert between the White Mountains and Mexico.*[181]

Second, as just reviewed, the aquatic systems represented by riparian habitat in the mountains and canyons directly connect those regions with the valley river. "[B]ecause of the connectedness of freshwater habitats, spatial and functional linkages across large distances are strong, with upstream activities manifested in downstream effects.[182]

Furthermore, the grasslands and the water systems are not independent units, but are themselves intimately connected. "Because rivers are products of their watersheds, riparian preserves can be affected by off-site activities that alter the hydrologic cycle (Pringle 2000, 2001).[183] There is a strong linkage between watersheds and the rivers that drain them. That is, "watershed conditions influence important hydrologic and geomorphic processes such as the volume of surface runoff and the amount of sediment delivered to streams."[184]

> *Watershed condition is largely determined by upland vegetation and soil type. When properly functioning, watersheds capture, store, and release moisture efficiently, providing high infiltration of precipitation into the soil, low movement of soil off-site, reduced flood peaks, high quality water, and reduced evaporation of water from the soil profile. Attaining proper function and desired plant*

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[179] Taylor Ricketts, op. cit., p. 3.

[180] Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, P. Comer, An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion (2004), p. 2.

[181] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan (March 2000), p. 28.

[182] Abel, op. cit., p. 87.

[183] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), p. 371.

[184] Ibid., p. 352.

communities in the uplands contributes the physical and biological stability necessary to restore and maintain the aquatic and riparian ecosystem.[185]

The condition of upland areas has a major influence on the condition of riparian areas. Properly functioning uplands with good ground cover of vegetation will increase infiltration and extend base flows while reducing runoff, soil erosion and peak flows.[186]

Semidesert Grasslands, Desert Scrub and aquatic systems not only connect biotic systems, but faunistic systems as well. Wildlife corridors have received increasing attention among ecologists and conservationists in recent years.

If one overriding conclusion can be drawn from this global review of experience, it is that programmes that aim to conserve biodiversity at the landscape, ecosystem or ecoregion scale through interconnected and buffered systems of protected areas are moving into the mainstream of conservation practice. Moreover, based on the number of such programmes that have been initiated around the world in recent years, it would be fair to conclude that the increasingly broad application of the ecological network represents one of the most significant strategic developments in conservation planning over the past decade. A few simple figures are sufficient to demonstrate the magnitude of the shift: this review, although describing only a proportion of the initiatives that are currently underway, nevertheless traced about 200 ecological networks, corridors and comparable projects, plus 26 flyways, 482 Biosphere Reserves in 102 countries and 11 Bonn Convention agreements to conserve populations of migratory species. Bearing in mind that ecological networks and corridors only began to generate broad interest in the mid-1990s, this is a remarkable development. In fact, the changes that we are witnessing are more fundamental than simply the scale and the configuration of the territories that are managed for conservation purposes: they extend to the management objectives, competences, techniques and skills that are applied, the perceptions that underly the programmes, the involvement of local communities and the sources of funding. Ecological networks are above all a manifestation of an array of new insights into how conservation needs can effectively be addressed. Indeed, when viewed in a broader context these changes amount to a paradigm shift in protected-areas planning, as Phillips (2003) has elegantly demonstrated (see Table 7.1; see also Crofts, 2004).[187]

The international consensus on wildlife corridors, linkages, or connectivity (whatever the chosen terminology) is well established. The CBD-UNEP global survey of wildlife linkages gives some of the background:

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[185] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office (May 1998), pp. 22-3.

[186] Ibid., p. 40.

[187] Graham Bennett and Kalemani Jo Mulongoy "Review of Experience with Ecological Networks, Corridors and Buffer Zones," (CBD Technical Series No. 23 [Convention on Biological Diversity, United Nations Environmental Programme], (March 2006).

communities in the uplands contributes the physical and biological stability necessary to restore and maintain the aquatic and riparian ecosystem.[185]

The condition of upland areas has a major influence on the condition of riparian areas. Properly functioning uplands with good ground cover of vegetation will increase infiltration and extend base flows while reducing runoff, soil erosion and peak flows.[186]

Semidesert Grasslands, Desert Scrub and aquatic systems not only connect biotic systems, but faunistic systems as well. Wildlife corridors have received increasing attention among ecologists and conservationists in recent years.

If one overriding conclusion can be drawn from this global review of experience, it is that programmes that aim to conserve biodiversity at the landscape, ecosystem or ecoregion scale through interconnected and buffered systems of protected areas are moving into the mainstream of conservation practice. Moreover, based on the number of such programmes that have been initiated around the world in recent years, it would be fair to conclude that the increasingly broad application of the ecological network represents one of the most significant strategic developments in conservation planning over the past decade. A few simple figures are sufficient to demonstrate the magnitude of the shift: this review, although describing only a proportion of the initiatives that are currently underway, nevertheless traced about 200 ecological networks, corridors and comparable projects, plus 26 flyways, 482 Biosphere Reserves in 102 countries and 11 Bonn Convention agreements to conserve populations of migratory species. Bearing in mind that ecological networks and corridors only began to generate broad interest in the mid-1990s, this is a remarkable development. In fact, the changes that we are witnessing are more fundamental than simply the scale and the configuration of the territories that are managed for conservation purposes: they extend to the management objectives, competences, techniques and skills that are applied, the perceptions that underly the programmes, the involvement of local communities and the sources of funding. Ecological networks are above all a manifestation of an array of new insights into how conservation needs can effectively be addressed. Indeed, when viewed in a broader context these changes amount to a paradigm shift in protected-areas planning, as Phillips (2003) has elegantly demonstrated (see Table 7.1; see also Crofts, 2004).[187]

The international consensus on wildlife corridors, linkages, or connectivity (whatever the chosen terminology) is well established. The CBD-UNEP global survey of wildlife linkages gives some of the background:

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[185] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office (May 1998), pp. 22-3.

[186] Ibid., p. 40.

[187] Graham Bennett and Kalemani Jo Mulongoy "Review of Experience with Ecological Networks, Corridors and Buffer Zones," (CBD Technical Series No. 23 [Convention on Biological Diversity, United Nations Environmental Programme], (March 2006).

> *...the ecological- network model evolved out of developments in ecological theory, primarily MacArthur and Wilson's equilibrium theory of island biogeography and metapopulation theory. The most important insight that followed from these theories was that habitat fragmentation increases the vulnerability of species populations by reducing the area of habitat available to local populations and limiting opportunities for dispersal, migration and genetic exchange. Interest therefore grew in developing conservation approaches that promoted ecological coherence at the landscape scale.*
>
> *Corridors in the sense of functional linkages between sites — are essentially devices to maintain or restore a degree of coherence in fragmented ecosystems. In principle, linking isolated patches of habitat can help increase the viability of local species populations in several ways:*
>
> *• by allowing individual animals access to a larger area of habitat — for example, to forage, to facilitate the dispersal of juveniles or to encourage the recolonization of "empty" habitat patches*
> *• by facilitating seasonal migration*
> *• by permitting genetic exchange with other local populations of the same species (although this generally requires only very occasional contact)*
> *• by offering opportunities for individuals to move away from a habitat that is degrading or from an area that is under threat (which may become increasingly important if climate change proves to have a serious impact on ecosystems)*
> *• by securing the integrity of physical environmental processes that are vital to the requirements of certain species (such as periodic flooding)*[188]

There has been some debate as to the effectiveness of wildlife corridors, as is the nature of science.

> *A further source of evidence on the effect of ecological networks is the experience that has been generated through corridor projects. Over the past decades, a substantial literature on connectivity has been generated and many projects have produced measurable results. Good examples are the Bow Valley corridor in Canada and various elephant corridors in Africa and Asia. Although the concept of corridors has generated a lively debate over many years, evidence from the increasing number of projects shows that appropriately designed corridors generally meet the expectations of how they will function in practice. Moreover, most of the documented examples of corridors suggest that establishing or maintaining the linkage was the most cost effective means of achieving the conservation objective. Indeed, in many cases the corridor was demonstrably the only feasible and practicable option to achieve the objective, while in other cases alternative courses of action — such as enlarging a protected area — would have involved intractable problems.*[189]

The CBD global review of ecological networks makes this conclusive assessment about biodiversity conservation and connectivity:

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[188] Ibid.
[189] Ibid.

> *The first lesson that can be drawn is that the programmes are explicitly attempting to establish and maintain the environmental conditions that are necessary to secure the long-term conservation of biodiversity rather than limiting themselves to the in-situ protection of valuable sites or threatened species populations. This involves, in the main, safeguarding assemblages of habitat large enough and of sufficient quality to support species populations, providing, where necessary, opportunities for movement between these reserves, buffering the network from potentially damaging human activities and promoting sustainable forms of land use in the contiguous landscapes. That this model applies to species that require access to very large areas or need to migrate across a landscape is obvious. ...For many species, extensive linked and buffered systems of core areas are not immediately essential to their survival. ...Even for many of these species, however, other factors become important for their long-term viability, such as the survival of a full complement of species within an ecosystem, the opportunity to move away from an existing area that comes under threat, and the occurrence of periodic natural disturbances that may require some form of linkage, such as flooding. Moreover, the island biogeography finding that the risk of extinction decreases as habitat size increases still holds for a large number of species.*[190]

This international embrace of the wildlife corridor and connectivity concept is no less evident in the U.S. and in Arizona. A case in point is the "Arizona Wildlife Linkages Assessment Document" conducted by Arizona Department of Transportation (ADOT) and Arizona Game and Fish Department (AGFD) with involvement by FHA, BLM, USFS, USFW, Northern Arizona University, Sky Island Alliance, and the Wildlands Project. That report recognizes, as does nearly all of the literature, that:

> *The most significant threats to Arizona's wildlife populations are habitat alteration, fragmentation, and loss. Some of the leading causes of these threats are development, transportation corridors and land conversion. Worldwide, 85% of endangered species are imperiled by habitat fragmentation (Shaffer et al. 2000). ...As connectivity between key habitat elements is lost, isolation deprives species of their daily, seasonal and lifetime needs. Loss of connectivity deprives animals of resources, prevents some animals from finding mates, reduces gene flow, prevents animals from re-colonizing areas where extirpations have occurred, and ultimately prevents animals from contributing to ecosystem*

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[190] Ibid.

[191] http://www.azdot.gov/Highways/OES/AZ_WildLife_Linkages/assessment.asp

> *Biologists and managers working in the Sonoran Desert Ecoregion took an additional step in considering landscape connectivity. Region IV of the Arizona Game and Fish Department (AGFD) identified several linkages that are at this time located within habitat blocks (see Table 4-1). In most cases these are publicly owned desert lowlands between publicly owned desert mountain ranges. Because these lowland areas could be used for roads, bombing ranges, military housing, and other human uses while remaining in public ownership, it is useful to document the connectivity value of these lands before adverse activities are proposed.*[192]

The result of their inventory was that the entire valley area from Soza Wash to San Manuel in the MSPRV is mapped as "Potential Wildlife Linkages" number 82 between the "Habitat Blocks" of the Rincon-Catalina Mountain and Winchester-Galiuro Mountain complexes. These linkage zones are in Fig. 6-1 of the "Arizona's Wildlife Linkages Map."[193]

The AGFD conclusion and recommendation is:

> *This approach should enable future projects to avoid significant barriers to wildlife movement. In the long run, being pro-active will be less expensive, and possibly more beneficial to wildlife, than some of the retrofitting projects needed in fracture zones.*[194]

In addition to these landscape linkages, the canyons and riparian areas have been particularly noted for their connective function. The Arizona Open Land Trust partnered with TNC to map conservation priorities for Cochise, Graham, Greenlee, Pinal and Santa Cruz counties, and in identifying "Imperiled Movement Corridors," included Hot Springs/Paige Canyons and Redfield/Buehman Canyons as the main SPR cross-valley corridors.

As the Sonoran Desert Conservation Plan observed,

> *The Middle San Pedro Subarea encompasses the western portion of several wildlife/openspace corridors connecting the Rincon and Santa Catalina Mountains to the Galiuro Winchester Mountains. These corridors can in part be defined by canyon pairs that exist across the landscape. For example, Buehman Canyon and Redfield Canyon; Paige Canyon and Hot Springs Canyon; Soza Canyon and Soza Wash are all pairs of large drainages that provide travel corridors for various wild species across the basin.*[195]

The Sonoran Desert Conservation Plan considered wildlife corridors a *raison d'être* and main function of their management.

> *Dr. David Gori (October 1997) discussed wildlife corridors in conjunction with The Nature Conservancy's assessment of acquisition of the Bellota Ranch as follows. 'The primary ecological value of the [Bellota] ranch may be in its function as a wildlife corridor, linking up large mammal populations in the Galiuro, Santa Catalina and Rincon mountains. ...Forest birds (Mexican spotted*

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[192] Ibid.
[193] Ibid.
[194] Ibid.
[195] Resources of the Middle San Pedro Subarea: Sonoran Desert Conservation Plan (March 2000), p. 28.

> *owl) may also benefit as several studies have shown increased immigration rates to habitat patches when corridors are present (Dunning et al 1995, Haas 1995, Suanders and de Rebeira 1991, Machtans et al 1996). The property can function as a corridor (or part of a corridor) in several ways: (1) it can connect higher elevation habitats in the Rincons, Catalinas, and Galiuros and reduce extinction rates from these habitats, increase recolonization rates after local extinction, and permit gene flow between habitats; (2) it can allow an interchange of wildlife between different habitats (e.g., Sonoran desert to desert grassland to juniper-park savannah, etc.); (3) it can allow wildlife to migrate seasonally (e.g., elevational migration in birds, coyotes, bears, desert bighorn); and (4) permit species to change environments in response to environmental change (e.g., global warming).*[196]

The desired outcome was that "Wide-ranging animals (black bear, desert bighorn, mountain lion, bobcat, coati-mundi, Coue's white-tailed deer, mule deer, and possibly jaguar) would continue to move across the valley between the mountain ranges."[197] Wildlife linkages were also important in The Muleshoe Ecosystem Management Plan. "The riparian corridors are important migration and movement corridors for wildlife such as black bear, coati, and neotropical bird species."[198] The AGFD Arizona Wildlife Linkage Assessment makes similar points.

> *The riparian habitat/linkage zones are unique because they function as both habitats and linear linkage zones. They provide essential (core) habitat for aquatic organisms such as fish, aquatic plants, some amphibians, and aquatic invertebrates. In addition, the riparian vegetated areas are important for a variety of wildlife and plant species because they provide the only habitat for some species (cottonwoods, willows, some flycatchers and warblers), prime habitat for many other species, water for an even larger number of species, travel paths for mammals, reptiles, and amphibians, and migratory paths for over half of the bird species that live in or visit Arizona. Thus, each river is critical both as habitat and as the spine of a potential movement corridor.*[199]

It is important to observe that birds, and in particular neotropical migrants, also utilize these riparian areas as connective corridors. That observation is not limited to the SPR. As Susan Skagen found in her renowned USGS study, the SPRV watershed's mountain and canyon riparian oases are as important for migratory birds as the mainstem river.[200]

Further, these riparian areas are improving due to improved land management. For example, significant revegetation has occurred in Hot Springs Canyon due to the upstream efforts of the Muleshoe Ranch and the Saguaro-Juniper Ranch. Repeat photo stations since 1964 indicate that

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[196] Ibid., p. 29.
[197] Ibid., p. 13.
[198] Muleshoe Ecosystem Management Plan and Environmental Assessment, U.S. Dept. of the Interior, Bureau of Land Management, Arizona State Office (May 1998), p. 26.
[199] http://www.azdot.gov/Highways/OES/AZ_WildLife_Linkages/assessment.asp
[200] Susan K. Skagen (USGS), C.P. Melcher, W.H. Howe and F.I. Knopf, "Comparative Use of Riparian Corridors and Oases by Migrating Birds in Southeast Arizona", in *Conservation Biology* (Vol. 12, No. 4, August, 1998), pp. 896-909.

this revegetation is moving downstream, and anecdotal observation of lower Hot Springs Canyon (protected by TNC and BLM conservation easements) indicate that mesquite bosque and mixed woodland lined banks are migrating upstream from the SPR. As noted before, dryland streams are ecosystems with high resilience.[201] That these riparian areas are improving and extending during a period of drought is hopeful. The erosive impacts of service roads to ephemeral reaches that are improving in riparian and aquatic habitat will be discussed in detail in the following sections.

Private landowners of the MSPRV have also recognized the importance of wildlife corridors by donating conservation easements on their properties. The Hot Springs Canyon Wildlife Corridor Conservation Easement Project focused on connecting protected upstream core habitats in the Galiuro/Winchester Mountains with those on the San Pedro River and in the Rincon/Catalina complex. In the intermediate area, properties had been fragmented by a developer. These ephemeral reaches of the Hot Springs Canyon wildlife corridor through ASLD and private lands were deemed critical for maintaining the integrity and connectivity of the core habitats.

Though the natural habitat of the canyon is important in its own right, it is the connectivity that lent the project its special significance. This is acknowledged in the proposed Hot Springs Canyon easements, and also in the BLM conservation easement at the base of Hot Springs Canyon on the former Taylor place:

> *Protection of the Property will contribute to the ecological integrity of Hot Springs Wash and the San Pedro River; conserve significant relatively natural habitat for wildlife and plants; and contribute to the maintenance of a wildlife corridor between the San Pedro River and the Galiuro Mountains.*[202]

Habitat linkages are also receiving considerable attention for larger prey animals that require extensive areas of unfragmented habitat. Though highly controversial, the region was formerly discussed for Mexican Gray wolf recovery. Presently the USFWS has been requested to designation critical habitat for Jaguar for the San Pedro River corridor from Mammoth south to the Mexican border.[203] Whether or not such designations could or should occur, it is indicative of both the nature of the extensive habitat of the SPRV and its rarity.

Connectivity is also receiving increasing attention due to climate change as habitats alter and species require the ability to change environments in response.

> *Because land protection decisions are long-term, hard to reverse, and resource intensive, these decisions are important to consider in the context of climate change. Climate change may directly affect the services intended for protection and parcel selection can exacerbate or ameliorate certain impacts. Therefore, when considering long-term acquisition strategies, land protection programs should be considering both the mitigation potential of land through carbon sequestration and the adaptation potential of the land for preserving wildlife*

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[201] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), pp. 3-4.

[202] BLM conservation easement for the property of Hawkins, Phillips and Wert.

[203] CITIZENS' STATEMENT OF SUPPORT For Recovering the Jaguar as a Native Species of the United States.

migration routes, protecting water sources, and buffering infrastructure and development from storm events.[204]

E.Summary

This first section of the Cascabel Working Group's contributions to the SunZia Draft Environmental Impact Statement primarily considers those unique characteristics, context and ecosystem components of the Middle San Pedro River Valley such that the NEPA process finds germane to direct and indirect cumulative effects of the proposed project over time. In that regard it could be compared to the "coarse filter" component of an ecoregional assessment wherein more generic landscape and habitat issues are reviewed and addressed.

A review of that data is as impressive as for any area in the American Southwest. The San Pedro River Valley is recognized as one of the most biologically diverse ecosystems in North America. It sits at the interface of four "Globally Outstanding" terrestrial ecoregions and a "Continentally Outstanding" freshwater ecoregion. In the midst of that it serves as the main migratory corridor for neotropical migrant birds in the West, and is thereby attributed to be of "continental importance" by both conservation groups and federal agencies, including the BLM.

Further, the Middle SPRV through which the SunZia transmission routes propose to run is the last relatively intact and largely unfragmented extended landscape in the desert Southwest through which courses a major free-flowing river. Likewise, it is an intact cultural landscape in an area of one of the longest and most complex continuous archaeological records in North America. An impressive suite of federal, state and county agencies, NGOs and private partners have attested to this importance by the investment of many millions in a large amalgam of protected conservation sites.

These accolades transcend a mere collection of discrete attributes or particular species counts. Ecological science has undergone a paradigm shift in its understanding that habitat fragmentation increases the vulnerability of suites of species populations. Ecoregional assessments look at continuous blocks of habitat that are a complex of mountain ranges and valleys where ecological processes remain largely intact. In depth ecoregional assessments of southern Arizona have discerned five Conservation Sites of high priority in the MSPRV, and the proposed SunZia transmission routes transect every one of them.

The five MSPRV Conservation Sites include the "desert seas" or Semidesert Grassland and Sonoran and Chihuahuan Desertscrub basins between the "sky islands" which serve as transitional connections between the upland and riverine communities. Because rivers are products of their watersheds, the grasslands and the water systems are not independent units, but are themselves intimately connected. Large swaths of the MSPRV have also been recognized for their connective attributes by Pima County's Sonoran Desert Conservation Plan, by Arizona Game and Fish Department's "Arizona Wildlife Linkages Assessment Document" and Arizona Open Land Trust and TNC's "Imperiled Movement Corridors." It is also implicit therein that since upstream activities are manifested in downstream effects, conservation of the San Pedro River must occur at the watershed scale.

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[204] An Assessment of Decision-Making Processes: the Feasibility of Incorporating Climate Change Information into Land Protection Planning. http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=210027

Ecoregional assessments are performed not only by conservation groups but in cooperation with federal agencies such as the USFS and BLM, and a primary purpose is to evaluate areas for priority conservation and to implement policy recommendations. The managerial prescriptions for these large blocks of the MSPRV are uniformly to avoid development and infrastructure fragmentation that would imperil the sustainability of the unique and rare components of such a biologically diverse ecosystem. Given the abundance of biological evidence and consensus to this effect, SunZia's proposed routes that wend their way through discrete protected habitat patches in the MSPRV and Aravaipa must be viewed as either naïve or disingenuous if thereby they suppose to avert major ecosystem impacts.

The evidence of the MSPRV watershed as a biologically critical and connected unit is both scientifically compelling and programmatically confirmed. The situation then becomes comparable to that of the Upper San Pedro wherein Endangered Species Act issues arise about off-site impacts to protected species and habitats. With endangered species such as the southwestern willow flycatcher mitigation sites on the San Pedro River, listed native fish habitat in the canyon tributaries, and a valley-wide neotropical migratory bird corridor of continental importance, similar concerns arise in the Middle SPRV. Here it is not so much below grade aquifer extractions impacting habitat, but above grade impacts to the ecosystem. These issues have been raised to the level of lawsuits in the Upper SPRV, and it is a matter that will be further addressed after cataloguing foreseeable direct impacts of a power transmission corridor.

Although small, this bi-national dryland river has high scientific importance and conservation value, and is oft noted as one of the most studied rivers in the nation. Many watershed groups are looking to the San Pedro as a model for river-protection efforts.[205] It has been noted that the condition of its riparian ecosystems may be the canary in the coal mine with respect to sustainable water use in the desert southwest.[206] A corollary of that statement in the Middle SPRV is that the condition of its watershed may be the canary in the coal mine with respect to the possibility for a largely unfragmented and intact riverine ecosystem persisting in the desert Southwest in the midst of tremendous demographic pressures. It is apparently the last chance. A mitigation site for a last remaining mitigation site is oxymoronic.

To carry forward the metaphor of this first section as a "coarse filter" assessment of the MSPRV, given the special status of the area and the plethora of documented special attributes, the region would be red-lined for conservation priority simply on the basis of "coarse filter" assessments before proceeding to the "fine filter" species concerns. That is, before needing to address the "direct impacts" of a project of SunZia's size and scope to such an area of such great biodiversity and "continental importance," a NEPA judgment of Environmental Objection would likely already be raised. Nonetheless, if data is required, data will be forthcoming, but all as weighted metrics given the uniqueness of the region. That is, the same impacts that might be considered minor to an existing infrastructure corridor become major in an area of such import.

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[205] Juliet C. Stromberg and Barbara Tellman, editors, Ecology and Conservation of the San Pedro River (Tucson: The University of Arizona Press, 2009), p. 4.

[206] Ibid., p. 2.

From: herman somanski
To: NMSunZiaProject@blm.gov
Subject: Ugly power lines
Date: 06/06/2010 05:10 PM

Dear Sir or Madam,

I am writing to voice my objection to one of the possible power line routes for the SunZia Transmission Project, specifically, the one within the corridor that passes through San Acacia, Polvadera and or Lemitar in Socorro County.

As a resident of Polvadera, I am concerned about various negative effects of these power lines and associated towers. One major concern is with effects on health. There is evidence which suggests that the EMFs associated with these lines may cause or contribute to a number of health problems, including cancer (particularly among children), migraine headaches, Alzheimer's, Parkinson's, fibromyalgia, high blood pressure, asthma, chronic fatigue, insomnia and allergies.

Another concern regards possible effects on birds' migratory behavior. This proposed route lies directly in the flight path of thousands of birds migrating to the Bosque del Apache and points further south. Disruption would affect not only the birds but also the tourist industry in this area (particularly in the City of Socorro and at the Bosque), due to the large number of "birders" who come here in the fall to observe the many species who winter here.

I am also concerned about the obvious decimation of property values, owing to the fact that many people who might otherwise buy homes in this area would not do so if these high voltage lines were nearby, given concerns about health, aesthetics, quality of life and reseale value.

For these reasons, I strongly object to locating power lines in the above-mentioned corridor and ask that you choose some alternate route that does not have such negative effects on the human and animal populations. The corridors bordering White Sands would seem to be a much better alternative.

Thank you.

Vern Leavitt
Home owner in Polvadera

From: Kathy Lee
To: NMSunZiaProject@blm.gov
Subject: Sun Zia Southwest Transmission Project
Date: 06/07/2010 03:18 PM
Attachments: Sato's comments.doc

Hi Adrian,

Please find attached my comments & concerns regarding the proposed Sun Zia Southwest Transmission Project.

Please confirm receipt of this email.

Thank you,

Sato Lee

Sato Lee
HC 66 Box 615
Mountainair, NM 87036
June 7, 2010

Sun Zia Southwest Transmission Project
Attn:Adrian Garcia
Project Manager
NMSunZiaProject@blm.gov

To Whom It May Concern:

Following are my comments and questions on the proposed Sun Zia transmission project.

- **Impact on the Extension Area of WSMR.** I am particularly concerned with the route proposed as E80, E90 & E100.

These sections pass between the launch site known as LC94 and the radar and optics sites. This site was the initial research and testing to improve the patriot missile that was used last year to destroy a de-orbiting satellite with pinpoint accuracy. What impact will the power line have on the communications needed to operate the launch site? Would it force WSMR to shut down the facility? What mitigating measures could be taken to alleviate the interference?

This same area is also used for night flights by helicopters flying from Kirtland Air Force Base to WSMR for training exercises. Would the magnetic field from the line interfere with the electronics on the helicopters? Also these flights are low flying. Would the line pass a physical danger and what could be done to mitigate that danger?

There is another site within two miles of the proposed line that is called ATACMS. This is an impact site for testing an anti-personnel missile. What impact would the line have on this site?

There is also a no fly zone in effect over this area. Since I anticipate construction by helicopter and also maintenance, how would that be handled with WSMR as far as scheduling?

- **Financial Impact.**

From the aspect of national defense, what would be the cost to WSMR if the LC94 site had to be closed? If it rendered the Kirtland missions inoperable, what would be the cost to find another suitable site?

The ranchers in the extension area of WSMR also have contracts with the range both for the sites and possible impacts from stray missiles from the main missile range. If the

power line causes WSMR to cancel or alter those contracts, what compensation would we expect?

This size line also has to reduce the value of the ranch as a unit and the private land would be greatly affected. What studies have been done to try and quantify that loss of value? Is there a differentiation between sub dividable land and rangeland?

I also understand there would be two lines in a corridor and that the excess power capability in New Mexico could lead to other lines at a later date. Is this true and would they parallel the proposed line? What kind of affect would multiple lines have?

The proposed line would also pass thru an archaeologically rich area west from Gran Quivira and also thru many homesteads settled in the early 1900s. What sort of impact is anticipated from the proposed line or lines?

- **Ecological Impact**

Why would you choose to run a large set of power lines thru some 1500 square miles of pristine area? These areas from Bernardo to Gran Quivira, south to Highway 380, to the Rio Grande River have no highways, no large power lines, no radio relay towers, in fact no development other then LC94 site operated by the WSMR on a site of 40 acres.

It would also pass between the stallion WSA, with a view shed rating of 2 and the south boundary of the Sevilleta refuge. In fact it parallels the Sevilleta for the entire south boundary of the Sevilleta and would be visible from the entire upper part of the refuge. Would it not have the same effect on wildlife as the line along 380?

- **Health Effects to Humans and Wildlife**

What research is there on the effect of the magnetic fields on humans?

There have been two studies done, one by the World Health Organization and another by the University of Iowa stating that these fields do in fact have an affect on the orientation of livestock and their productive capacity. What sort of mitigating measures would be taken to reduce these impacts?

Thank you in advance for considering all of my questions & comments. I await your response including any copies of third-party reports addressing my concerns.

Sato Lee
Mountainair Rancher

From: Yotespeople Legatz
To: nmsunziaproject@blm.gov
Subject:
Date: 06/04/2010 03:58 PM

Dear Mr. Garcia,

My husband and I visit the Bosque del Apache several times a year. We are Friends of the Bosque. We donated money to help the Friends purchase mountaintop land across I-25 from the Rio Grande. When friends visit from out of state, we take them to the Bosque del Apache. It is at the Bosque del Apache that we often run across tourists who have come from Canada, Europe, and other countries for the world-renowned migratory pathway.

When we are there, along the river, in the fields, and along the trails we always note the beautiful ABSENCE of visible power lines, poles, signs, etc. I often think I have been allowed to travel back in time to New Mexico as it might have looked 150-200 years ago. If you were to install power lines anywhere near this area you would ruin pristine land and views that provide needed respite for animals and people. Please find another route or means to accomplish the transmission of power in this part of the state. Please leave this area untrammeled.

Sincerely,
Roxanne Legatz and Gary Bautsch

From: Nancy Lehrhaupt
To: NMSunZiaProject@blm.gov
Subject: Bosque del Apache
Date: 06/04/2010 06:53 PM

To BLM,

I am emailing to ask you to protect the irreplaceable Bosque del Apache from plans by SunZia to build a power transmission corridor that would impact this beautiful place.

Please don't let another corporate plan for power and profit destroy what is truly special about New Mexico.

I can't help but think of the Gulf of Mexico and the oil spill when I consider yet another plan to put our environment at risk.

Please do what you can to protect and preserve the Bosque. It is an amazing and unique place and brings many visitors and tourists to the state of New Mexico.

Nancy Lehrhaupt
Santa Fe, NM

From: Kevin.Tarbox@lennar.com
To: NMSunZiaProject@blm.gov
Cc: kevin.tarbox@lennar.com
Subject: Willow Springs
Date: 05/27/2010 11:31 AM
Attachments: 080109 homebuilders book.pdf

Adrian,
It has come to my attention that a potential routing alignment for a SunZia transmission line is in consideration which would dissect our 4600 acre Master Planned Community Willow Springs. For obvious reasons we would be opposed to this location because we feel that the aesthetical impact would significantly diminish the future value of our project. I have attached our Marketing Plan so you could get a sense for the Projects goals. Please let me know if you or someone else would be willing to discuss the status of your alignments in relation to Willow Springs.
Thanks

LENNAR

Kevin Tarbox

Senior Vice President

Lennar Corporation-Tucson Land Division

kevin.tarbox@lennar.com

www.lennar.com

Direct Line: (520) 618-4127

Fax Number: (520) 747-0989

326 South Wilmot Road

Suite C-200

Tucson, Arizona 85711

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

epg
DATE RECEIVED
6/22/18

SunZia Southwest Transmission Project Environmental Impact Statement

Kevin Tarbox
NAME
326 S. Wilmot Rd., Suite C-200
ADDRESS
Tucson, AZ 85711
CITY STATE ZIP

Willow Springs Properties
Organization (if applicable)
Add to mailing list X Yes ☐ No
Withhold personal information* ☐ Yes ☐ No
Receive notification of EIS availability? ☐ Yes ☐ No

COMMENTS:

To whom it may concern,
It has come to my attention that a potential routing alignment for a SunZia transmission line is in consideration which would dissect our 4600 acre Master Planned Community Willow Springs. Willow Springs Properties has been designing and engineering this project since 2004 and we have invested millions of dollars to date. Your proposed alignment through our project would have a significant negative impact to this future community.
This location was chosen for this community for many reasons including the beauty of the rolling hills at the foothills of the Black Mountains.. To allow you to get a true sense of the future of our project, I have also mailed our Marketing Book. Please consider our project when you look to locate the SunZia transmission line and take into consideration our investment and efforts. This transmission line would scar our project and potentially devalue our project to a point that would not allow us to continue.
Willow Springs would welcome the opportunity to speak with anyone about our concerns.
Thank you

Kevin Tarbox
Managing Member
Willow Spring Properties L.L.C.

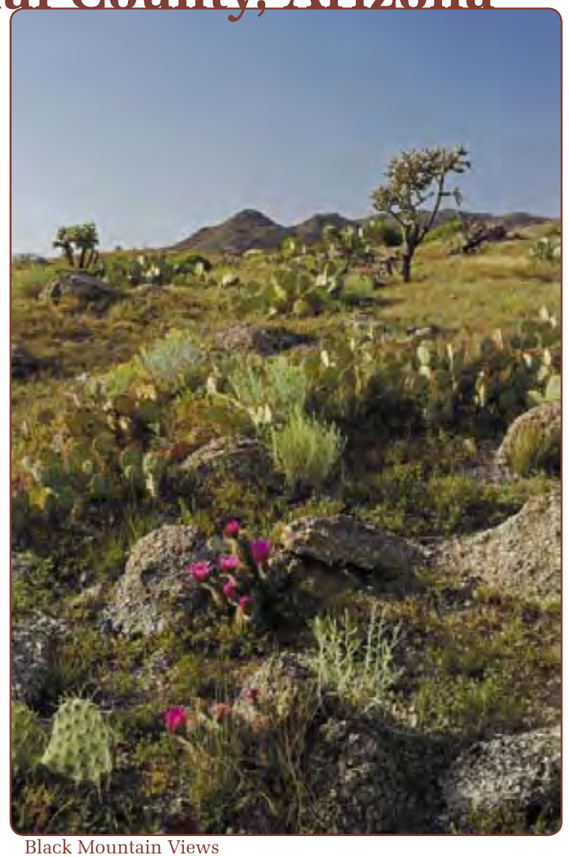
SEND COMMENTS TO:
SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

**Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.*

Introduction | Vision

Willow Springs | Pinal County, Arizona

The community will comprise 4,600 acres of deeded lands within 160,000 acres of state and federal grazing leased area. A combination of housing styles are crafted into villages and integrated in the landscape to embrace the scenic panoramas. At the heart of the community is the Willow Springs Town Center providing social, civic and cultural amenities. Willow Springs will maintain over 40% of open space preserving the unique pristine desert landscape and endowing recreational opportunities to its residents. An expansive network of trails within the open space will establish a framework of connectivity for residents linking villages to the town center and community amenities. The synthesis of villages, the town center, parks, open space, trails, amenities and residents compose the community of Willow Springs.



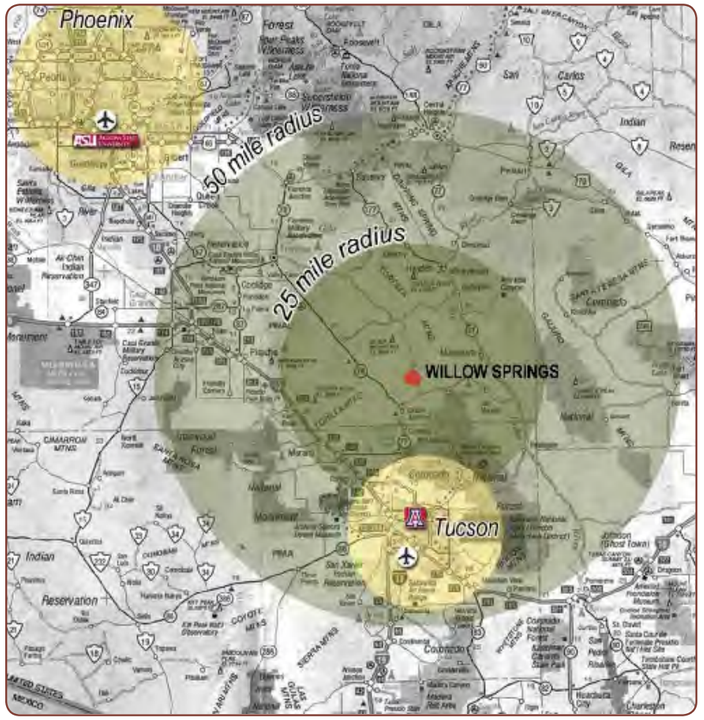
Black Mountain Views

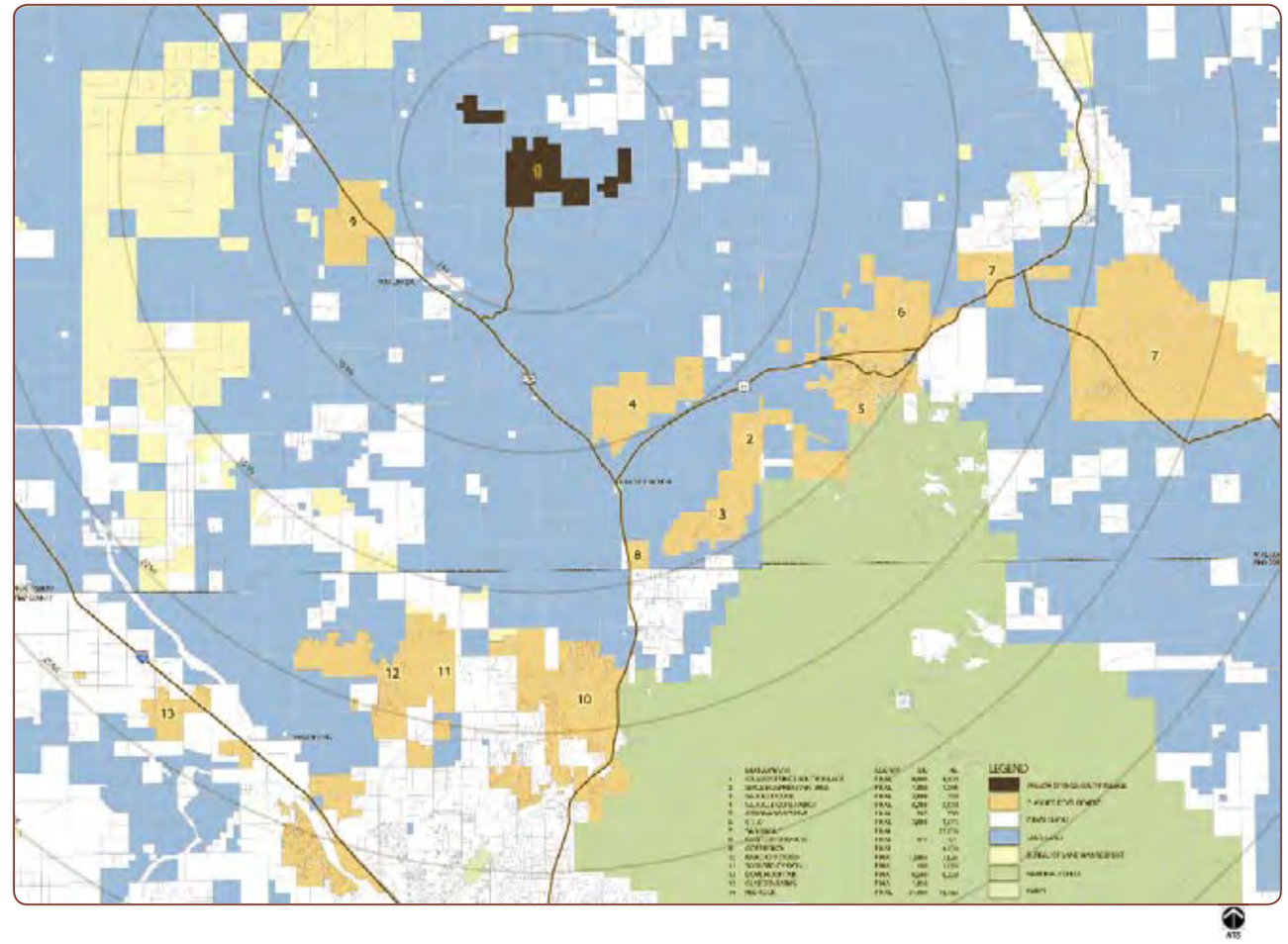
Willow Springs is envisioned to evolve the concept of community in Southern Arizona. The primary objective is the creation of an enduring sustainable community to enhance the quality of life for its residents. Promoting a healthy lifestyle, Willow Springs incorporates diverse leisure opportunities amongst the vibrant desert landscape enriching community wellness. By understanding and fusing social issues, environmental sensitivity and economic factors, Willow Springs implements innovative design and planning principles to realize the concept of community.

The following cornerstones distinguish the desire to retain and enhance the quality of the unique character of what comprises Willow Springs. A community sensitive to the Sonoran Desert, this ideal community functions as a retreat from the daily routine providing an abundance of recreational opportunities, all within a small town setting. Southwest architecture, culture and heritage will blend and interplay within a living environment of villages, nature trails, shops, parks and people that came to enjoy the pleasant Arizona weather and the striking desert surroundings. The project vision and master plan embraces ***nature, health & wellness, small town, culture & heritage, connectivity, gathering places and diversity in homes***, the seven cornerstones of Willow Springs.

Historic Rock House | Neighborhood Four

Location and Surrounding Area

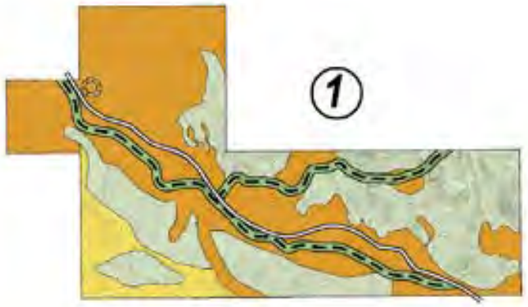




A new town is located within the Willow Springs Ranch - 19,200 acres of hills, mountains and canyons are located just roughly 30 miles north of Tucson. Conveniently located at the edge of two urban growth corridors, the site provides a unique opportunity to live in a pristine desert setting.

Breathtaking views surround Willow Springs. Just south are spectacular vistas of Tucson's famous Catalina Mountains which can be seen from both lower and upper elevations within the community. Views of Picacho Peak to the west, and in the distant Southwest, the Santa Rosa Mountains can be enjoyed from the higher elevations.

Directly north is a stunning view of the 6,000 ft. peak of Black Mountain providing the backdrop that anchors the community and rises about three miles north of the Town Center. Black Mountain is a dramatic landmark visible from many locations within the community and surrounding areas.



Willow Springs
SOUTH VILLAGE

Village and Planning Area Data

PROPOSED LAND USE	ZONING	PARCEL 1	PARCEL 2	PARCEL 3	SUBTOTAL (ACRES)
Single Family Residential (Suburban)	CR-3	307.2	2,229.7	516.1	3053.0
Single Family Residential (Rural)	CR-2	65.1	258.4	0.0	323.5
Multiple Residence (Multi-family)	CR-4	0.0	29.0	0.0	29.0
General Business (Town Center)	CB-2	0.0	27.7	0.0	27.7
Suburban Residential (Sensitive Slopes)	SR	258.8	435.7	94.0	788.5
Drainage Corridors (Washes)	SR	34.7	190.1	14.4	239.2
Roads (Arterials)		14.2	109.4	15.6	139.2
TOTALS		680.0	3,280.0	640.1	4600.1

NOTE:
The remainder of the CB-2 and CB-1 (Table 1 & 2) areas will be determined as development occurs.

1 PARCEL AREA

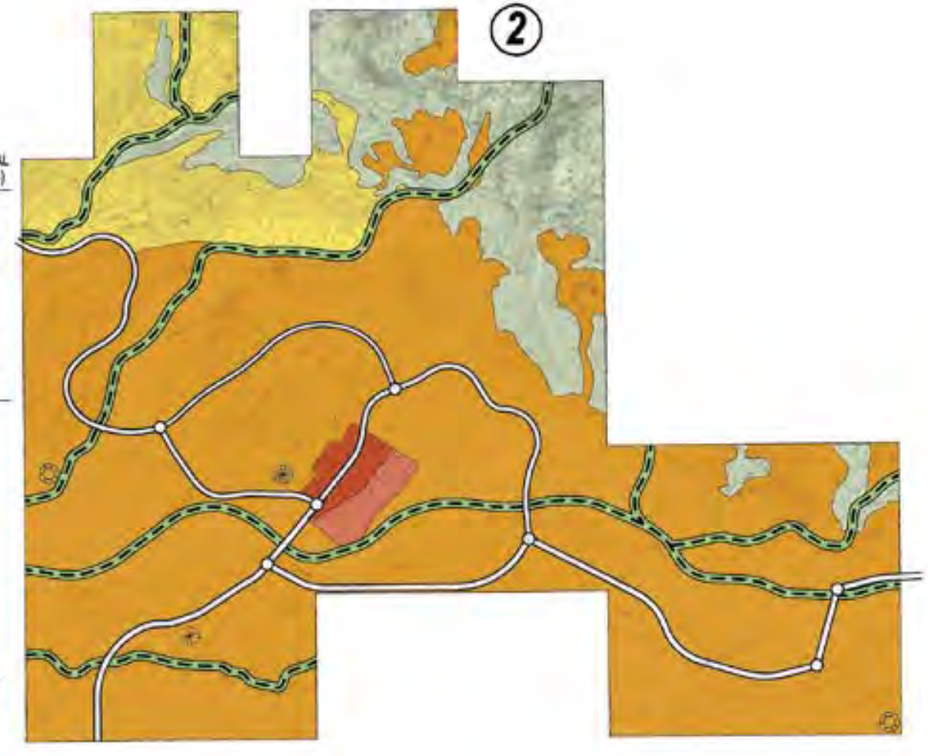
SCHOOLS - LOCATIONS ARE CONCEPTUAL AND SUBJECT TO CHANGE

UTILITIES - LOCATIONS ARE CONCEPTUAL AND SUBJECT TO CHANGE

PRIMARY WASH CENTERLINE

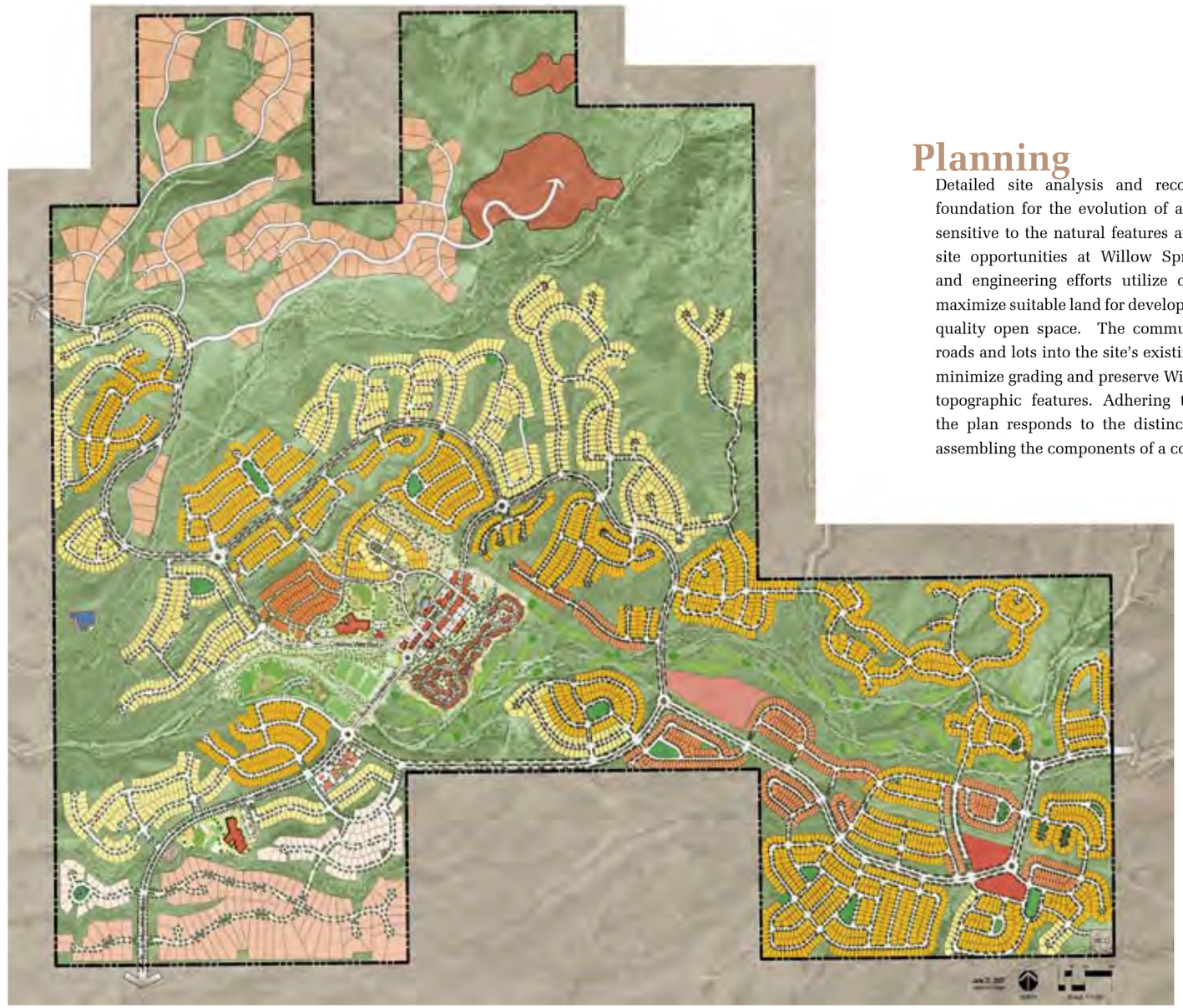
NORTH

0 1,000' 2,000' 4,000'
SCALE 1"=2,000'



South Village Plan

Parcel 2 Master Plan



Planning

Detailed site analysis and reconnaissance set the foundation for the evolution of an overall site layout sensitive to the natural features and responsive to the site opportunities at Willow Springs. The planning and engineering efforts utilize creative solutions to maximize suitable land for development while retaining quality open space. The community plan integrates roads and lots into the site's existing terrain in order to minimize grading and preserve Willow Springs' unique topographic features. Adhering to the cornerstones, the plan responds to the distinct existing landscape assembling the components of a community.

Culture & Heritage

Establishing an authentic sense of place, Willow Springs will embrace local culture and heritage. Local culture will be expressed in its architecture, design and art. Individual villages will express their own distinct character. Their common thread will be the textures, colors and materials that define the tapestry of the community. Key to this approach will be a unique architectural palette that emulates styles from Arizona's beloved and historic neighborhoods. Homes will borrow from a rich blend of regional vernaculars resulting in a timeless community that seems as if it has always been a part of Southern Arizona.

nature | health & wellness | small town | culture & heritage | connectivity | gathering places | diversity in homes

Master Plan Summary

Neighborhood 1

Village Identification	Use	Units	Acreage
Village 1 (N1-V1)	Residential	158	57.5 AC
	60'x120'	14	
	60'x120'	59	
	50'x120'	85	
Village 2 (N1-V2)	Residential	84	33.8 AC
	60'x110'	84	
Village 3 (N1-V3)	Residential	159	51.3 AC
	60'x110'	159	
Village 4 (N1-V4)	Residential	144	58.4 AC
	70'x110'	144	
Village 5 (N1-V5)	K-8 School		16.5 AC
Village 6 (N1-V6)	Town Center		31.2 AC
		159,000 SF	
Village 7 (N1-V7)	Mixed Use	145	29.0 AC
*area to be determined - not included in calculations			
Village 8 (N1-V8)	Community Park		40.6 AC
Village 9 (N1-V9)	Residential	200	55.2 AC
	70'x130'	67	
	60'x130'	133	
Village 10 (N1-V10)	Residential	74	64.2 AC
	90'x130'	22	
	80'x130'	52	
Village 11 (N1-V11)	Residential	12	40.2 AC
	1/2 Ac.	12	
Village 12 (N1-V12)	Residential	30	58.2 AC
	1/2 Ac.	30	
Village 13 (N1-V13)	Residential	61	70.2 AC
	1 Ac.	61	
Village 14 (N1-V14)	Residential	155	70.4 AC
	90'x130'	65	
	70'x130'	90	
Village 15 (N1-V15)	Commercial		3.8 AC
		44,000 SF	
Village 16 (N1-V16)	School		16.5 AC
Village 17 (N1-V17)	Utilities		7.8 AC
Village 18 (N1-V18)	Wastewater Facility		18.8 AC
Neighborhood 1 Summary			
Neighborhood 1 Acreage			**839.- AC**
Residential Area Total		**1077 Lots**	**560.2 AC**
Commercial Total		**203,000 SF**	**36.5 AC**

Neighborhood 2

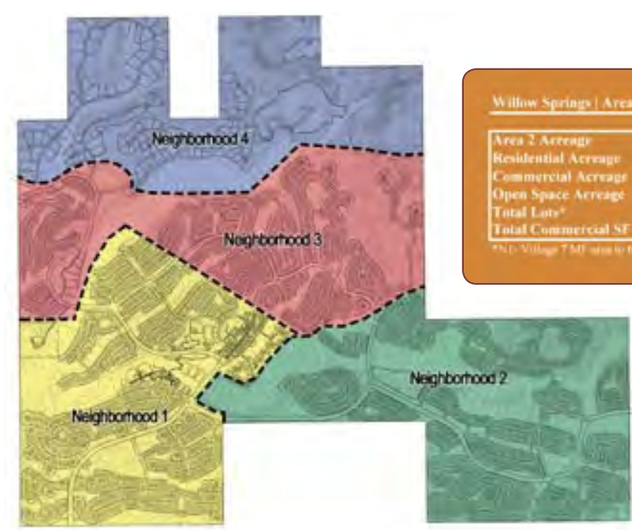
Village Identification	Use	Units	Acreage
Village 1 (N2-V1)	Residential	124	44.1 AC
	70'x120'	49	
	60'x110'	75	
Village 2 (N2-V2)	Residential	74	24.1 AC
	50'x110'	74	
Village 3 (N2-V3)	Clubhouse		15.3 AC
Village 4 (N2-V4)	Residential	345	109.8 AC
	60'x110'	301	
	50'x110'	44	
Village 5 (N2-V5)	Residential	150	60.5 AC
	70'x120'	33	
	60'x110'	95	
	50'x110'	22	
Village 6 (N2-V6)	Commercial		11.2 AC
		50,000 SF	
Village 7 (N2-V7)	Residential	121	30.9 AC
	60'x110'	82	
	50'x110'	39	
Village 8 (N2-V8)	Residential	122	41.1 AC
	60'x110'	33	
	50'x110'	89	
Village 9 (N2-V9)	Residential	60	16.2 AC
	50'x110'	60	
Village 10 (N2-V10)	Residential	88	29.2 AC
	60'x110'	88	
Village 11 (N2-V11)	Residential	76	25.8 AC
	60'x110'	76	
Village 12 (N2-V12)	Residential	74	21.2 AC
	60'x110'	74	
Village 13 (N2-V13)	Residential	247	88.7 AC
	60'x110'	247	
Village 14 (N2-V14)	Residential	157	42.1 AC
	60'x110'	157	
Village 15 (N2-V15)	Residential	67	19.9 AC
	60'x110'	28	
	50'x110'	39	
Neighborhood 2 Summary			
Neighborhood 2 Acreage			**921.2 AC**
Residential Area Total		**1705 Lots**	**552.8 AC**
Commercial Total		**50,000 SF**	**11.2 AC**

Neighborhood 3

Village Identification	Use	Units	Acreage
Village 1 (N3-V1)	Residential	271	109.0 AC
	70'x120'	112	
	60'x110'	159	
Village 2 (N3-V2)	Residential	291	105.6 AC
	70'x120'	291	
Village 3 (N3-V3)	Residential	166	66.6 AC
	60'x110'	166	
Village 4 (N3-V4)	Residential	36	19.5 AC
	60'x110'	36	
Village 5 (N3-V5)	Residential	170	50.3 AC
	60'x110'	141	
	50'x110'	29	
Village 6 (N3-V6)	Residential	96	34.5 AC
	70'x120'	96	
Village 7 (N3-V7)	Residential	49	27.7 AC
	70'x120'	49	
Village 8 (N3-V8)	Residential	194	88.2 AC
	70'x120'	194	
Neighborhood 3 Summary			
Neighborhood 3 Acreage			**762.3 AC**
Residential Area Total		**1273 Lots**	**501.1 AC**

Neighborhood 4

Village Identification	Use	Units	Acreage
Village 1 (N4-V1)	Residential	11	36.4 AC
	Estate Lots	11	
Village 2 (N4-V2)	Residential	28	69.7 AC
	Estate Lots	28	
Village 3 (N4-V3)	Residential	35	120.6 AC
	Estate Lots	35	
Village 4 (N4-V4)	Residential	44	127.5 AC
	Estate Lots	44	
Village 5 (N4-V5)	Retreat		55.7 AC
Neighborhood 4 Summary			
Neighborhood 4 Acreage			**753.2 AC**
Residential Area Total		**118 Lots**	**354.2 AC**



Willow Springs | Area 2 Summary

Area 2 Acreage	**3,276.8 AC**
Residential Acreage	**1,968.7 AC**
Commercial Acreage	**48.2 AC**
Open Space Acreage	**1,248.4 AC**
Total Lots*	**4,173 Lots**
Total Commercial SF	**253,000 SF**

*N1- Village 7 MF area to be determined (145 Units) - not included in calculations

Town Center | Model Complex

TOWN CENTER / BUILDING SUMMARY

Building Identification	Bldg. Area (s.f.)	Use	Parking Provided	Parking Required
A1	7,085	Recreation Center		
A2	8,027	Retail / Restaurant		
A3	13,270	Retail / Restaurant		
A4	4,724	Retail / Office		
Cluster A Totals	33,106		166	149
B1	20,982	Medical		
Cluster B Totals	20,982		79	94
C1	11,500	Retail / Office		
C2	7,035	Retail / Office		
C3	6,219	Retail / Office		
Cluster C Totals	24,754		166	111
D1	19,810	Retail		
D2	17,014	Retail		
D3	8,730	Retail / Office		
D4	14,544	Retail / Office		
Cluster D Totals	60,098		238	270
E1	8,920	Retail / Office		
Cluster E Totals	8,920		64	40
F1	5,891	Retail / Office		
F2	4,920	Retail / Office		
FS	7,225	Fire Station		
Cluster F Totals	18,036		89	81
G1	10,000	Performing Arts		
Cluster G Totals	10,000		32	52
Town Center	175,896		854	797

Town Center | Main Street

nature | health & wellness | small town | culture & heritage | connectivity | gathering places | diversity in homes

Town Center | Model Complex

Willow Springs Commons | Central Gathering Place

Small Town

Creating a true new town with a "Small Town" allure is our vision. Arriving at the Willow Springs Town Center, homesteaders will feel as if they have discovered a little town off of S.R. 79. The roots of Willow Springs will start in the first phase where families will be offered the chance to be part of the fabric of this community from its beginnings. The community tapestry will evolve as the residents create the synergy of the "small town".

Social activities will draw on the traditions of Arizona's heritage. Plays under starlit skies, cowboy poetry readings by campfire, and concerts on the great lawn are just a few experiences. Villages will have parks for events and block parties. A small theater arts complex might host community theater groups, ballet for youngsters and musical instruction.

Bookstores, coffee shops and cafes will spill out onto bustling sidewalks where neighbors can catch up on news. The Town Center will provide spaces for businesses and offices offering imaginative environments adjacent to lush Sonoran Desert patterns and parks where employees can jog during lunch breaks or take laptops out by the garden.

Town Center Perspective

Open Space and Parks

Nature

Willow Springs integrates a series of villages into the pristine desert ecosystem. The terrains' natural features and unique ecology will play an important role in the community plan for Willow Springs. Significant areas will be preserved and dedicated as open space. Additional open space will include the 40AC Community Park and wash corridors serving as prime wildlife corridors. Villages will feature pocket parks and connections to the trail network. Meandering trails and paths will lead to the Town Center, the Community Park, community gardens, playgrounds and contemplative places to enjoy nature. Strict guidelines will protect the natural beauty of the Sonoran Upland Desert.

Open Space and Park Planning

Willow Springs will maintain and enhance environmental diversity through preservation and conservation. Black Mountain, Fortified Peak and the many natural washes are important topographical features within the site. Not only because of the views they offer, their value as scenic vistas and backdrops, and in the intrinsic value they hold for wildlife and plant habitat, but also for the economic benefits generated through recreational opportunities.

A significant portion of Willow Springs acreage will be preserved as open space, used for parks, trails and other common amenities. Development will occur in clearly defined parcels with distinct edges facing the natural landscape. Most of the homes at Willow Springs will have views of nearby mountains and a large number will back directly onto natural open space.

Significant wash corridors adjacent to the Town Center are ideal locations of major parks and golf courses. Relatively flat, these lush, low lying areas will continue to channel storm water from the mountain slopes during the regions' rainy seasons. Natural washes, as protected open spaces, will also continue to serve as wildlife corridors.

Approximately 37 miles of trails have been proposed to interweave the different villages Willow Springs. The proposed trails will connect residents to their local Village Center, Town Center, major parks and other community amenities.

Open Space and Park Framework Plan

Community Park

Gathering Places

A park is just around the corner within an easy distance of every Willow Springs resident. Parks and activity centers are planned to be the places for the community to gather and become acquainted. Athletic activities, arts, theater, and a variety of social events will be hosted within the extensive community and village park system. The network of trails will provide access to the community activities. Once this new hometown has grown to its full potential, chances are the park environs will remain the favorite grounds for the many settlers of Willow Springs to enjoy.

Community Park | 40AC Facility includes a regulation soccer field, baseball complex, basketball courts, roller hockey court, sports fields, play structures, skate park, trails, and pavilions.

Neighborhood Parks

Health & Wellness

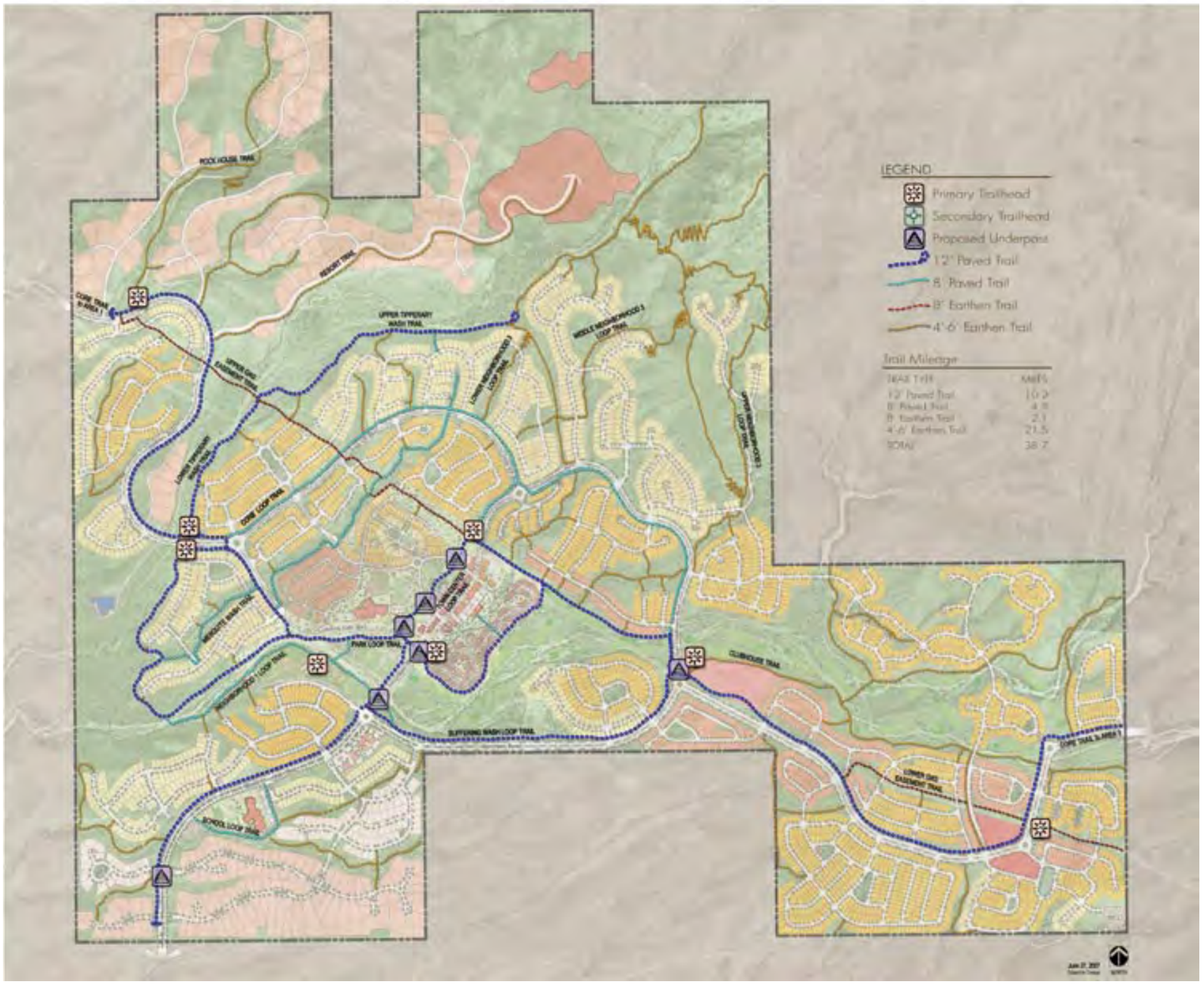
Willow Springs creates a playground offering a multitude of recreational opportunities. Everyday choose your own adventure! If there is one image that encapsulates the Arizona lifestyle, it's the endless mass of people immersing themselves in the awesome beauty of their natural surroundings and climate. It is no surprise Tucson is one of the fittest cities in America. The invigorating possibilities at Willow Springs will boast a healthy and fulfilling lifestyle.

Village facilities will include a baseball fields, tennis courts, basketball courts, swimming pools, soccer fields, playgrounds and dog parks. The trail network at Willow Springs will offer miles of pathways throughout and around the community served by multiple trailheads. Residents will be at the doorstep to the Black Mountain and the Sonoran Desert landscape in the surrounding State Lands. In addition to the trails, most neighborhoods will also have one or two small landscaped parks. The design of these neighborhood parks will vary greatly depending upon the nature of the neighborhoods they serve. Some parks will include tot lots and play areas, while others may be formal gardens or simple natural areas. Health and wellness opportunities such as hiking, camping, mountain biking, night sky observation and so much more, are right here. The vision is to promote an active and healthy community by providing access to a multitude of amenities.

Neighborhood Park | Minimum 1.0AC
Programmed Community Gathering Space

Pocket Park | Minimum 0.5AC
Shared Park Space

Trail Master Plan



Connectivity

A Willow Springs trail is only a stone's throw away from every residence. An integrated system of regional trailways running along preserved Sonoran Desert washes, offers a significant connection within the community. Local walking and biking trails link all neighborhoods throughout the community.

Residents will rarely have to leave the comforts of the community to find the things they want or need. They'll utilize one of the trails connecting the schools, parks, neighborhoods and workplaces. Parents of little Willow Springs' scholars will be relieved to know their kids can walk to one of a number of excellent schools, which will be located throughout Willow Springs. Time-challenged professionals can stop for a quick workout at the village gym and then drop by daycare to pick up their children on their way home. The bustle of people shopping and lunching will fill the air. Coffee shops, internet cafes and places for friends to gather will be a short stroll from anywhere in the community.

The following pages will speak more specifically about the Tipperary Trail system that runs along the Tipperary Wash. This trail that bisects Willow Springs will be detailed in three parts: The Canyon Trail, The Ranch Trail, and the Confluence Trail.

Architectural Character

Spanish Hacienda | Origins in rural ranching farmhouses and the historic Spanish influence of this region.

Pueblo / Southwest | Historical precedent dating back to the Native Americans Indians.

Monterrey | A blend of American Colonial and Spanish adobe architecture.

Diversity in Homes

Fostering a spirit of harmony, a distinctive mix of homes will attract people from all ages and walks of life. Vibrant apartment homes, estate lots fronting fairways and comfortable casitas will combine to create close-knit neighborhoods and a multi-generational environment addressing the needs of every Willow Springs resident.

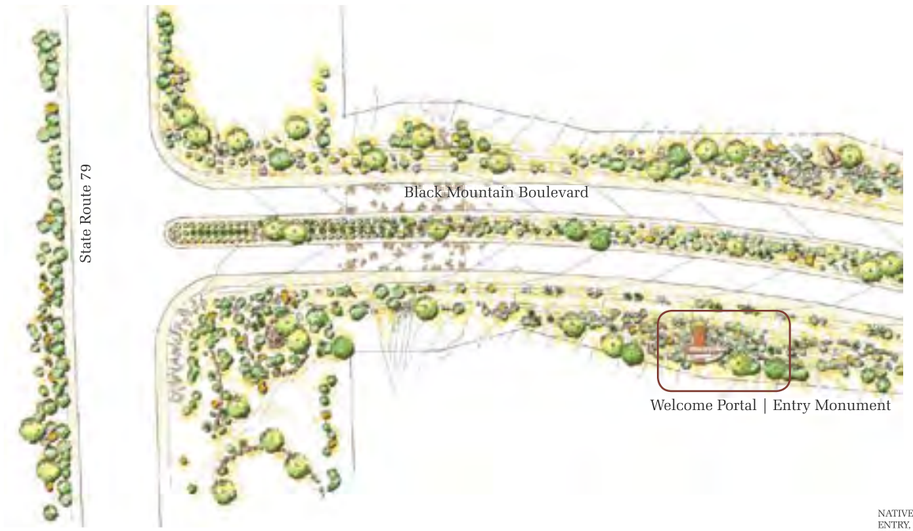
Intimate neighborhoods will cater to singles, couples, active adults and young families. From lavish condominiums, to custom and single-family homes crafted by the region's best builders. Homes will be dressed in the colors and materials of the environment and placed within leisurely stroll away from pocket parks, tot lots and tranquil gardens. The genuine sense of community defining life at Willow Springs will be firmly planted by the founding families.

Bungalow | Evolved from the early American Arts and Crafts movement.

Territorial | Colonial, Monterrey and Spanish architecture influences can be found.

nature | health & wellness | small town | culture & heritage | connectivity | gathering places | diversity in homes

Entry Landscape | Monumentation



Black Mountain Boulevard | Entry Landscape Plan

Welcome Portal | State Route 79 and Black Mountain Boulevard - The entry monument serves as a landmark for the community. Materials and forms convey the character of historical elements from the ranch.

Community Entry Landscape Plan and Section

Development Team

Service Partners
Trico
Willow Springs Utilities
Willow Springs Telephone
Southwest Gas
Florence Unified School District
Golder Ranch Fire District

Owner
Willow Springs Properties, LLC
1600 East Hanley Blvd. #128
Tucson, AZ. 85711

Development Consultant / Broker
The Remington Group
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(F): 520.219.1874
Contact: Jamie Argueta, Vice President
Alex Argueta, Broker

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Darin Moore, Project Manager

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Contact: Mark Stratton

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(F): 520.792.2539
Contact: Olig Lysyj

Hydrogeology
Errol Montgomery
1550 East Prince Road
Tucson, AZ 85719
(P): 520.881.4912
Contact: Mark Cross

Willow Springs

From: Fredie Livingston
To: nmsunziaproject@blm.gov
Subject: Powerline
Date: 06/05/2010 11:41 AM

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4 June 2010

To: NMSunZiaProject@blm.gov
BLM New Mexico State Office
SunZia Southwest Transmission Project
P>O> Box 27115
Santa Fe, NM 85702

Concerning the proposed route for SunZia's powerline across areas near Socorro and Polvadera, I strongly urge you to reconsider the corridor proposed in SunZia's original 2008 filing, which follows White Sand's western fence line. I agree with the Fish and Wildlife Service that this western boundary route is the most reasonable in that it protects wildlife along the Rio Grande flyway and has the least impact on our communities. As pointed out by Kathryn Albrecht in her column in the May 29 edition of the El Defensor Chieftain, it alone avoids all Wildlife Refuges, Wilderness Areas, WSAs and BLM areas of critical environmental concern.

Thank you for your attention to this concern,

Sincerely,

Fredie Livingston
P.O. Box 246
Tularosa, NM 88352

Hotmail has tools for the New Busy. Search, chat and e-mail from your inbox. Learn more.

From: lozarpaula@cs.com
To: NMSunZiaProject@blm.gov
Subject: Opposition to current proposed route
Date: 06/07/2010 10:31 PM

I stand with the Friends of the Bosque del Apache in opposition to the proposed transmission route. The Bosque wildlife refuge is one of the chief sources of tourism income for the area. Worthy as the SunZia project's "green power" intentions are, they don't make up for the irreparable damage that will be done to the Bosque by the proposed transmittal route. I urge that an alternative route be studied that does not follow the Rio Grande corridor.

Paula Lozar
Santa Fe
(Friends of the Bosque member and frequent visitor)

From: Gary Mackender
To: NMSunZiaProject@blm.gov
Subject: SunZia Transmission Line Project
Date: 06/09/2010 08:19 AM

Dear Adrian,

I am writing today to let you know that it is not acceptable to sacrifice our wilderness areas in order to meet the energy needs of the large urban growth centers, that it is not acceptable to introduce a new major infrastructure corridor that will bisect and eventually fragment the wildlife connections that extend from the San Carlos Reservation south through the Aravaipa and Santa Teresa Wilderness Areas, and then further south into the wilderness land of the Galiuro Mountains. There exists a 100-mile-long stretch of land, extending from the San Carlos Apache Reservation all the way south through Gila, Pinal, and Graham Counties to northern cochise County, containing a network of wildlife trails that has never been interrupted by a motorized vehicle road, one of the last remainting wildlife migration corridors of this type and magnitude in the Southwest. This project would open the gates to human development by setting a major precedent for disturbing the wild and open country of the Galiuros. It would open pristine areas to motorized "off-highway" traffic, and eventually degrade the ecosystem to the point that highways, freeways, and associated development will no longer seem like such an impact. We've seen this trend time after time in history, enough to recognize that underregulated growth, like cancer, will continually expand its network of supply lines to feed major growth centers, eventually destroying the host.

Sincerely,

Gary Mackender

Gary Mackender
VR Annex Location Supervisor
The Office of Instruction and Assessment
in the Manuel Pacheco Integrated Learning Center
1500 E. University Blvd., Bldg. 70
University of Arizona
Tucson, AZ 85721

vr.arizona.edu
520.626.3007 office
520.204.4556 cell

From: Judith Malen
To: NMSunZiaProject@blm.gov
Subject: SunZia SW - Should not go through Avra Valley
Date: 05/09/2010 03:31 PM

I attended the scoping meeting and became convinced that the SunZia SW project is a very bad idea to go through the Avra Valley/Picture Rocks area. Arizona must protect its unique environment. It is why so many tourist dollars come to this area, once it is gone, so are those dollars. It is also an approved Migratory Corridor which is as important as the San Pedro River Valley. It is my understanding that this has already been designated a protected area which cannot be destroyed for reasons like the SunZia.

One thing that I never hear anyone talk about is the fact that this area is a high lightening impact area - a great place for tall metal poles whether they have lightening rods or not.

Don't be short sighted and destroy this tourist dollar area. I feel that the poles should be put by I-10 or some other place not so sensitive to permanent destruction.

Thank you,
Michael C. Schneider
11680 W. Tortoise Trail
Tucson, AZ 85743

From: Carol Markstrom
To: NMSunZiaProject@blm.gov
Subject: Opposition to SunZia Project
Date: 06/08/2010 01:07 PM

June 8, 2010

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

Carol Markstrom, Ph.D._____June 8, 2010

Catalina, AZ

From: pamela
To: NMSunZiaProject@blm.gov
Subject: Transmission Line Project
Date: 06/07/2010 09:40 PM

June 6, 2010

New Mexico Bureau of Land Management:

Although I support the construction of a new power line to support "green power" I believe this line should run along routes to the east and south and NOT along the Rio Grande Corridor flyway. Routes with valley crossings between Socorro and Belen would pose a great hazard to the seasonal and daily flight patterns of the Sandhill Cranes and Snow Geese as well as the hundreds of thousands of birds that migrate along this route. River crossings and valley transmission lines will kill many avifauna that already suffer from reduced and threatened populations due to habitat loss and climate change relative to global warming.

The route along the eastern boundary of White Sands is the most feasible, I believe. Any route through the Sevilleta National Wildlife Refuge, the Bosque del Apache National Wildlife Refuge and the Rio Grande Corridor is absurd and completely abusive.

Furthermore, it would be eco-smart to color the lines in some fashion that birds may see, even at night.. As for the disruption to the ground regarding pole installation, non-contaminating products and minimal soil disruption should be observed. In other words, don't use a bulldozer if you can use a smaller and more maneuverable machine such as a bobcat.

Sincerely,

Pamela Canyonrivers Marshall
Pecos, New Mexico

From: keith martin
To: NMSunZiaProject@blm.gov
Subject: Keep SunZia lines out of the San Pedro Valley
Date: 04/23/2010 05:52 PM

While no choice is perfect and without impacts, a route that follows existing highways and power lines would have a far smaller impact on wildlife, wild lands, and rural communities than routes through the San Pedro Watershed

From: keith martin
To: NMSunZiaProject@blm.gov
Subject: Keep SunZia lines out of the San Pedro Valley.
Date: 04/23/2010 05:50 PM

Keep SunZia lines out of the San Pedro Valley.

Thank you.

From: Charles Martin
To: NMSunZiaProject@blm.gov
Cc: friends@sda.org
Subject: Power lines near Bosque del Apache
Date: 06/05/2010 12:30 PM

President Roosevelt set aside Bosque del Apache as a sanctuary for migrantory wildlife in 1935. I can not believe that anyone or any group would propose or even consider a transmission project that would destroy 75 years of work by man to protect the migratory wildlife.

I agree with Bosque del Apache that an eastern route through the edge of White Sands is a more feasible route for the SunZia Southwest Transmission Project.

Charles R. Martin
765 Baytree Drive
Titusville, FL 327780

From: Camille Massie
To: NMSunZiaProject@blm.gov
Subject: Say No
Date: 06/04/2010 01:14 PM

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Thank you,

Camille Massie
131 La Cueva Rd.
Glorieta, NM 87535

From: kmcl@zianet.com
To: nm_comments@nm.blm.gov
Cc: NMSunZiaProject@blm.gov
Subject: transmission lines thru Bosque del Apache
Date: 06/04/2010 10:07 PM

Katie McLane RPh, MS,MA , member of National Audubon Society, Sierra Club, and supporter of environmentally conscious efforts, and voter sends the following message:

kmcl@zianet.com

Subject: Fw: Power lines near Bosque del Apache- deadline for comment is June 10

I spend at least one day a week at the Bosque del Apache photographing birds and other wildlife. Please don't ruin this for me. Thirty years ago I moved to NM because of the beauty of the state. I believe that ontinued development will ruin what I came here to enjoy. Las Cruces, my home, is nonow experiencing some of the problems associated with continual growth, including many home invasions by burglars, drug trafficing, a lot of traffic, and increasing utility costs. I do not want to leave NM but am prepared to move elsewhere if growth continues, perhaps to Europe.

I am opposed to the proposal to build a power transmission corridor across the Rio Grande Valley in the vicinity of Bosque del Apache. Our voices were heard last year, and instead of SunZia moving forward with their environmental impact study, they did an evaluation and came up with additional routes between Socorro and Belen; HOWEVER, they DID NOT remove the possibility of routes near the refuge, they DID NOT incorporate an underground river crossing, and, with the new route options, they DID NOT remove the threat to our migratory birds. The data and technical support are there for them to minimize biological and community impact, but they must hear that we are not going to let them plow through our community, ruining our land values, hurting our economy, and endangering our wildlife. Please let them know you care!

The Friends of the Bosque are submitting the following comments:

I would like to convey my opposition to the proposed study area expansion, as itdoes not provide any new routes that would relieve my concerns regarding thewildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns ofsandhill cranes and snow geese, as well as the migratory pathway for hundredsof thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorroand Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in thecommunity, I believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, andmobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues.
To move forward, SunZia must acknowledge the more suitable routes to the eastand south and obtain the appropriate scientific support and data to demonstrateminimal environmental impact. These resources are available, all of thepartners have come to the table, and it has been demonstrated that our criteria(route and underground) are feasible and not cost-prohibitive; now SunZia mustmake the responsible decision not to bulldoze through the small community andwildlife that cannot handle and do not want this project.

Comments can be made to the BLM via the BLM Project Website at http://www.blm.gov/nm/st/en/prog/more/lands_realty.html via the project email address at NMSunZiaProject@blm.gov or in writing to the Bureau of Land Management, SunZia Transmission Line Project, P.O Box 27115, Santa Fe, NM 87502-0115. Deliveries will be accepted via courier/hand delivery to the Bureau of Land Management, SunZia Transmission Line Project, 301 Dinosaur Trail, Santa Fe, NM 87508.

Thank you!

From: Jennifer McStotts
To: NMSunZiaProject@blm.gov
Subject: Sun Zia in the San Pedro watershed.
Date: 04/29/2010 12:15 PM

The lower San Pedro Watershed including the community of Cascabel would be irreparably damaged by the 16 story high, 1000 ft. wide power line and access corridor proposed by Sun Zia to be run through it, as well as by the additional roads to each electrical tower. This would devastate a precious landscape in need of more protection, not fragmentation. The San Pedro is one of the most important bird and mammal habitats in North America, including Arizona's last undammed and free flowing river. Threatened and endangered fish, birds, mammals, reptiles, and amphibians live there. Rural people live and make their living there. SunZia lines could disrupt all of this and lead to even further development. As the BLM knows, there are other options for transporting energy to where the SunZia Southwest Transmission Project wants it. While no choice is perfect and without impacts -- even the no action option considered has major downsides -- a route that follows existing highways and power lines would have a far smaller impact on wildlife, wild lands, and rural communities than routes through the San Pedro Watershed. Please choose such an option.
Jennifer McStotts

From: Bob Merkel
To: NMSunZiaProject@blm.gov
Subject: DO NOT ALLOW 500-WATT POWER LINES TO GO OVER THE RIO GRANDE NEAR THE REFUGE
Date: 06/04/2010 08:46 PM

I am completely opposed to the idea of putting high-power lines over the Rio Grande anywhere near Bosque del Apache National Wildlife Refuge.

The most logical and least expensive alternative is to cross the river somewhere between Hatch and Las Cruces where in some areas the river runs narrowly between two high bluffs. From there the lines should run north close to the San Andres mountains and west of the White Sands Missile Range.

This is a situation where the U.S. Military establishment really needs to cooperate so that renewable power from wind and solar installations in eastern New Mexico can be delivered efficiently and at minimal cost to the population centers in Arizona.

Robert S, Merkel, 601 Western Ave., Socorro, NM 87801-4449.

From: Bob Merkel
To: NMSunZiaProject@blm.gov
Subject: ALTERNATE ROUTE FROM SUNZIA MIDPOINT STATION TO WEST BOUNDARY OF WSMR
Date: 04/27/2010 10:25 PM

At the SunZia scoping meeting earlier today I registered comments with the court reporter and also submitted the same comments on a response form. Since then I've studied the proposed routing further and want to make the case for crossing the Rio Grande somewhere along ~ 4 miles of canyon between Radium Springs and Hatch.

The SunZia maps show the proposed "midpoint substation" to be sited north of I-10 and east of Deming near the Dona Ana County line. A very direct route through BLM and maybe some state land could go from there past the Ruins of Ft. Mason (see p. 46 of the deLorme New Mexico Atlas & Gazetteer) to the Rio Grande 3-5 miles north of Radium Springs. There is a river reach of about 4 miles there (14-15 miles SE of Hatch) with high mesas on both sides and NO agriculture because there if virtually no floodplain. A high power line crossing of the river there would be a minimum risk to birds such as the cranes and snow geese. It would also be considerably cheaper than the underground river crossing that may well be demanded anywhere near San Antonio, Socorro, Lemitar, or up toward Belen.

East of the Rio Grande, at that point, there is some state land which may be controlled by NM State Univ. but beyond there are almost entirely BLM sections north to the existing proposed route along the west edge of WSMR from ~10 miles east of Upham.

If the proposed route just west of WSMR can be deemed acceptable, this routing east from the Deming substation may well be cheaper and better than any other alternative.

Robert S. Merkel, Socorro (Secy. of Friends of Bosque del Apache).

From: Robert Tafanelli
To: NMSunZiaProject@blm.gov
Subject: SunZia Southwest Transmission Project
Date: 06/10/2010 02:12 PM
Attachments: SunZia Southwest Transmission Project.doc

Dear Mr. Garcia:

Please find attached comments on the SunZia Southwest Transmission Project from Mesilla Valley Audubon Society.

Thank you for the opportunity.

Sincerely,

Robert Tafanelli
Conservation Chairman
Mesilla Valley Audubon Society

MESILLA VALLEY AUDUBON SOCIETY

PO Box 1645
Las Cruces, NM 88004

10 June 2010

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

Dear Mr. Garcia:

On behalf of the Mesilla Valley Audubon Society (MVAS) we would like to submit the following comments on the SunZia Southwest Transmission Project.

The MVAS fully supports the development of alternative energy sources such as wind, geothermal and solar for a more sustainable future. However, it must be done in an ecologically friendly manner, otherwise it defeats the purpose. More of the energy generation from these sources should be done at the point of use. For example, on the roof tops of buildings and covered parking lots both public and private thus reducing the need for as many long distance transmission lines. The SunZia transmission line and the windmills associated with it must not degrade the land (especially public land) or the wildlife that live on it.

If the powerline must be built then the best route would be as far away from sensitive wildlife habitat and the Rio Grande as possible. Riparian habitats are among the most productive and ecologically diverse habitats in North America. They provide the essential food and water for numerous species of migratory birds and other species. These same riparian habitats have suffered the greatest losses due to human development and are among the most endangered habitats in North America. The Rio Grande is the major north/south bird migration corridor in the western United States.

Powerlines are notorious for killing and injuring birds, therefore the placement of this powerline is extremely important. Current science seems to indicate that the best location for the powerline is to run around the east side of White Sands Missile Range. It is also suggestes that all infrastructure be placed as far back from the river as possible. Since there is no “good” place for the powerline to cross the river, at the river and adjacent riparian habitat and all other sensitive habitat areas it should be placed underground.

Detailed site specific bird data should be collected by independent researchers throughout the year, but especially during migration, before a final decision is made. Any additional habitat sensitive areas identified, including those mentioned above, should be avoided or adjustments made to eliminate the conflict. Only in that way will it be safe for migrating wildlife.

Thank you for this opportunity comment on the SunZia powerline placement.

Sincerely,

Robert Tafanelli
Conservation Chairman
Mesilla Valley Audubon Society
btafanel@zianet.com

From: Tito Meyer
To: NMSunZiaProject@blm.gov
Subject: SunZia Project
Date: 06/07/2010 11:50 AM

I agree with the comments of "Friends of the Bosque del Apache National Wildlife Refuge", as follows:

> "On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.
>
> Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project."

Thank you, Tito Meyer

--
Robert (Tito) Meyer, Lawyer

<tito@zianet.com>
575-524-4540
fax 575-526-3286
1155 South Telshor Blvd, Suite 302A
Las Cruces, NM 88011-4788

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From: Michelle Miano
To: NMSunZiaProject@blm.gov
Subject: comments on proposed project
Date: 06/07/2010 01:00 PM

Dear BLM,

As a citizen of the state of New Mexico, I urge you not to move forward with developing transmission lines near the Bosque del Apache Wildlife Refuge. Please consider moving away from this beautiful area and sanctuary for birds while considering routes. A few weeks ago, I spent a weekend marking fence lines to prevent lesser prairie chickens from running into the wires. It would be very disappointing to me to hear that Sandhill Cranes and other birds might face similar problems from a new project. We live in a time where we need to seriously consider the environment in all of our decisions and work in harmony with nature instead of against it. The oil spill in the Gulf is a clear example of this.

Please consider an alternative route.

Thank you,
Michelle Miano

351 E Alameda St
Santa Fe, NM 87501

From: Robert K Wright
To: NMSunZiaProject@blm.gov
Cc: john_vradenburg@fws.gov
Subject: Routing of line in Rio Grande corridor
Date: 05/31/2010 12:24 PM

To whom it may concern:

As a long-term visitor to the Bosque del Apache refuge south of Socorro, I urge you to avoid routing the line through flyways for sandhill and whooping cranes. Especially, I urge you to avoid crossing the Rio Grande at any point north of the refuge or routing the line close the the river north of the refuge.

Thank you for your attention:
Robert K. Wright

From: Susan M. Mogilka
To: NMSunZiaProject@blm.gov
Subject: SunZia Project
Date: 06/04/2010 02:29 PM

Dear Sir,

As a member of Friends of the Bosque del Apache National Wildlife Refuge and a faithful annual visitor to this precious Refuge, I convey opposition to the proposed SunZia study area expansionas because it still does not provide routes to protect wildlife and the economy of that local area. Routes with valley crossings still pose a hazard to daily flights and the migration of Sandhill Cranes and hundreds of thousands of other birds.

The needed energy structures will also permanently mar the natural landscape I visit every year as a paying tourist to the local community of Soccoro, and unless this natural beauty is preserved, I and tens of thousands of other tourists would find no purpose to visit there and spend money.

The Friends of the Bosque care about the enegery needs of people as well as their need to preserve wild places and have offered feasible and balanced alternatives to serve both these needs. I therefore ask that you require SunZia to recognzie more suitable routes and work collaboratively with all business and science groups knoweldgeagle about the best way to proceed so both the beauty and economy of that area can be protected.

This country simply cannot afford one more catastrophic enviromental disaster like the one presently occuring in the Gulf Region because of the lack of early cooperation between the needs of business who produce energey, and the envirmental needs upon which many people's livelihoods depend.

Thanks you.

Susan Mogilka
Los Angeles, CA

From: Eleanor Wootten
To: NMSunZiaProject@blm.gov
Cc: kstockdale@audubon.org
Subject: Comments on the NM Sun Zia Project
Date: 06/07/2010 11:25 AM

Dear Sirs,
Below are some comments I appreciate your taking into consideration regarding the NM Sun Zia Project.

Since the Rio Grande River is the lifeblood for wildlife in New Mexico great care and consideration must be given to crossing this historically significant river with the power lines. This river is a corridor of huge importance that is at this time being partially restored to its former lush riparian habitat in the southern part of New Mexico after decades of human abuse in the past. There are areas on this river where Southwestern Willow Flycatchers occur as well as hundreds of Sandhill Cranes using it during the winter months. In fact, there are literally hundreds of bird species tied to this river. Riparians areas are magnets to a plethora of plants and animals all year long. This makes them critical to the wildlife tied to them.

Wherever transmission lines do cross the Rio Grande, markers should be used so the birds can avoid collision with the lines easily. There needs to be a program in place for continued monitoring of these lines and replacement of the markers on a regular basis. In fact a review of the impact of this powerline should take place every 3 to 5 years at a minimum to make sure nothing detrimental and unexpected is occurring to wildlife with the goal of correcting any unexpected or unintended detrimental effects.
Where there are sensitive wetland areas the transmission lines should be put underground.

As we see climante change many renewable energy sources and conservation can help wildlife if sited and constructed properly so they don't harm birds and other wildlife (bats and birds in the case of wind power).

Thank you for this opportunity to give these comments.

Sincerely,

Eleanor G. Wootten
for T&E, Inc.
PO Box 190
Gila, NM 88038
PO Box 190

From: kwamome@aol.com
To: NMSunZiaProject@blm.gov
Subject: Aravaipa Canyon
Date: 06/09/2010 09:34 PM

Adrian Garcia:

I own 70 Acres in the Aravaipa Canyon, Arizona.

This is a Wilderness area, according to the United States of America, and must remain in the condition that exist today.

the project you are seeking to use to destroy our Canyon is not to be tolerated

steve murray</HTML>

From: Mary Myers
To: NMSunZiaProject@blm.gov
Subject: choose the Tucson route
Date: 05/30/2010 09:50 AM

PLEASE!
If this project is really proposing to support the major energy markets, then it should work with the major energy market in the region it passes through. Routing through Tucson and more coordination with Tucson Power Electric Company will allow more local access to power in these lines and make much more efficient use of existing infrastructure corridors. *It will avoid permanent damage to wilderness areas in the Galiuro Mountains and the riparian ecology of the San Pedro River.* The Aravaipa/Galliuros wilderness areas should not be used as source of cheap public land in order to maximize corporate profits and control of energy resources for the project sponsors. If the project sponsors cannot afford to pay the true cost of developing this corridor in an environmentally responsible manner, then they should look to another region for passage to their ultimate destination.

Mary Myers
Mammoth AZ

From: panegri1@comcast.net
To: NMSunZiaProject@blm.gov
Subject: San Pedro Power Line
Date: 05/05/2010 12:49 AM

Dear BLM Project Manager:

I am writing to comment about the proposed construction of two 500-kilovolt power lines along the San Pedro River Valley. The San Pedro River corridor is internationally recognized as an Important Bird Area. As an active birder who has been birding along the San Pedro River for over 30 years, I am strongly opposed to the construction of a power line in the lower San Pedro watershed. Construction of power lines should be restricted to already developed corridors such as I-10 and other existing utility transmission sites.

Preservation of undisturbed habitat along the San Pedro is crucial for the 350 species of birds and 87 species of mammals who use this area for migration and breeding. In addition to providing habitat for birds and animals, the thousands of birders who visit the San Pedro annually helps the economy of Southern Arizona. Riparian corridors are fast disappearing throughout Arizona and the rest of the United States. The San Pedro Watershed is such a treasure that its protection should be the highest priority for the BLM.

Pam Negri
5098 N Via Gelsomino
Tucson AZ 85750

From: Georgie Wood
To: NMSunZiaProject@blm.gov
Subject: Transmission Line
Date: 06/03/2010 07:52 AM

Mr. Garcia,

Having been a resident of lower Aravaipa Creek in Pinal County, Arizona for over fifty years, I am very much against the Aravaipa Valley being desecrated by a high power transmission line.

Georgianna Wood

From: STOCKDALE, Karyn
To: nmsunziaproject@blm.gov
Cc: adrian_garcia@nm.blm.gov; chrustay@aol.com
Subject: Comments from Audubon on the SunZia Transmission Line
Date: 06/10/2010 11:27 AM
Attachments: SunZia comments.Audubon.June10.2010.pdf

Please accept these comments from Audubon New Mexico, the state office of the National Audubon Society, and the New Mexico Audubon Council, the conservation council made up of representatives of Audubon's chapters in New Mexico, regarding the SunZia Project in New Mexico.

We would appreciate you confirming receipt of these comments.

Thank you,
Karyn

Karyn Stockdale
Executive Director
Audubon New Mexico
P.O. Box 9314
Santa Fe, NM 87504
(505) 983-4609
kstockdale@audubon.org
http://nm.audubon.org

Audubon New Mexico: Connecting people with nature for conservation action. Learn more about Audubon’s conservation work and chapter programs in your community, including activities at the Randall Davey Audubon Center at http://nm.audubon.org.

Please support Audubon New Mexico with a gift through our secure website. Thank you!

Audubon NEW MEXICO

Randall Davey Audubon Center
P.O. Box 9314
Santa Fe, NM 87504-9314
Tel: 505-983-4609
Fax: 505-983-2355

June 10, 2010

Delivered via electronic mail (adrian_garcia@nm.blm.gov; nmsunziaproject@blm.gov)

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

Re: Scoping comments from the Audubon Society on new alternative routes for the proposed SunZia transmission project

Dear Mr. Garcia,

Please accept and fully consider these comments on the proposed SunZia transmission project (SunZia) by Audubon New Mexico, the state office of the National Audubon Society, and the New Mexico Audubon Council, representatives from Audubon chapters across New Mexico (Audubon). These comments supplement the comments submitted in November 2009 by Audubon and in partnership with the Wilderness Society, Natural Resources Defense Council, and partners.

Renewable energy sources and energy conservation provide significant environmental benefits for birds, wildlife, and their habitats. The Audubon Society understands and supports developing some of the wind, solar, and geothermal resources as important steps to creating a sustainable energy economy and combating climate change. Audubon supports renewable energy development provided that it is sited, designed, constructed, and operated to responsibly minimize harmful impacts on the environment. In particular, we believe that siting of renewable power and transmission line development in New Mexico should contain appropriate stipulations regarding wildlife and avian resources inventory, mitigation, and monitoring, including the cumulative effects of expanded development in both space and time. It is our hope that these comments help developers choose sites that are the least environmentally fragile.

Properly sited to avoid impacts to sensitive wildlife habitat, wildlands, and the Rio Grande river corridor, the SunZia line could help meet our clean energy and climate goals by providing access to wind and solar projects in New Mexico and Arizona. The SunZia project is intended to transport electricity generated from New Mexico energy sources to western power markets. Although SunZia says the primary sources of energy will be from renewable sources, Audubon is concerned that the energy transmitted across this

line may not be from renewable sources since there are no restrictions in place. Priority for capacity on SunZia should be given to renewable energy projects.

About Audubon

As a field office of the National Audubon Society, Audubon New Mexico's mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity. Audubon aims to enhance the knowledge of New Mexico citizens to make informed decisions about the protection of wildlife and to empower them to be active stewards of the planet. Audubon is known for its science-based approach to advocacy and its accomplishments in the areas of nature education, conservation including citizen science, and public policy.

In New Mexico, Audubon has almost 5,000 members and volunteers. There are four local Audubon chapters throughout New Mexico – Mesilla Valley Audubon Society, Southwestern New Mexico Audubon Society, Central New Mexico Audubon Society, and Sangre de Cristo Audubon Society – which are community-based organizations run entirely by local volunteers with programs that range from field trips to public policy advocacy. These chapters provide Audubon with a local constituency and leadership in many of New Mexico's largest and fastest growing communities including Albuquerque, Las Cruces, Santa Fe, Los Alamos, Silver City, and Belen.

Audubon New Mexico and the New Mexico Audubon Council – representatives of our Audubon chapters – have been leaders in environmental advocacy in New Mexico for more than 30 years. Audubon is involved in efforts to reform our energy policies to address climate change, increase funding for conservation and outdoor education opportunities, and preserve the Important Bird Areas across New Mexico. Audubon is working to protect and restore our state's rivers and riparian ecosystems, with on-the-ground volunteer restoration activities, in advocating for additional conservation funding, and in the management of our water.

The Important Bird Area program, coordinated in the U.S. by the National Audubon Society and in other parts of the world by Bird Life International, enables scientists to identify places essential to birds for breeding, wintering or migrating. New Mexico currently has 62 IBAs which include sites like Bosque del Apache National Wildlife Refuge, Ladd S. Gordon Waterfowl Complex (composed of the Belen, Casa Colorada, Bernardo, and La Joya Waterfowl Areas), Rio Grande Nature Center, the Gila Bird Area along the Gila River, Valles Caldera National Preserve, and Otero Mesa.

Importance of Rivers and Riparian Areas in New Mexico

Riverine and riparian ecosystems are the most productive, biologically diverse, and threatened habitats in the American Southwest (Johnson and Jones 1977, Johnson et al. 1985, Knopf et al.1988, Ohmart et al. 1988, Johnson 1991, Minckley and Brown 1994). Riparian habitats support ecological processes and diverse assemblages of distinctive

species that are not found in the surrounding uplands (Stevens et al. 1977, Minckley and Brown 1994).

Despite their great ecological importance, land management activities, such as flow regulation and other anthropogenic activities have substantially compromised the ecological integrity of stream, wetland, and riparian ecosystems throughout North America (Minckley and Brown 1994, Dale et al. 2000). Estimates of riparian habitat loss range from 40% to 90% in the arid southwestern states (Dahl 1990), and riparian habitats are considered to be one of the region's most endangered ecosystems (Minckley and Brown 1994, Noss et al. 1995).

There are many reasons why the Rio Grande corridor is so critical for birds. During spring and fall migration, the shorelines, mudflats, and sandbars of the reservoir and river in this area provide important feeding grounds for migrating shorebirds and waterbirds that need to refuel during their journey along the river corridor. The waters of the Rio Grande in this area also support valuable riparian forests and marshes which host breeding populations of many neotropical migrants such as warblers, tanagers, and flycatchers, and these same riparian habitats are critical migration stopovers for other species that breed farther north.

The Middle Rio Grande Valley – Critical for Migratory Birds

Audubon has concerns about the impacts of the SunZia transmission line on the Rio Grande, particularly with the Middle Rio Grande Valley and the specific route along New Mexico Highway 380, crossing the Rio Grande three miles north of the Bosque del Apache National Wildlife Refuge. Because of unacceptable impacts to migrating Sandhill Cranes and other important birds and wildlife, <u>BLM should not select any routes crossing the Rio Grande near the Bosque del Apache National Wildlife Refuge or in the Middle Rio Grande Valley, unless environmental analysis shows that running the line underground in this area would sufficiently limit impacts</u>.

This latest round that expanded the Scoping/Study Area north to Belen, New Mexico does not adequately reduce or address the environmental impacts associated with a power and transmission line routed through the Middle Rio Grande Valley.

Routes north of the Bosque del Apache National Wildlife Refuge will compromise the establishment purpose of the Bosque del Apache NWR and even the Ladd S. Gordon Waterfowl Complex managed by the New Mexico Department of Game & Fish and could significantly harm the financial investments in habitat restoration and forage for birds made by the federal and state governments. Bosque del Apache NWR was established using the authority of the Migratory Bird Conservation Act (16 U.S.C. 712d) of 1936, **to provide refuge and breeding grounds for migratory birds and other wildlife** as well as incidental fish and wildlife-oriented recreational development, the protection of natural resources, and the conservation of endangered species or threatened species. Additional lands were added by Executive Order 82189 in November 1939.

The Ladd S. Gordon Waterfowl Complex is a cooperative project between the New Mexico Department of Game & Fish and the U.S. Fish and Wildlife Service to feed and harbor migrating waterfowl along the Rio Grande corridor. Because of the importance to migrating and wintering ducks, geese, and cranes, this waterfowl complex was designated as an Important Bird Area in 2000. These refuges feed approximately one-half of the wintering waterfowl in the Middle Rio Grande Valley (NMDGF website at http://www.wildlife.state.nm.us/conservation/wildlife_management_areas/index.htm). Because of the The Belen Waterfowl Area is four miles south of Belen on New Mexico 109. This 230-acre farm grows corn and alfalfa for migrating waterfowl. The Casa Colorado Waterfowl Area comprised of 420 acres of cultivated crops is six miles south of Belen on New Mexico 304. The Bernardo Waterfowl Area is 17 miles south of Belen near Bernardo and straddles U.S. Highway 60. This property consists of more than 1,700 acres with 450 acres in cultivation and is open to the public on most days, with recent improvements for bird viewing and photography platforms. An auto tour loop and two short hiking trails also give visitors views of birds in fields and ponds. The La Joya Waterfowl Area is 22 miles south of Belen, just east of I-25 and consists of 3,500 acres containing 600 acres of man-made ponds to provide winter feed and resting areas.

Located on the southern end of the Central Flyway and along the key migration corridor of the Rocky Mountain population of Sandhill Cranes, the Middle Rio Grande Valley, more specifically the Socorro reach of the valley, has been integral in the rebuilding and protection of this waterbird population. During the early 1900's the Rocky Mountain population of Sandhill Cranes numbers plummeted due to habitat alteration, land fragmentation, and human population growth (Taylor 1999). By the 1940's, the population was estimated to be fewer than 400 birds. Efforts to protect habitat, restore wetlands, and enhance existing natural and agricultural habitats in combination with sound population management practices helped the species recover to between 18,000 and 20,000 birds annually (Taylor 1999). Today along with the Rocky Mountain population cranes, the Middle Rio Grande Valley plays host to hundreds of thousands of migrating and wintering waterbirds and countless breeding and migratory neotropical migrants and raptors including the endangered Southwestern Willow Flycatcher and the candidate species Yellow-billed Cuckoo.

State of the Science on Sandhill Cranes

The State of New Mexico has developed a Long-range Management Plan for Sandhill Cranes and this species is a New Mexico Species of Greatest Conservation Need as identified in the State Wildlife Action Plan (NMDGF 2003 and 2006). However, the primary authority for management of the species lies with the US Fish and Wildlife Service.

There is one species of crane found in New Mexico, the Sandhill Crane (*Grus canadensis*), with three identified subspecies found in the state: Lessers (*G.c. canadensis*), Canadians (*G.c. rowani*) and Greaters (*G.c. tabida*) (NMDGF 2003). Migration and wintering areas are of concern in New Mexico. These areas are described in the New Mexico Department of Game and Fish's Long-Range Plan, but, briefly,

include the entire Rio Grande Valley from the Colorado line to northern Dona Ana County, the Pecos River watershed from Roswell to Carlsbad, and from Las Vegas National Wildlife Refuge in western San Miguel County southwest to the Middle Rio Grande Valley. Additional areas include Grulla National Wildlife Refuge, Roosevelt County and surrounding areas southwest to Roswell, the Las Uvas Valley south to Columbus in Luna County, and from Bosque del Apache National Wildlife Refuge southwest to Wilcox Playa, Arizona. Fewer numbers migrate through and winter at Maxwell National Wildlife Refuge, Colfax County and the lower Gila River Valley, Grant County.

The Middle Rio Grande Valley, and specifically the Socorro valley, is a narrow corridor that is used by hundreds of thousands of migrating and wintering waterbirds. The Socorro valley has been identified as the most critical landscape in the annual cycle of the Rocky Mountain population of Sandhill Cranes (approx 20,000 annually in the population) due to the density of wintering birds in one location, the limited availability of foods (natural and wintering), and the small size of this wintering area (Taylor 1999). Research across all Sandhill Crane populations indicates the single most important factor regulating Sandhill Crane populations is habitat availability (Tacha et al. 1992). Understanding the importance of the valley in the context of population viability is essential when evaluating potential anthropogenic impacts**.**

Recently, a subgroup of The *Migratory Shore and Upland Game Bird Support Task Force* focused on establishing the top priority information needs for migratory populations of Sandhill Cranes (Vradenburg, personal communication, April 2010). One of the outcomes of this effort was the finding that the most limiting landscape in the annual cycle of Sandhill Cranes, specifically the Rocky Mountain population, is the Middle Rio Grande Valley and further alterations to the valley could be population compromising. Many geographic constrictions occurs in the Middle Rio Grande Valley which limit the energetic potential of the valley, concentrates the Sandhill Crane population for an extended period, and places them in proximity to large concentrations of other migratory waterbirds. Due the valley's size there are limited habitat resources for foraging and roosting which are becoming increasingly limited due to habitat conversion and degradation resulting from water loss and urbanization. There are limited opportunities for conservation (wetland and agricultural) so there is a sense of urgency to get lands protected to assure longevity of the resources needed by migrating and wintering waterbirds.

Audubon has heard there was a recent study initiated by SunZia to look at crane movements up and down the Middle Rio Grande Valley because of concerns expressed about the crossing north of Bosque del Apache. There appear to be gaps in the study design and Audubon and other migratory bird managers have little confidence that this study is going to provide us much in the way of understanding how cranes use the valley seasonally or daily.

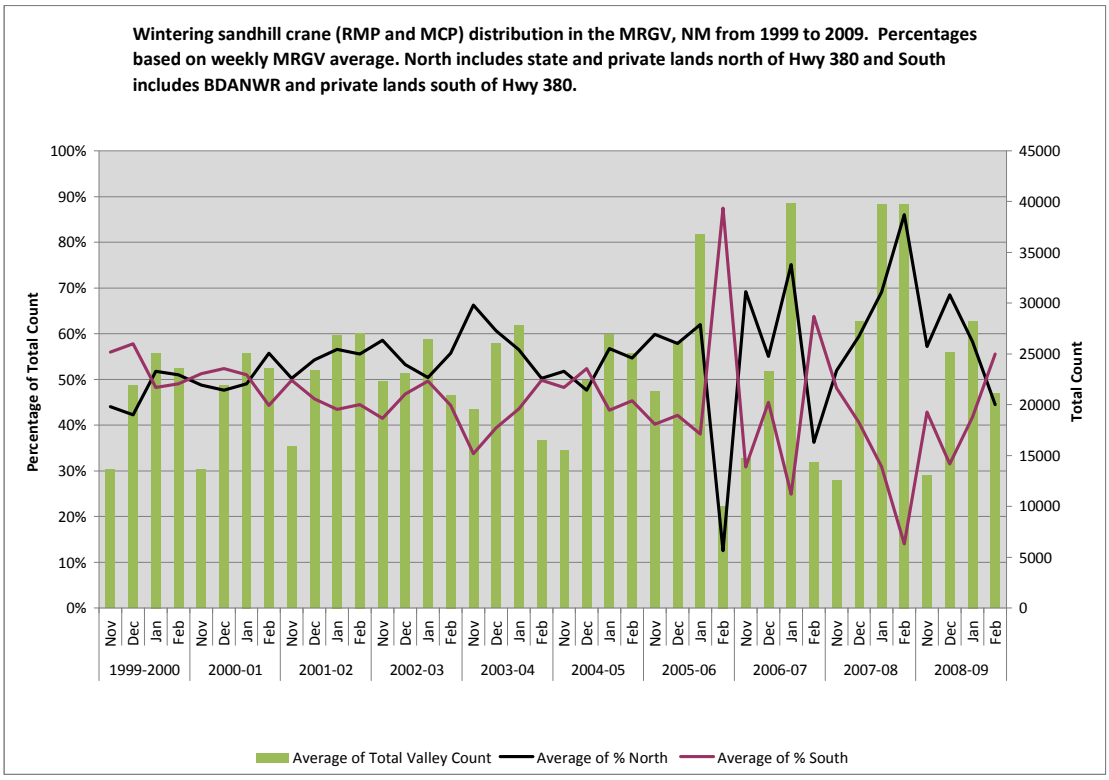
Collisions with the Proposed Transmission Line Highly Likely

Extensive alteration to the Rio Grande and associated floodplain has reduced the available riparian habitat and constricted it to a narrow corridor, particularly in the Middle Rio Grande Valley. This constriction increases the density of birds moving along the corridor increasing the likelihood of collisions.

Sandhill Cranes are threatened from collisions with powerlines. Up to 10% of all mortality is due to collisions with powerlines (NMDGF 2003). An additional 30% of all deaths are from unknown causes, but a portion could conceivably include collisions. During winter cranes need both roosting sites, flat, shallow open wetlands as well as nearby feeding areas which may include wet meadows or other wetlands and cropfields. Cranes in New Mexico have been documenting traveling over 20 miles from roost site to feeding areas (NMDGF 2003).

Collisions with power lines have been well-documented and are a major cause of mortality (Brown and Drewien 1995). In a 2005 USDA Forest Service Technical Report, Manville said that collisions with power transmission and distribution lines are estimated to kill as many as 175 million birds annually, and an additional tens to hundreds of thousands more birds are electrocuted. The difficulty with quantifying the impact of these utilities is that due to great expanse of area they cover they are poorly monitored for both strikes and electrocutions (Manville 2005). Other sources of mortality include hunting (53%) and other shooting incidents (5%) (NMDGF 2003). Cranes generally fly higher than turbines or powerlines. Incidents may occur during landing or takeoff and during inclement weather conditions such as snow storms or heavy fog.

Daily movements north out of Bosque del Apache NWR to Ladd S. Gordon Waterfowl Management Area (managed by the State of New Mexico) or the surrounding agricultural lands expose birds to obstacles in their flight path. Managed agricultural crops are provided at Bosque del Apache NWR and Ladd Gordon Waterfowl Area approximately 40 miles north of the Refuge. Food and hunting management at each of these areas is designed to encourage daily movement between the areas to disperse the population of wintering cranes and snow geese and to reduce disease outbreak and spread (as shown on the chart reproduced below, which was provided courtesy of refuge biologists at the Bosque del Apache NWR). Audubon's greatest concern is the likelihood of collisions for cranes and other migratory birds that forage up and down the Middle Rio Grande Valley and have frequent takeoff and landings. Extreme weather conditions that create poor visibility, which are common along the river during the winter, further increase the likelihood of bird and transmission line collisions.



Winter distribution of Sandhill Cranes throughout the Middle Rio Grande Valley in response to location of food and roost sites.

In the San Luis Valley of Colorado, collisions with transmission lines were one of the contributing mortality factors to the experimental Whooping Cranes population. On certain sections of transmission lines in the San Luis Valley where wetlands and agricultural foods are bisected by transmission lines, Sandhill Crane collision events have been as high as 75 birds a night (information provided by Vradenburg, personal communication, November 2009). Historic bird and transmission line collisions at Bosque del Apache NWR and further north in Colorado stimulated the Refuge to work with the Socorro Electric Cooperative to bury all transmission lines on the Refuge.

Because most areas occupied by cranes are known, **the best alternative for the siting of the SunZia line would be to avoid locating this transmission line and associated structures in known crane concentration areas or to bury powerlines**. Banded cranes have been known to live for 37 years. Cranes return to the same areas year after year, so adverse impacts will have long-term effects. To the extent possible, avoid locating transmission lines near major migration or wintering areas. If this transmission line is located in a wintering area for cranes, avoid placing this infrastructure in areas between potential roosting and foraging areas. Additionally, avoid use of guy wires for powerline tower support.

Recommended Route

Based on current knowledge, **<u>the route with the least environmental impacts is the route around the east side of the White Sands Missile Range</u> in New Mexico**. In

areas where restrictions on air space from military activities would preclude construction of above-ground power and transmission lines, lines should be buried. This eastern route also eliminates environmental impacts to annual spring and fall migration of cranes, waterfowl, shorebirds through the Las Uvas Valley. If subsequent environmental analysis confirms that this route will have the least environmental impacts, BLM should select this route.

Minimize Impacts in Crossing Rio Grande

Any crossing of the Rio Grande will entail significant impacts to migrating bird populations and other wildlife. The following recommendations may reduce impacts to cranes:

1) Set transmission lines and associated infrastructure back from the edges of wetlands and croplands to allow for takeoff and landing by these large birds so that they do not have to pass through lines or facilities.

2) Mark transmission lines with bird flight diverters or other markers so that they can be more easily seen and avoided by cranes. Powerlines marked with markers such as the yellow spiral vibration dampeners or yellow fiberglass swinging plates have been shown to reduce crane mortality by 54% to 63% in different studies. (Brown and Drewien 1995)

3) Bury powerlines and transmission lines in areas where there is high crane use for roosting and foraging and likely potential for collision with takeoff and landings.

4) Where feasible, turbines should be shut down during periods when birds are highly concentrated at those sites.

5) Minimize roads, fences, and other infrastructure.

BLM should consider the option of requiring construction of underground transmission lines where proposed rights-of-way conflict with sensitive biological resources, and where conflicts with military activities may reduce the feasibility of environmentally preferable routes.

General Considerations for Renewable Energy and Transmission Line Development

Pre-decisional information should be gathered concerning the wildlife resources of any area being considered for renewable power and transmission line development. It is important to recognize that in many areas, detailed information is lacking, and that absence of information is not equivalent to indication of the absence of use by wildlife. Surveys adequate to determine the presence of migrants, including nocturnal migrants, must demonstrate that there is no significant use of a proposed site by migrating birds or bats.

As a minimum, survey objectives should include the following:

- Identification of avian and bat species using the area, particularly during migration periods—fall and spring—when large numbers of birds may be moving through the area *(visual and acoustic observations and aerial surveys);*
- Quantitative and qualitative descriptions of the temporal and spatial use of the study area by the identified species, to include data on the altitude at which birds fly over the study area during migration, particularly at night. (*Fine-scale marine radar combined with acoustic monitoring during both fall and spring migrations.);*
- Identification of any high-avian-use areas *(resting or congregating areas, National Wildlife Refuges)* within the overall study area which may pose a higher risk to avian species from development.

Monitoring methodologies should also:

- Be site specific and statistically valid;
- Be peer reviewed by unbiased biometricians and ornithologists who have no financial relationship to the project;
- Include a formal-risk-assessment component that examines the probabilities of and the consequences to wildlife populations of worst-case outcomes;
- Identify the ranges and movement patterns of bird species included on the Partners in Flight Species of Continental Importance as well as state and federal threatened and endangered species and other bird species of management concern.

Thank you for the opportunity to comment on this proposed siting of the SunZia transmission line.

Sincerely,

Karyn Stockdale
Vice President and Executive Director
Audubon New Mexico, the state office of the National Audubon Society
P.O. Box 9314
Santa Fe, NM 87504
kstockdale@audubon.org

Christopher Rustay
President
New Mexico Audubon Council
chrustay@aol.com

Literature Cited and Sources Consulted

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From: Robert B White
To: NMSunZiaProject@blm.gov
Subject: Comment on NM Routes near Windmill Ranches
Date: 06/07/2010 09:28 PM

Hello,

I'm a lot owner in Windmill Ranches near Ancho. Based on the maps and my understanding, my PREFERRED route would be E 80 to E 90 to A 90. UNFAVORABLE would be both A 30 and D 10. Thank you for considering my input and opinion.

Sincerely,

Robert White

From: Dave Wheelock
To: NMSunZiaProject@blm.gov
Subject: Citizen Comment
Date: 06/06/2010 01:08 PM

Greetings,
I am writing to register my support for one of the proposed routes for the SunZia renewable energy powerline. I favor the route that follows the western boundary of White Sands Missile Range, as proposed in the original 2008 application filing by SunZia. The route should avoid all wildlife refuges, wilderness areas, wilderness study areas, and areas of critical environmental concern.

Thank you,
Dave Wheelock
Socorro, NM

From: John Weckerle
To: NMSunZiaProject@blm.gov
Subject: Questions and mailing list request
Date: 06/04/2010 06:44 AM

Please add me to the mailing list for the SunZia Southwest Transmission Project. I am interested in receiving all press releases, copies of all public comments, and the draft environmental impact statement. Electronic copies are preferable where available.

It is my understanding that public hearings were in Socorro, NM; however, local residents have indicated that no notification was provided to East Mountain and Estancia Valley communities. According to one resident, proposed relocated line locations may impact visual resources in the vicinity of Gran Quivira, a historic site that is part of the Salinas Pueblo Missions National Monument, and Deer Canyon Preserve. Please provide copies of all visual resources modeling associated with the project. Please provide also provide copies of all scoping documents; comments submitted to date; minutes, records, and/or transcripts of public scoping meetings; agency consultations including, but not limited to, those conducted with the New Mexico State Historic Preservation Officer, the US Fish and Wildlife Service, and the New Mexico Department of Game and Fish; and all other documentation associated with the project.

Thank you!

Sincerely,

John E. Weckerle, President
WeckTech
1 Sassy Lane
Edgewood, NM 87015
http://www.wecktech.com
(505) 286-4278

From: Alan Hamilton
To: NMSunZiaProject@blm.gov
Cc: 'Jeremy Vesbach'
Subject: Comments on SunZia
Date: 06/10/2010 06:37 AM
Attachments: SunZia.docx

To whom it may concern:

Please see the attached document from the New Mexico Wildlife Federation with comments concerning the SunZia project. A confirmation that this document has been received would be appreciated. Please feel free to contact me if you have any questions.

Best,

Alan Hamilton
Conservation Director
New Mexico Wildlife Federation
505-670-2621
alan@nmwildlife.org

New Mexico Wildlife Federation

Protecting Our Outdoor Way Of Life Since 1914
2610 San Mateo Blvd. NE, Suite A, Albuquerque, NM 87110
505.299.5404 (office) 866-844-5638 (fax)
www.nmwildlife.org

6/9/2010

To whom it may concern:

I am writing on behalf of the New Mexico Wildlife Federation (NMWF) concerning the SunZia transmission lines. The New Mexico Wildlife Federation is a hunting and fishing organization that was started by Aldo Leopold almost 100 years ago. We represent approximately 10,000 members and supporters throughout the state who are committed to protecting wildlife, wildlife corridors, habitat and our outdoor way of life. We understand that Climate change represents an unprecedented threat to fish and wildlife and the NMWF is a strong supporter of legislation that would put a cap on greenhouse gasses and set renewable energy standards. Developing renewable sources of energy is critical to mitigating the impacts that a warming climate is having on our wildlife. The infrastructure for renewable energy, however, like the proposed SunZia transmission lines, must be sited in a way that won't negatively impact the wildlife. It would be incredibly shortsighted to address one threat to wildlife while creating yet another.

The Rio Grande may be the most important wildlife corridor in New Mexico. Many species of birds and butterflies migrate hundreds and thousands of miles up and down the Rio Grande. The Rio Grande and other important wildlife corridors in New Mexico are becoming increasingly fragmented and the NMWF along with many other agencies and organizations is committed to better understanding, documenting and protecting these corridors. Transmission lines crossing the Rio Grande will undoubtedly have significant impacts to migrating bird populations and other wildlife because they will physically bifurcate this passageway. Sandhill Cranes, waterfowl and other migrating birds could be deterred or snared by these lines strung across this corridor that has been in use since time immemorial. The electromagnetic field emanating from these lines may have additional impacts to wildlife. For these reasons, all the proposed crossings of the Rio Grande are problematic, especially the proposed route crossing at Highway 380 just north of Bosque del Apache.

In our opinion, the best route for the SunZia line is on the east side of White Sands Missile Range. And where the SunZia line eventually crosses the Rio Grande, mitigation measures must be put in place that include avoidance of critical wetlands, riparian areas, and agricultural fields used for foraging. If at all possible we recommend burying the lines underground in areas that crane's and other migratory birds roost and forage because of the potential for collision with takeoff and landings. BLM should require construction of underground transmission lines where proposed rights-of-way conflict with sensitive biological resources and military activities.

Thank you for taking our concerns and comments into consideration.

Alan Hamilton
Conservation Director
New Mexico Wildlife Federation

From: Jack O. Walden
To: NMSunZiaProject@blm.gov
Subject: Proposed transmission line
Date: 05/06/2010 06:44 AM

Dear Project Manager Adrian Garcia:
Please route your new high voltage lines through existing major infrastructure corridors, thereby protecting the natural areas of the Aravaipa region and the San Pedro River Valley. It may take a little more effort on your part, but please protect our local wilderness areas in the Aravaipa/San Pedro area. Thank you,
Jack Walden
520-825-6911

From:	imr_regional_director@nps.gov
Sent By:	Bonnie_Semro@nps.gov
To:	NMSunZiaProject@blm.gov; adrian_garcia@blm.gov
Cc:	Glenn_Fulfer@nps.gov; Kevin_Schneider@nps.gov; Catherine_Light@nps.gov; Kym_Hall@nps.gov; Danielle_Foster@nps.gov; Larry_Ludwig@nps.gov; Lisa_Carrico@nps.gov; Darla_Sidles@nps.gov; Meg_Weesner@nps.gov; Karl_Cordova@nps.gov; Sherry_Plowman@nps.gov; Aaron_Mahr@nps.gov; Margi_Brooks@nps.gov; Heather_Germaine@nps.gov; Chris_Turk@nps.gov; John_Reber@nps.gov; Julie_Sharp@nps.gov; Sande_McDermott@nps.gov; Stephanie_Burkhart@nps.gov; Jim_Bradford@nps.gov; Dave_Steensen@nps.gov; Carol_McCoy@nps.gov; Kerry_Moss@nps.gov; Laura_Joss@nps.gov
Subject:	NPS Scoping Comments on the Proposed SunZia Southwest Transmission Project, Environmental Impact Statement
Date:	06/09/2010 04:50 PM
Attachments:	SunZia Scoping Comms Final 6-9.doc

Please see attachment.

(See attached file: SunZia Scoping Comms Final 6-9.doc)

United States Department of the Interior
NATIONAL PARK SERVICE
Intermountain Region
12795 West Alameda Parkway
Post Office Box 25287
Denver, Colorado 80225-0287

In Reply Refer to:
L7619 (IMRO-NR)

VIA ELECTRONIC MAIL – NO HARD COPY TO FOLLOW

June 9, 2010

Memorandum

To: Project Manager, SunZia Southwest Transmission Project, Bureau of Land Management, New Mexico State Office

From: Acting Regional Director, Intermountain Region

Subject: National Park Service Scoping Comments on the Proposed SunZia Southwest Transmission Project, Environmental Impact Statement

The National Park Service, Intermountain Region appreciates the opportunity to provide comment on the Proposed SunZia Southwest Transmission Line Environmental Impact Statement (EIS) being prepared by the Bureau of Land Management (BLM). These comments supplement the information BLM has received from NPS over the more than one year time frame the scoping for the subject proposal has been open. Since the beginning of the EIS more than one year ago, the BLM has significantly changed the Study Area for the proposal, and into areas that affect additional park units under our jurisdiction and management. Thus, these comments are the full NPS scoping comments for the EIS referencing the proposal Study Area identified by the BLM on March 8, 2010.

NPS Units Affected

Eight NPS parks, consisting of eleven separate units are considered by NPS to have concerns of potential impacts ranging from major and significant to relatively insignificant in nature. NPS considers parks even as distant as twenty miles from the Study Area as those with possible concerns, and those impacts should be evaluated.

Three NPS parks, consisting of five separate units lie within the SunZia Project Study Area: Saguaro National Park – East and West Units, White Sands National Monument, and Salinas Pueblo Missions National Monument – Gran Quivira and Abo Units.

One National Historic Trail (NHT) managed by the NPS: the Camino Real de Tierro Adentro NHT.

Six additional NPS parks lie outside, but within a twenty miles of the Study Area: Casa Grande Ruins National Monument – 2.5 miles outside, Tumacacori National Historic Park – 18.5 miles outside, Fort Bowie National Historic Site – 7 miles outside, Chiricahua National Monument – 12.6 miles outside, Chamizal National Memorial – 14.1 miles outside, and Salinas Pueblo Missions National Monument – Quarai Unit – 3.5 miles outside.

Two National Natural Landmarks (NNL) lie in close proximity to the Study Area. Nine additional NNLs are outside of the Study Area in Arizona and New Mexico, but all of them should be considered as indicated in specific comments below.

One National Historic Trail, the El Camino Real de Tierra Adentro National Historic Trail would be crossed by any alternative proposed for the SunZia Transmission Line. This trail, managed by the BLM and NPS in partnership with the Camino Real Trail Association, should be considered in the EIS for impact evaluation and mitigation.

General Comments

NPS believes that the visual impacts to visitors would be greatest when the proposed transmission lines are in closest proximity to the park unit and where the current and historic viewsheds from the park unit are integrally tied to each other. Closely associated to the proximity concerns of the proposed transmission lines would then be both the: 1) Scale (linearly and in height) of the transmission lines and support towers, and the 2) Extensive viewsheds found in much of Arizona and New Mexico.

The proposal and evaluation of alternatives for the transmission line represent the key components of this EIS. Considering the large amount of public, state and private lands within the Study Area, there are ample areas for alternative development. We expect a full range of alternatives to be proposed and offer our assistance in discussing them, particularly those considered proximal to and/or within the viewshed of our park units.

NPS applauds BLM's consideration of using and possibly expanding the existing rights-of-way (ROW) that traverse New Mexico and Arizona: corridors that could carry the proposed SunZia additional transmission lines where utilities already exist. We believe that the appropriate concentration of these transmission lines could reduce land purchase/easement costs, limit or eliminate certain impacts, and expand partnering and sharing of utility infrastructure.

We request that BLM consider all NPS units within and in proximity to the Study Area for new visual resource inventories and evaluated in their updated classes of visual resource management. We believe that a number of the NPS units would be appropriately placed in the highest level of viewshed protection: Class 1.

NPS has direct affiliation with many Tribal nations in proximity to park units and with many of those same Tribes' lands located within the Study Area. NPS has not observed notification or

consultation with the Tribes on the potential transmission line, especially for the expanded Study Area. We would appreciate BLM providing feed-back to us and other concerned participants regarding the consultations with our affiliated tribes for the EIS scoping comments.

Specific Comments

Casa Grande Ruins National Monument

Potential Impact: Visual impacts that the proposed above-ground transmission lines will have to visitor experience at the Ruins. The purpose of the park is to preserve the ancient ruins of the Hohokam Culture and interpret those resources for park visitors.

Salinas Pueblo Missions National Monument

Potential Impact: Visual impacts that the proposed above-ground lines will have on Gran Quivira's historic view shed. Gran Quivira was the sixth National Monument designated in the United States and is eligible for the National Register as a National Historic Landmark (NHL) under all eligibility criteria, exhibiting exceptional integrity. The newly finished Cultural Landscape Inventory for Gran Quivira specifically identifies the site's location, setting, and feeling as integral aspects contributing to the integrity of Gran Quivira's National Register eligible cultural landscape. Due to the close proximity of more than one of the alternative proposed lines and the nature of the surrounding landscape, the construction of above ground transmission lines would introduce visual elements that are out of character with the property's historic setting and would subsequently result in significant visual impacts. The proposed placement of either of these nearby transmission line routes would constitute an adverse action under Section 106 of the National Historic Preservation Act (under Criteria of Effect 36 CFR, § 800.5 a5 as an introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features) to the core significance of Gran Quivira.

Potential Impact: Visitor Experience. The Monument's 1984 Interpretive Prospectus identifies Gran Quivira's setting as a tangible resource that is important to the visitor experience: "Gran Quivira Ruins, perched atop a mesa, seem open to sun and wind – the bare bones of the past exposed to the sky. It gives an impression: clean, spare, remote." Public Law 96-550 established Salinas Pueblo Missions National Monument "to set apart and preserve for the benefit and enjoyment of the American people the ruins of prehistoric Indian pueblos and associated seventeenth century Franciscan Spanish mission ruins." The placement of overhead lines within the historic viewshed of Gran Quivira could adversely impact the visitor experience by changing the view of the historic setting.

Potential Impact: Night Sky. The National Park Service, and its Southern Colorado Plateau Inventory and Monitoring Network has identified night sky as a vital sign for the park unit, which should be monitored and maintained whenever possible. Due to the height of the proposed lines/towers, the close proximity to White Sands Missile Range (WSMR), and the low-flying nature of the missions performed at WSMR, the towers would need to be marked or lighted in a manner that would meet FAA requirements. The addition of visible lighting

elements would adversely impact the pristine night sky conditions currently present at Gran Quivira.

White Sands National Park

Potential Impact: Visual impacts of an alternative transmission line approximately 2.5 miles from the park's entrance and National Register-listed visitor center and historic district. White Sands National Monument's visitor center is an outstanding example of Pueblo Revival architecture, blending national park and Southwest architectural styles. The visitor center is a part of a National Register-listed historic district that comprises a total of eight buildings, including the visitor center, three employee residences, and maintenance buildings, all in the same area and likely within sight of the proposed transmission line. The buildings were constructed by the Works Progress Administration from 1936-37, and they retain their historical integrity today. The proposed placement of a nearby transmission line would constitute an adverse action under Section 106 of the National Historic Preservation Act (under Criteria of Effect 36 CFR,§ 800.5 a5 as an introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features) to the core significance of the visitor center and historic district.

Potential Impact: Visitor experience would be negatively affected by a placement of a transmission line approximately 2.5 miles from the park's entrance and visitor center. Approximately 470,000 visitors come to White Sands National Monument annually. If the transmission lines were located along this proposed route, less than 2.5 miles from the monument, they would almost certainly be clearly visible across the open Chihuahuan Desert landscape Large, high-voltage transmission lines immediately outside the monument would significantly alter the nature of the landscape in this area. The preservation of the area's rural viewshed, along with the rural setting of the National Register-listed historic buildings is a key component of the visitor experience.

Saguaro National Park

Potential Impact: Visual impacts would occur to both the East (Rincon Mountain District) and the West (Tucson Mountain District) units of the park, where alternative alignments cross Tucson with its city limits. Natural viewsheds from the park are considered part of the "scenery" resource that the NPS Organic Act mandates we preserve and protect.

Potential Impact: Visitor Experience may be negatively affected by a large proposed transmission line close to the park. Although some of the current surrounding of the park's East unit are quickly urbanizing, the cumulative impact to visitor experience from this proposed line could be substantial. More than 700,000 visitors from all over the world enjoy the park each year for its recreation, solace, and education.

Potential Impact: Wilderness character should be considered in locating the proposed line close to the park. Both the East and West units of the park contain substantial designated wilderness areas (comprising more than 78% of the park's total area) managed in their primitive condition.

The presence of a large transmission line adjacent to the park would have significant negative impact to wilderness character.

National Historic Trails

Potential Impacts: Visual and Visitor Experience. The El Camino Real de Tierra Adentro National Historic Trail is the longest and oldest of European roads in North America, traversing 407 miles north-south in central New Mexico. Any alternative of the transmission line is likely to cross this trail at least once, potentially impacting the visual resources and visitor experience of this important historic and cultural resource.

National Natural Landmarks

Potential Impacts: Visual, Visitor Experience, Night Sky. The NPS manages a national program for the National Natural Landmarks (NNL). There are several NNLs that could be affected by this project. The first is the Willcox Playa, which is directly west of the town of Willcox, Arizona. Only the BLM-managed portion of the playa has been designated a NNL, but the entire playa meets the criteria for national significance. The Kilbourne Hole is another BLM-managed NNL located southwest of Las Cruces, NM. This NNL is just outside the Study Area, according to the BLM mapping.

Other NNLs in southern Arizona and southern New Mexico appear to be outside of the Study Area, but these sites should be noted as being in the vicinity, as NNLs are often overlooked during NEPA processes. These include Canello Hills, Onyx Cave and Ramsey Canyon in Arizona, and Torgac Cave, Fort Stanton Cave, Bitter Lake NWR, Border Hills Structural Zone, Mathers Natural Area and Mescalero Sands in New Mexico. The specific language from the National Natural Landmarks Program regulations, which have the force of law, follows: at Section 62.6 (f) that deals with NNLs and the NEPA process: "Federal agencies should consider the existence and location of designated National Natural Landmarks, and of areas found to meet the criteria for national significance, in assessing the effects of their activities on the environment under section 102 (2) (c) of the National Environmental Policy Act (42 U.S.C. 4321)."

The NPS seeks mutually beneficial solutions related to potential impacts associated with the proposed project. We look forward to working with the BLM during the development of the EIS to develop solutions that respect natural and cultural resource values, healthy ecosystems, cultural landscapes, and public enjoyment of these places, as well as the need to ensure the provision for transmission of renewable energy in the southwest. We appreciate the opportunity to provide these comments.

If you have any questions or need of additional information, please contact John Reber, Physical Science Resource Program, at (303) 969-2418.

ORIGINAL ON FILE
/s/ Mary Gibson Scott

Authenticated by
Bonnie Semro, 6/9/10

Mary Gibson Scott

cc: Superintendent, Salinas Pueblo Missions National Monument
Superintendent, White Sands National Monument
Superintendent, Chamizal National Memorial
Superintendent, Chiricahua National Monument
Site Manager, Fort Bowie National Historic Site
Superintendent, Tumacacori National Historical Park
Superintendent, Saguaro National Park
Superintendent, Casa Grande Ruins National Monument
Superintendent, Southern Arizona Group
Superintendent, Intermountain National Trails, Intermountain Region
Program Manager, National Natural Landmarks
Intermountain Region: (S.McDermott, S.Burkhart, C.Turk, J.Reber, J.Sharp, J.Bradford)
Division Chief, NRPC Geologic Resources Division

From: sue waid
To: nmsunziaproject@blm.gov
Subject: comments on SW Transmission EIS
Date: 06/07/2010 02:48 PM
Attachments: Sunzia Ltr june 7 2010.doc

June 7, 2010

Keith & Sue Waid
HC 66 Box 608
Mountainair, NM 87036

SunZia Southwest Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

To Whom It May Concern:

With deep concern we are responding to the "Notice of Intent to Prepare an Environmental Impact Statement and Resource Management Plan Amendments for the SunZia Southwest Transmission Project In Arizona and New Mexico" updated April 2010. As permanent residents and ranchers of New Mexico in the Scholle and Chupadera areas (approximately 5-25 miles south of Rt. 60 and 10-25 miles west of Mountainair) we are absolutely opposed to the "Study Area Expansion April 2010". Referencing your maps dated April 23,2010, from the proposed SunZia-East Substation to the San Antonio area turning-point-south, we request that both northerly proposed routes known as "E10" and "E80" (in the expansion study) and route "A50-60-90" (in the original study) be removed from further consideration.

While we believe the best pathway for this entire 460 miles of 500kv transmission line, fair and suitable to the people and wildlife of New Mexico, is simply underground, we do recognize this as cost prohibitive. However, portions of this transmission line must go underground: especially all or portions of the originally proposed "A30-40-80" lines from SunZia-East Substation continuing west to San Antonio along Route 380. The following resources serve as a list of impacts and reasons for the removal of the "E" lines from further consideration as well as for the proposed "A 30-40-80" lines being installed underground:

<u>Natural Environment</u>
Wildlife
- Migratory birds (Bosque Del Apache Refuge)
- Endangered and threatened wildlife (Sevilleta Refuge)

Ranchland/grazing land
- Cattle, horses, wild horses, antelope, birds of prey, small mammals and reptiles

<u>Human Environment</u>
Land Use
- Ranching
- Water/wells (for existing human and animal consumption)
- Wilderness areas
- National Monuments and parks-recreation

Military Lands (White Sands Missile Area)
Military Air Space (Holloman and Kirtland AFB training flight zones)
Visual degradation
Electric magnetic field
Noise pollution
Environmental Justice

Cultural Environment
Archaeology
Prehistoric sites and petro glyphs
Historic Resources (Gran Quivera and Abo Ruins)
Native American Sites
Historic Trails

After some research, we are fully aware of the financial commitment to an underground system. However, in urban and more congested environments as well as in national parks, underground transmission systems are well at work. Since the year 2000, in places such as Massachusetts, New York, California, and Puerto Rico, Burns and McDonnell, a prominent U.S. based electrical engineering consultant and construction firm, has successfully finished miles and miles of underground transmission lines to improve the lives of the respective area residents and lessen the impact on local environments. If 25 miles of transmission line can be buried in San Juan, Puerto Rico, then 50 miles across the northern borders of White Sands Missile Range and Bosque Del Apache is also very possible.

Finally, since the people of New Mexico are not the beneficiaries of this transmission line is it even conceivable that we should bear the sight of it? While a few of our people may benefit from jobs as a result of solar and wind farms, most of our people do not benefit at all—not even from the right and availability to purchase the end product. To ruin our environment with transmission lines (with many more to come in the future) seems a true injustice to our people, wildlife, and especially our children. To go to the "green" extent to save our environment by installing renewable energy farms is extraordinary. But to destroy so much of our New Mexico land for transmission lines is environmentally irresponsible and negligent. Let us do it right the first time. Minimize the impact on our lands permanently. Go underground more often than not.

Respectfully Yours,

Keith & Sue Waid

Cc:
Mr. Adrian Garcia
BLM New Mexico State Office
SunZia SW Transmission Project
P.O. Box 27115 (87502)/301 Dinosaur Trail (87508)
Santa Fe, NM 87502

From: david@omick.com
Reply To: david@omick.com
To: NMSunZiaProject@blm.gov
Subject: SunZia Scoping Comments
Date: 06/10/2010 04:21 PM
Attachments: SunZia Scoping Comments, 6-10-2010.doc

Please find attached and in text below scoping comments regarding the SunZia Transmission Project. Please acknowledge receipt of this message.

June 10, 2010

*Delivered via electronic mail (*NMSunZiaProject@blm.gov)

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115

Re: Scoping Comments on Proposed SunZia Transmission Project

Dear Mr. Garcia,

I would like to make some comments regarding the SunZia Transmission Project. Some of these have more to do with the scoping process than with specific alignment issues.

First, I believe scoping meetings should have been held in the San Pedro Valley. By the time a meeting in Cascabel was arranged by SunZia on January 13, 2010, the maps showing potential alignments in southeastern Arizona were heavily weighted toward routes running north/south through the San Pedro Valley, while no scoping meeting had ever been held anywhere in the Valley. Nor was that meeting of January 13 considered a scoping meeting or entered into the record as such. So in fact, there has still never been a scoping meeting held in any community in the San Pedro Valley.

Second, having done research regarding potential alignments through Tucson, it is clear to me that inadequate effort was put into the selection of proposed routes through the Tucson area. Routes were delineated which had obvious problems, while routes with greater potential were ignored. It is also clear that SunZia did not coordinate adequately with Tucson Electric Power (TEP) regarding alignments in the

Tucson area. TEP's ten-year plans suggest that there are significant opportunities for coordination between SunZia and TEP that would achieve major goals for both entities, and Cascabel Working Group discussions with Ed Beck, Line Siting Supervisor for TEP confirm this. Please refer to the documentation provided by Norm Meader of the Cascabel Working Group, for a comprehensive analysis of potentials and challenges of various alignments in the Tucson area.

And finally, I would like to point out the injustice of placing major transmission lines through areas which will receive no benefit from them, while bypassing the areas that would consume the power. The main beneficiaries of power from this project would be the urban growth centers of the Southwest, including Tucson and Phoenix. A route for a project that mainly benefits urban growth centers must follow established corridors that connect these centers. It must NOT fragment our few remaining intact ecological systems, such as the Middle and Lower San Pedro watersheds and the Galiuro Mountains.

I urge the BLM to consider these issues of justice, and to correct the inadequacies of the current scoping activities by requiring SunZia to coordinate with relevant parties along the corridors that already connect the urban centers.

Thank you,

David Omick

6146 N Canyon Rd

Benson AZ 85602

June 10, 2010

*Delivered via electronic mail (*NMSunZiaProject@blm.gov)

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115

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Thank you,
David Omick
6146 N Canyon Rd
Benson AZ 85602

From: a pazzmore
To: NMSunZiaProject@blm.gov
Subject: Oppose the San Pedro River Valley Route of the Sunzia Project
Date: 05/02/2010 11:22 PM

I oppose the current SunZia plan in the San Pedro River area.

Thank You,
Aaron Passmore
Tucson, AZ

- The San Pedro River Valley supports the last major free flowing river in the desert southwest, the main migratory corridor for neo-tropical birds in the West, and the greatest diversity of mammal species in North America. The Rocky Mountains, Sierra Madres, Sonoran and Chihuahuan deserts all merge here to create the greatest biodiversity of any landlocked area in the U.S.
- The Middle San Pedro River Valley, adjacent ranges and areas is one of the largest intact landscapes in the lower 48 states. Landscape fragmentation – which this power corridor would effect – has been shown to negatively impact wildlife and ecosystem sustainability.
- Service roads for construction and maintenance will create significant erosion, impacting water quality and soil integrity
- Canyons crossed by the power corridor are major habitat for native fish, the most endangered of all classes of animals in the southwest, which will be adversely impacted by sedimentation and other water quality issues.
- The San Pedro River Valley is home to many raptors, including relatively rare ones such as Black Hawks, Grey Hawks, Zone-tails and Peregrine Falcons. Transmission lines have been demonstrated to negatively impact raptors, and mitigation is both expensive and uncertain.
- Aravaipa Canyon, a major tributary to the San Pedro, is also very undeveloped and remote, provides critical habitat for several species of endangered native fish and birds, and is located among several designated wilderness areas and national forests.
- Service roads will encourage remote ATV access and subsequent abuses of both the vegetation and the considerable cultural and historic resources found in the valley.
- Wildfire management and proscribed burns will be determined by need to protect line integrity, rather than the health of the ecosystem.
- The power corridor will be a visual scar in a relatively pristine landscape, negatively impacting property values and eco-tourism.
- Should the power corridor be approved it would become an accepted avenue for future infrastructure and development that would ultimately entail the demise of the critical environmental attributes of the San Pedro River Valley.

- The few remaining undeveloped and highly functional landscapes in our arid lands should not be used for infrastructure corridors.
- Increased potential for human-caused wildfires
- Access roads would provide opportunities for illegal dumping of rubbish
- Local generation (rooftop, brownfields) of alternative energy should be encouraged near the point of use, rather than long-distance transmission.
- What corridors are ultimately deemed necessary should be placed along already established rail and highway transportation corridors

From: Linda Peck
To: NMSunZiaProject@blm.gov
Cc: William McGuire
Subject: SunZia Transmission Lines in Aravaipa Valley
Date: 06/09/2010 10:02 PM
Attachments: SunZia Objection Letter_McGuire.pdf

Mr. Garcia,

Please find attached a letter from my spouse, William McGuire, regarding proposed location of transmission lines in Aravaipa Valley. As property owners in Aravaipa Canyon we are deeply concerned about the environmental impact should this come to pass.

Thank you for the opportunity to comment on the issue.

Best regards,

Linda Peck
William McGuire
25250 N. 92nd St.
Scottsdale, AZ 85255

June 9, 2010

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115
Santa Fe, NM 87502-0115

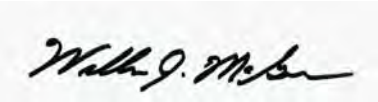
To Whom It May Concern:

I am writing to oppose the SunZia's proposed transmission route through Arizona's wilderness areas, including Aravaipa Canyon and the San Pedro River area. On a broad scale, our state's wilderness areas are too limited and fragile to support the proposed project. On a narrower view, as a property owner deep in Aravaipa Canyon I do not want to see a very special part of the world sacrificed while there are other viable options available.

The SunZia project is a good idea, recognizing the potential of renewable energy. But delivering it at the expense of fragile environmental areas is a mistake. Routes through Tucson, using existing infrastructure corridors, would have far less impact on the state's environment. I prefer this option, and suggest that SunZia work with local power companies to route the transmission lines with as little disruption to the environment as possible.

If SunZia continues with its plans to construct transmission lines through Aravaipa Canyon or other Arizona wilderness areas, I will take whatever actions available to fight that action.

Thank you.



William J. McGuire
25250 N. 92nd Street
Scottsdale, AZ 85255

From: Tom Wagner
To: NMSunZiaProject@blm.gov
Subject: Location of the high power line
Date: 06/02/2010 02:37 PM

I must speak out that any alignment other than the Tucson alignment, is err-responsible when considering the impact on un-developed areas of the state. We will be destroying huge areas of landscape that will never recover – all for the sake of California and their required energy numbers. No benefit to Arizona, other than having to put up with this eyesore from now on.

Make California cover the cost for ROW thru the established Tucson route.

Tom K. Wagner Architect, A.I.A., LEED-AP
office 602-952-1989 | cell 602-228-2003 | tom@wagnerpartnership.com
4140 N. 44th Street #102 | Phoenix, Az 85018

THE WAGNER PARTNERSHIP
ARCHITECTURE • INTERIORS • PROJECT MANAGEMENT

From: Clifford Pelton
To: NMSunZiaProject@blm.gov
Subject: Routing of the SunZia lines through NM
Date: 06/05/2010 11:47 AM

I am writing to reinforce the comments of the Friends of the Bosque del Apache. Their comments, as stated below are not only valid, but readily supported by numerous disciplines. I am a former professional engineer that worked for years overseeing the design and construction of highway projects, mostly Interstates, in Vermont, New York, and Puerto Rico. And I was no longer a kid when the NEPA was enacted in 1969. It took a bit of time for we engineers to realize that, in fact, our neat and cost efficient designs had been messing up a lot of beautiful countryside and the lives of farmers and displaced ghetto dwellers too. New Mexico is seeing population growth because we have, relatively speaking, lots of unspoiled landscape and flocks and herds of wild birds and animals. And we do have a lot of open space where engineering projects can be sited without significant damage to the existing environment, and that will have the net effect of improving quality of life. I am a firm believer in alternative energy sources, having installed a PV system over a year ago, and wish SunZia success, but hope they will consider the over all long range consequences of their proposals, and heed the concerns expressed below.

Clifford L. Pelton, PE NY&VT (ret'd)
575-382-2173
5725 Robledo Rd.
Las Cruces, NM 88012

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of “M” Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although “green” power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and

viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this projec

From: Nancy Ranney
To: NMSunZiaProject@blm.gov
Subject: Letter in support of Proposed Extension of SunZia Transimission Line
Date: 06/05/2010 03:24 PM

To Whom it May Concern:

I am a landowner in the Corona, New Mexico area and wish to record my support of the
proposed new study expansion area for the SunZia Southwest Transmission line in New
Mexico and Arizona.

i believe that the potential economic benefits of energy development and its transmission
to Arizona, will be substantial for the County and the State, as well as for local landowners
and their communities.

Thank you for your consideration.
Sincerely,
Nancy Ranney
Ranney Ranch
Corona, New Mexico
88318

From: Betty Wagner
To: NMSunZiaProject@blm.gov
Subject: BLM / SunZia Route Comments June 2010
Date: 06/08/2010 08:06 AM

Attention: Mr. Adrian Garcia
Bureau of Land Management
New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115
Santa Fe, NM 87502-0115

COMMENTS

We, the Aravaipa Property Owners Association (APOA), are writing you to express our strong and unanimous opposition to the Aravaipa transmission line route proposed by the SunZia Southwest Transmission Project. This route cuts through more than 20 miles of the Aravaipa Canyon watershed, crosses Aravaipa Creek on the east side of the Canyon, and bisects the Aravaipa Canyon Wilderness administered by the Bureau of Land Management to the north and Galiuro Wilderness in the Coronado National Forest to the south.

Aravaipa Creek is a perennial creek in the Sonoran Desert that flows through the wilderness and the area in which the APOA members live. Aravaipa Creek is home to two federally threatened fish species, the spikedace and the loach minnow, and is the only watercourse in Arizona still to have all its' native fish species. Other species of special concern in the creek and nearby are four other fishes (longfin dace, roundtail chub, desert sucker, and Sonoran sucker), three bird species (yellow-billed cuckoo, gray hawk, and black hawk), the desert tortoise, and the desert bighorn sheep. In other words, Aravaipa Canyon and its watershed constitute a unique environment and an ecologically sensitive area. In fact, the Aravaipa Canyon Wilderness has been called the "crown jewel" of the wilderness areas administrated by BLM.

Protection of the special aspects of this environment is a very high priority for APOA and the proposed transmission line route would threaten the Aravaipa Canyon Wilderness in a number of ways.

(1) The proposed route would block the road-less wildlife migration corridor between the Aravaipa Canyon Wilderness and the Galiuro Wilderness in the Coronado National Forest, one of the last of this magnitude in the southwest. The importance of this 100-mile long corridor has not been taken into account because for some unknown reason the study area stops just north of the Galiuros and does not include the road-less areas to the north. This is an essential corridor for many animals, such as desert bighorn sheep, black bears, mountain lions, and mule deer, and it connects these two ecologically pristine areas. Overall, approximately 50 miles of the proposed route would pass through or within one mile of areas determined to be environmentally sensitive, the largest number of miles in this category of all the transmission line routes, proposed or alternative.

More importantly, once the transmission lines are in place with their attendant maintenance access, they will act like a "gateway drug" to further access, first by off-road vehicles, then to more development and degradation.

(2) The proposed route would cross or closely parallel Aravaipa Creek on the east side of the wilderness and cross the Aravaipa Creek watershed for much of its length, potentially destroying and altering habitat important to native species.

(3) The proposed route includes more than 15 miles of mountainous terrain, making construction difficult, unduly expensive, environmentally degrading, and very undesirable for maintenance.

Again, we state our strong opposition to the proposed Aravaipa route, because of the great negative impact it would have on this ecologically sensitive area. As a result, we strongly urge you to remove this route from any further consideration as a route for the transmission line.

As a more environmentally conscious alternative, we support either of the proposed Tucson routes or other Tucson routes, which could be developed, were SunZia to share infrastructure corridors with Tucson Electric Power (TEP). We especially encourage you to adopt the Tucson route developed by the Cascabel Working Group. These alternatives would have the added benefit of meeting the requirements of the Federal Energy Regulatory Commission (FERC) for providing greater local access to this renewable energy rather than merely funneling it to markets outside the areas most impacted by the transmission lines.

If the preferred alternative includes either the Aravaipa or the San Pedro route, the so-called "green" aspect of the SunZia Southwest Transmission Project would appear to refer more to the color of the return to the investors rather than the essential environmental nature of the project.

ARAVAIPA PROPERTY OWNERS ASSOCIATION
c/o Betty Wagner, President
90890 East Aravaipa Road
Winkelman, AZ 85292
(betty@wagnerpartnership.com)

Organization:	**Aravaipa Property Owners Association**
Add to mailing list:	**Yes**
Withhold personal information:	**No**
Receive notification of EIS availability:	**Yes**

4140 N. 44th Street #102 | Phoenix, Az 85018

THE WAGNER PARTNERSHIP
ARCHITECTURE • INTERIORS • PROJECT MANAGEMENT

From: recordi@email.arizona.edu
To: NMSunZiaProject@blm.gov
Subject: ATTN: ADRIAN GARCIA RE: OBJECTION TO SUN ZIA PROJECT
Date: 06/10/2010 04:05 PM

Bureau of Land Management, New Mexico State Office
SunZia Southwest Transmission Project
P.O. Box 27115,
Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

Sincerely,

Ian Record
Resident, Tucson, Arizona

From: deana reed
To: nmsunziaproject@blm.gov
Cc: jsturcotte@aol.com
Subject: Adrian Garcia/ SunZia Southwest Transmission Project
Date: 06/04/2010 12:26 PM

To Whom It May Concern,

I am opposed to SunZia's proposed transmission routes through Arizona's wilderness areas that include Aravaipa and the San Pedro.

Aravaipa is the home of my ancestors. I am a Great Grand Daughter of Captain Chiquito a Pinal/San Carlos Apache whose land there has come to me and other descendants. We have recently come together to protect the already very fragile ecosystem on our land and the Canyon health as a whole.

I appreciate the conservation value of renewable energy, but delivering it at the expense of a fragile environment is irresponsible. I am told there are routes through Tuscon using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plan to construct transmission lines through Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

Deana Bullis Reed June 4Th, 2010
www.Apachestelltheirstory.com

From: Friends of the Bosque
To: NMSunZiaProject@blm.gov
Subject: Friends of the Bosque del Apache National Wildlife Refuge
Date: 06/04/2010 11:43 AM

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of “M” Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although “green” power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Leigh Ann Vradenburg
Executive Director
Friends of the Bosque del Apache NWR
P.O. Box 340
San Antonio, NM 87832
575-838-2120
www.FriendsoftheBosque.org

From: John Van't Land
To: NMSunZiaProject@blm.gov
Subject: Proposed Plans
Date: 06/07/2010 11:48 AM

My wife and I would just like to "weigh in" on the discussion ofthe NMSun Zia Project. For almost 40 years we've been visiting Bosque del Apache WLR. We are concerned that this wonderful, protected land, might be affected forever by such a project.

Unfortunately, the voices of the hundreds of thousand birds cannot be heard. If they were heard, the cry would be deafening. The proposed project would make this peaceful corridor into a man-made mechanized alley to provide energy at the expense of this pristine place.

We hope that this project can be moved to another location or at least that funds would be provided to protect this area from the impact of the project.

Please vote against the plans to put the Zia Project here.

Sincerely,

John & JoAnne Van't Land
Gallup, NM

From: Jane Utz
To: NMSunZiaProject@blm.gov
Subject: powerlines
Date: 06/04/2010 12:15 PM

Greetings from Long Island, NY.

As a photographer, and lover of all nature, I oppose powerlines that would be hazerdous to the migritory birdlife, and the beauty of Bosque del Apache. I am a winter visitor, who enjoys the beauty of the Socorro region. Please do your best to bypass the Bosque, to limit harm to the wildlife, and to protect the Rio Grande. There are so few natural areas left for our native birds and mammals. We, the public, are watching; and we care!

Sincerely,
Jane Utz
2705 Laurel Ave
Southold, NY 11971

From: jsturcotte@aol.com
To: NMSunZiaProject@blm.gov
Subject: Comment on SunZia - hard copy will be mailed
Date: 06/02/2010 04:38 PM

Dear Mr. Garcia:

My husband and I are landowners in Aravaipa Canyon, and we hope to retire there. As such, I am gravely concerned about SunZia's proposed high power transmission routes through our beautiful area. It strikes me as immensely hypocritical that an energy project devoted to delivering "green" energy would willingly efface millions of acres of wilderness. But then, these are Arizona wilderness areas – meanwhile, those who stand to benefit most from the project are private investors, along with residents of California and New Mexico. Why should they care?

For the life of me, I cannot see how the SunZia project (in any of its iterations) will benefit Arizonans in a way that fairly compensates them for this environmental eyesore – no matter where it is built. But most certainly, the destruction of our valuable wilderness areas is a high price to pay, regardless of whatever benefits might befall our state.

I strongly suspect that the SunZia project is being driven by politics and money, and that it does not necessarily have environmental concern as its core value. If it did, I would think that greater consideration would be given to routes along existing corridors - even if they are more costly. Instead, my impression is that SunZia has been less than eager to collaborate with utility companies such as TEP, for reasons I do not fully understand.

In closing, let me say that my delay in writing is due to my disbelief that any sane person would actually allow transmission lines to be built through the Aravaipa or any other wilderness area. Do be forewarned that if SunZia decides to go forward with such a plan, I will take whatever steps I can to oppose it.

Sincerely,
Jane S. Turcotte
10945 N. Gila Rd.
Tucson, Arizona 85742

From: Diane Tuck
To: NMSunZiaProject@blm.gov; cascabel4me@yahoo.com
Subject: San Pedro Valley, not the place for your power lines
Date: 06/03/2010 09:29 PM

Please consider the following points in determining the location of your power lines. We live in Redington, west of the river. We are 3rd and 4th generation landowners here. The San Pedro Valley is a rarity as is Aravaipa. Surely you must see the folly of building the Sun Zia project in such a rare and special place. We are certain that it would be economically more feasible to build your lines along existing highways and railroad lines. Do not destroy what little we have left. Please consider the following points and take your project to a more suitable location.
Sincerely, Gary & Diane Tuck

14125 N San Pedro River Rd
Benson, AZ 85602

- The San Pedro River Valley supports the last major free flowing river in the desert southwest, the main migratory corridor for neo-tropical birds in the West, and the greatest diversity of mammal species in North America. The Rocky Mountains, Sierra Madres, Sonoran and Chihuahuan deserts all merge here to create the greatest biodiversity of any landlocked area in the U.S.
- The Middle San Pedro River Valley, adjacent ranges and areas is one of the largest intact landscapes in the lower 48 states. Landscape fragmentation – which this power corridor would effect – has been shown to negatively impact wildlife and ecosystem sustainability.
- **Service roads for construction and maintenance will create significant erosion, impacting water quality and soil integrity**
- Canyons crossed by the power corridor are major habitat for native fish, the most endangered of all classes of animals in the southwest, which will be adversely impacted by sedimentation and other water quality issues.
- The San Pedro River Valley is home to many raptors, including relatively rare ones such as Black Hawks, Grey Hawks, Zone-tails and Peregrine Falcons. **Transmission lines have been demonstrated to negatively impact raptors, and mitigation is both expensive and uncertain.**
- Aravaipa Canyon, a major tributary to the San Pedro, is also very undeveloped and remote, provides critical habitat for several species of endangered native fish and birds, and is located among several designated wilderness areas and national forests.
- **Service roads will encourage remote ATV access and subsequent abuses of both the vegetation and the considerable cultural and historic resources found in the valley.**
- Wildfire management and proscribed burns will be determined by need to protect line integrity, rather than the health of the ecosystem.
- The power corridor will be **a visual scar in a relatively pristine landscape, negatively impacting property values and eco-tourism.**
- Should the power corridor be approved it would become an accepted avenue for future infrastructure and development that would ultimately entail the demise of the critical environmental attributes of the San Pedro River Valley.

- **The few remaining undeveloped and highly functional landscapes in our arid lands should not be used for infrastructure corridors.**
- Increased potential for human-caused wildfires
- Access roads would provide opportunities for illegal dumping of rubbish
- Local generation (rooftop, brownfields) of alternative energy should be encouraged near the point of use, rather than long-distance transmission.
- What corridors are ultimately deemed necessary should be placed along already established rail and highway transportation corridors.

From: Maria Troutner
To: NMSunZiaProject@blm.gov
Subject: Stay out of San Pedro River Valley
Date: 06/10/2010 09:33 AM

To: BLM

It makes no sense to destroy a near pristine area of the Southwest in order to transport "dirty energy" to the west coast. Dirty energy because, as stated by SunZia people, renewable energy is not yet available coming out of New Mexico. Thus, it's business as usual. With the proposed plans for building transmission lines through the San Pedro River Valley, Sun Zia is taking advantage of utilizing cheap Public Lands in order to make an enormous profit. This is not for the benefit of the public but for the pockets of wealthy investors.

It would make more sense if energy were generated closer to where it will be utilized. How about every home and business be equipped with solar panels on their roof? This would generate the energy needed, it would save our environment; it would create jobs for Americans building solar panels and installing them; and our unique San Pedro River Valley would be saved from destruction for generations to come. The residents in the San Pedro River valley pay the price by having their environment destroyed while SunZia is the recipient of a giant corporate-money-making project. Isn't this similar to "big oil" destroying the Gulf of Mexico?

It behooves BLM to think in terms of the negative impact building miles and miles of transmission lines through the San Pedro River Valley would have **forever** versus placing those lines through an area already degraded and designated for transporting energy.

One can only hope there are people in government agencies, such as BLM, that value "quality of life" before profit. Our country deserves no less!

Respectfully,

Maria and Gene Troutner
6590 N. Cascabel Rd.
Benson, AZ 85602

520-212-5288

From: Steve Traudt
To: NMSunZiaProject@blm.gov
Subject: Sun Zia Comment
Date: 06/04/2010 08:29 PM

Hello. I'll keep it short. I have been to Bosque del Apache 12 times in the last 10 years. It is an amazing, world-class resource. Please do not jeopardize this very special place.

Thank you.

Steve.

Steve Traudt

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From: Kent Thornell
To: NMSunZiaProject@blm.gov
Cc: Evaline Auerbach; Kent Thornell; Margaret Guyton; Dick Kirkpatrick; Hector Lovemore; Historical Society Oracle; John Rendall; June Rettig; Cinnamon Scheik; Arthur Smith; Chuck/Judy Sternberg/Stewart
Subject: Objection letter to Sunzia Project
Date: 06/06/2010 09:51 PM
Attachments: SunZia obj ltr.PDF

Dear Mr. Adrian Garcia;

Please see my signed letter attached.

Sincerely, Kent Thornell

Kent Thornell, PO box 442, Oracle AZ 85623

Bureau of Land Management, New Mexico State Office

SunZia Southwest Transmission Project

P.O. Box 27115,

Santa Fe, NM 87502-0115

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed transmission routes through Arizona's wilderness areas, including the Aravaipa and the San Pedro. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. The SunZia plan appears to have very little benefit for Arizona residents: only 14% of the total energy transmission rights from these lines will serve our state. Meanwhile, we will be the ones who bear the environmental consequences of this project, while private investors and residents of other states are the ones who will profit most.

While I appreciate the conservation value of renewable energy, delivering it at the expense of a fragile environment is irresponsible. There are routes through Tucson using existing infrastructure corridors which would have far less impact on the environment. If this project is to go forward, the obvious solution is for SunZia to work with local Arizona power companies and route the transmission lines accordingly, with as little disruption to the environment as possible.

If SunZia decides to push forward with its plans to construct transmission lines through the Aravaipa (or any other Arizona wilderness area), I will take whatever steps I can to fight it.

6/6/10

Signature & Date

Kent T Thornell Oracle, AZ

Name & City

From: Ernest Thompson
To: nmsunziaproject@blm.gov
Subject: Sunzia project
Date: 05/07/2010 09:04 AM

Adrian I was recently informed that a meeting in Socorro NM was held on April 27th 2010 to discuss the Sunzia project proposed routs. I was not notified of this meeting and either were most of my other neighbors. My understanding is one of the proposed routes is on the south edge of my ranch and this will defiantly effect my properties view shed and also the value. One of my neighbors John Sias talked with you and said you might becoming out to look at the area and discuss the proposed easements. I would like to be included and also contacted and kept up to date on any information you have on this project. Thank you, Ernest Thompson 575-423-3313 mailing address: HC 66 Box 613 Mountainair, NM 87036

From: Richard Tecube
To: NMSunZiaProject@blm.gov
Cc: Leigh Ann Vradenburg
Subject: SunZia Southwest Transmission Project in Arizona and New Mexico.
Date: 06/08/2010 03:45 PM

Attention: Andy Garcia

It is my understanding that the Bureau of Land Management is yet to conduct an environmental impact study but has done an evaluation and came up with additional transmission routes between Socorro and Belen, New Mexico for the project. Of concern is the integrity and maintenance of the Bosque del Apache Wildlife Refuge and its environs for its flora, fauna, and aesthetic values. Since its establishment the Bosque del Apache National Wildlife Refuge has had success in the conservation, protection, and maintenance of for wildlife and plant species not only native to New Mexico but also for other areas connected to migratory birds for winter nesting and migration further south. There has been much effort and resources expended with continued support in maintaining and improving the wildlife refuge area. The natural environment and biological habitats must not be further endangered.

The environmental and ecological impacts to the area must be considered and addressed. A transmission line between Socorro and Belen will pose a hazard to the daily flight patterns of sandhill cranes, snow geese, and other water fowl. It will also pose a migratory pathway hazard for other birds. The riverine environment of the refuge along the Rio Grande River has led to an increased biological diversity due to a landscape that has been managed for minimal disturbance to allow for a biodiverse habitat. As an example, elk, deer, and turkey are with their own migratory patterns now becoming common to the bosque. A new route must be provided to relieve concerns regarding wildlife and its habitat.

The environmental and ecological considerations also include the scenic and aesthetic values of the Middle Rio Grande Valley. The valley landscape with its unique vistas and views of the area is presently unmarred with its mountains, hills, canyons, and river all with its diverse vegetation. The area includes several vegetative zones making it a unique area. The uniqueness of the area must be maintained.

The refuge and scenic values now provide economic values for tourism, recreation, and education for the rural communities in the area through the planned management of the wildlife refuge. Birdwatchers come from around the country and the world for bird watching during the periods of bird migrations and winter nesting season. These uses and its values must be maintained.

SunZia must demonstrate its commitment to minimal environmental impact and consider more suitable routes to the south and east of the Bosque del Apache National Wildlife Refuge.

I thank you for this opportunity to comment on the preservation of the Bosque del Apache.

Richard Tecube
rcc.tecube@comcast.net

From: Jordan Feld
To: NMSunZiaProject@blm.gov; Adrian_Garcia@blm.gov
Cc: Jill Merrick
Subject: SunZia Transmission Line Project EIS Public Agency Comment
Date: 05/25/2010 02:10 PM
Attachments: Tucson Airport Authority_10k foot buffer areas.pdf

---

May 25, 2010

Subject: SunZia Transmission Line Project EIS Public Agency Comment

Mr. Garcia,

The Tucson Airport Authority (TAA) is a nonprofit organization created to manage Tucson International Airport (TUS) and Ryan Airfield (RYN). Both of these airports will be significantly negatively impacted by the subject project.

The project land use map (dated April 28, 2010) depicts several "alternative routes subject to feasibility study" within close proximity to one or both airports. The height of these proposed utility structures and their possible location near Tucson International Airport (a medium-sized hub airport) and Ryan Airfield (the largest general aviation airport in southern Arizona) would have a detrimental effect on TAA's ability to ensure safe aviation activity in the region. The compromised airspace resulting from the subject project would have a potentially devastating effect on the regional economy and quality of life.

TAA is responsible for ensuring Federal Regulation 49 CFR Part 77 and FAA Terminal Instrument Procedure requirements are maintained. These regulations are intended to protect the long-term viability of safe aviation activity in the region by standardizing minimum standards for unobstructed approach and departure surfaces. Although there are numerous standards applicable to the subject project, the required 10,000-foot conical surface surrounding both airports required by Part 77 captures the majority of the design criteria and obstruction prevention goals as they relate to the subject.

In the absence of more detailed information on specific structure heights, elevations of project routes, or detailed alignments of project routes; no route should be located within this 10,000-foot buffer area (as measured from the runway ends of each airport). The attached map shows this area in geographical detail.

TAA opposes the location of any project route within 10,000 feet of an existing or planned TUS or RYN runway end. TAA's opposition may be reviewed, and potentially modified, if additional information is provided as discussed above.

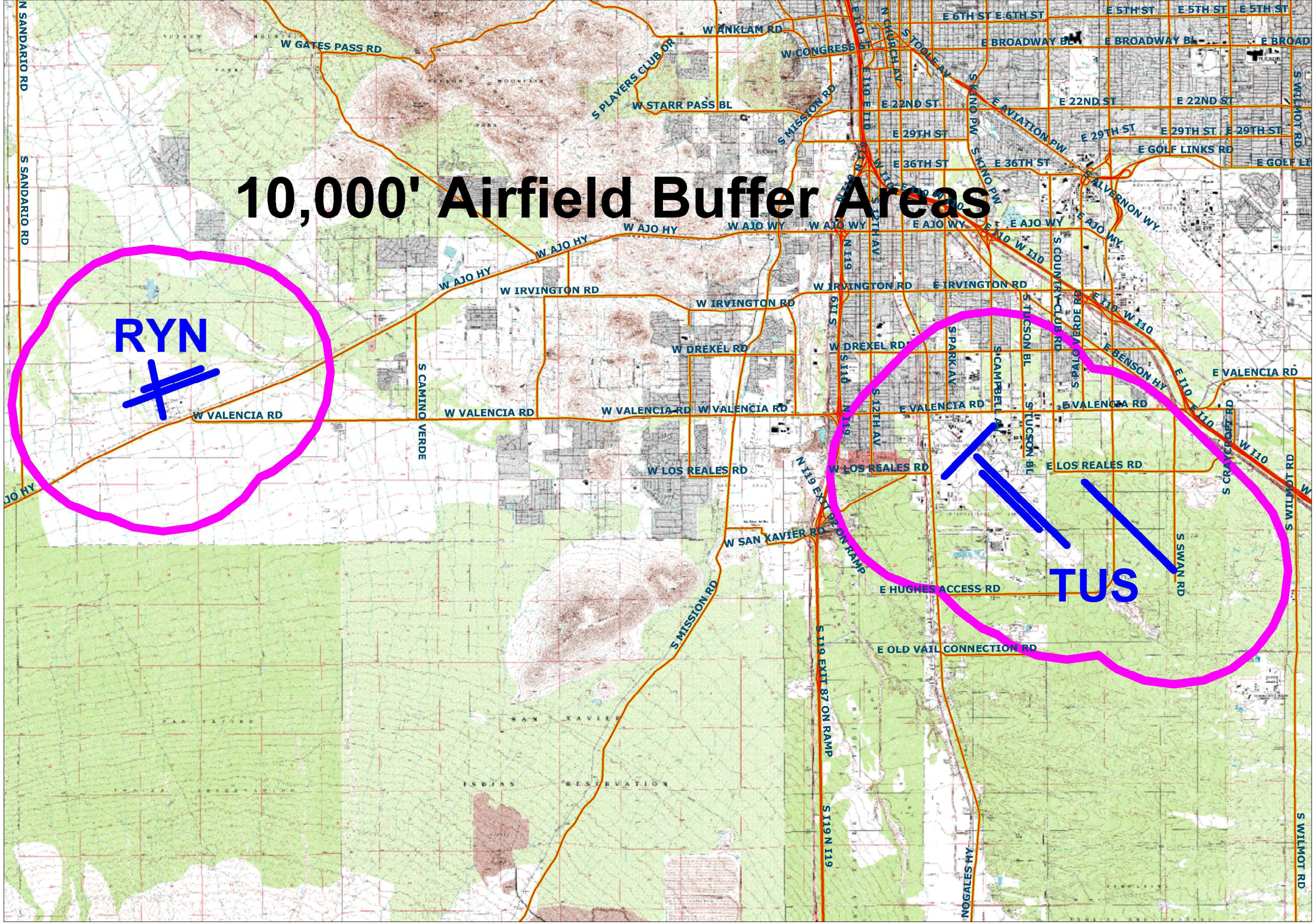
Thank you for this opportunity to review and comment on the proposed project. Please do not hesitate to contact me if you have any questions or comments regarding this letter.

Respectfully,

Jordan D. Feld, CM, AICP
Director of Planning

Tucson Airport Authority
7005 S. Plumer Ave.
Tucson, AZ 85756
jfeld@tucsonairport.org
www.tucsonairport.org
(520) 573-5115 office
(520) 573-8006 fax

10,000' Airfield Buffer Areas



SCALE 1 : 96,733

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MILES

N

From: Jordan Feld
To: NMSunZiaProject@blm.gov; Adrian_Garcia@blm.gov
Cc: Jill Merrick; Scott Driver
Subject: SunZia Project: Tucson International Airport and Ryan Airfield: Airspace Impacts
Date: 04/30/2010 11:46 AM

Mr. Garcia,

I was just made aware that a scoping meeting was held yesterday for the SunZia Project; I understand the project includes the construction of multiple 500kv poles in the vicinity of Tucson International Airport and Ryan Airfield. Im concerned that federal aviation law (ie Part 77 surfaces) has not been considered.

Please be advised that local airport zoning is less restrictive than federal law and therefore is not a viable proxy for understanding and/or addressing federal airspace standards. Moreover, airport management and airspace protection is the responsibility of Tucson Airport Authority. TAA has no organizational relationship to either Pima County or City of Tucson; TAA should be considered an individual public stakeholder in your scoping process and included in all relevant distributions and required notices.

With that, I strongly encourage you to contact me as soon as possible to discuss the proposal in relation to our airspace and associated impacts.

Thank you in advance for your consideration of the regional importance of the subject airports and the need to ensure their long-term viability.

Respectfully,

Jordan D. Feld, CM, AICP
Director of Planning
Tucson Airport Authority
7005 S. Plumer Ave.
Tucson, AZ 85756
jfeld@tucsonairport.org
www.tucsonairport.org
(520) 573-5115 office
(520) 573-8006 fax

From: Mccord, Jim
To: NMSunZiaProject@blm.gov
Subject: additional link on sunzia project
Date: 06/10/2010 07:58 AM
Attachments: SunZiaLetterMcCord.pdf

Dear Mr. Garcia.

Please see link below for more information our work on our land conservation in the study area:

http://www.rgalt.org/pdfs/RGALT%20Summer07.pdf

I went ahead and updated our letter with this link, please use attached letter for the EIS administrative record.

Jim

.....

Dr. Jim McCord, P.E.
Associate Hydrogeologist and Water Resource Engineer
Water Resources Technical Director
New Mexico - Texas

AMEC Earth & Environmental
115 West Abeyta Street, Suite A
Socorro, New Mexico 87801 USA

phone: 575-835-2569
fax: 575-835-2609
jim.mccord@amec.com
www.amec.com

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June 10, 2010

Bureau of Land Management - NM SunZia Transmission
attn. Adrian Garcia
PO Box 27115
Santa Fe, New Mexico 87502

Dear Mr. Garcia:

We are writing to provide comments on the route alternatives for the SunZia the renewable energy powerline project. We live in Polvadera in the middle Rio Grande Valley, and are founding members of Rio Grande Agricultural Land Trust (RGALT), an organization dedicated to preserving irrigated farmland, open space, scenic vistas, and migratory waterfowl habitat in the Rio Grande Valley. Having lived here since 1980, we are very familiar with the various powerline route alternatives. Based on our knowledge of the area, and our land and wildlife conservation work, we strongly recommend that you select the original (2008) "Proposed Route" across New Mexico as "Preferred Alternative" for the eastern (New Mexico) portion of the powerline. We have reviewed the route alternatives map and specifically recommend Route numbers A181 and A300 (or alternately, A250) as the Proposed Route for the SunZia DEIS:

- The route cuts diagonally west-southwest from the new sub-station north of Carrizozo, past the northwest corner of White Sands Missile Range (WSMR) property just south of Highway 380, where it turns immediately south, following the WSMR boundary to the point where the line must head west in order to cross the Rio Grande just south of Arrey, NM.

There are several reasons that this route makes the most sense:

1. It passes through unpopulated federal lands and avoids populated agricultural and scenic areas.
2. It avoids all National Wildlife Refuges, Wilderness Study Areas, existing Wilderness Areas, and Areas of Critical Environmental Concern. The study expansion in the middle Rio Grande Valley north of Socorro (from April 2010) makes no sense, as it considers news routes that include more private lands and rural population centers, and more of the Rio Grande waterfowl migratory flyway.
3. It avoids the low-altitude migratory avian flyway along the Rio Grande. The Rio Grande Flyway is a critical migratory corridor for greater Sandhill Cranes and Snowgeese (among other species) that stretches from northern Canada (for the Snowgeese) and Grey Lake Idaho (for Sandhill Cranes) southward to Bosque del Apache NWR south of Socorro, and this waterfowl population has been recognized to be negatively impacted in recent years by development and human encroachment. In fact, RGALT has been working since 2004 with the USFWS Intermountain West Joint Venture group using North American Wetlands Conservation Act (NAWCA[1]) grant funds to preserve habitat, including working farms in the middle Rio Grande Valley down to Bosque del Apache NWR. Constructing a powerline across this

[1] http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm

corridor would create yet another threat to the Rio Grande Flyway migrants.

4. It avoids private Conservation Easements in the middle Rio Grande Valley north of Bosque del Apache. In addition to working on habitat preservation in the middle Rio Grande Valley as described above, RGALT has been working with private landowners, the USDA Farmland Protection Program[2], and the State of New Mexico[3] to preserve critical farmlands in this area. All of the alternative routes that cross the Rio Grande north of Bosque del Apache will negatively impact these government – private collaborations to preserve farmland and habitat.
5. This eastern-end route is shortest, causing the least land disturbance.

It is our understanding that the military is ready to accept the proximity of the powerline following outside theWSMR west boundary. Thus, let us utilize this opportunity and option to put the powerline in an area that causes the least disturbance to private land and critical wildlife habitat and flyways, and select the Route numbers A181 and A300 (or alternately, A250) as the Proposed Route for the SunZia powerline.

Sincerely,

Jim McCord,
Board Secretary, Rio Grande Agricultural Land Trust

Cecilia Rosacker McCord
Executive Director, Rio Grande Agricultural Land Trust

[2] http://www.nrcs.usda.gov/programs/frpp/

[3] http://www.rgalt.org/pdfs/RGALT%20Summer07.pdf

From: Mccord, Jim
To: NMSunZiaProject@blm.gov
Subject: SunZia Project Comment
Date: 06/10/2010 07:51 AM
Attachments: SunZiaLetterMcCord.pdf

Dear Mr. Garcia,
Attached please find a letter from my wife and I commenting on the proposed powerline corridor. Please feel free to call or email if you have any questions. Thank you for your consideration of our comments.
Jim
.....

Dr. Jim McCord, P.E.
Associate Hydrogeologist and Water Resource Engineer
Water Resources Technical Director
New Mexico - Texas

AMEC Earth & Environmental
115 West Abeyta Street, Suite A
Socorro, New Mexico 87801 USA

phone: 575-835-2569
mobile: 505-450-3699
fax: 575-835-2609
jim.mccord@amec.com
www.amec.com

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June 10, 2010

Bureau of Land Management - NM SunZia Transmission
attn. Adrian Garcia
PO Box 27115
Santa Fe, New Mexico 87502

Dear Mr. Garcia:

We are writing to provide comments on the route alternatives for the SunZia the renewable energy powerline project. We live in Polvadera in the middle Rio Grande Valley, and are founding members of Rio Grande Agricultural Land Trust (RGALT), an organization dedicated to preserving irrigated farmland, open space, scenic vistas, and migratory waterfowl habitat in the Rio Grande Valley. Having lived here since 1980, we are very familiar with the various powerline route alternatives. Based on our knowledge of the area, and our land and wildlife conservation work, we strongly recommend that you select the original (2008) "Proposed Route" across New Mexico as "Preferred Alternative" for the eastern (New Mexico) portion of the powerline. We have reviewed the route alternatives map and specifically recommend Route numbers A181 and A300 (or alternately, A250) as the Proposed Route for the SunZia DEIS:

- The route cuts diagonally west-southwest from the new sub-station north of Carrizozo, past the northwest corner of White Sands Missile Range (WSMR) property just south of Highway 380, where it turns immediately south, following the WSMR boundary to the point where the line must head west in order to cross the Rio Grande just south of Arrey, NM.

There are several reasons that this route makes the most sense:

1. It passes through unpopulated federal lands and avoids populated agricultural and scenic areas.
2. It avoids all National Wildlife Refuges, Wilderness Study Areas, existing Wilderness Areas, and Areas of Critical Environmental Concern. The study expansion in the middle Rio Grande Valley north of Socorro (from April 2010) makes no sense, as it considers news routes that include more private lands and rural population centers, and more of the Rio Grande waterfowl migratory flyway.
3. It avoids the low-altitude migratory avian flyway along the Rio Grande. The Rio Grande Flyway is a critical migratory corridor for greater Sandhill Cranes and Snowgeese (among other species) that stretches from northern Canada (for the Snowgeese) and Grey Lake Idaho (for Sandhill Cranes) southward to Bosque del Apache NWR south of Socorro, and this waterfowl population has been recognized to be negatively impacted in recent years by development and human encroachment. In fact, RGALT has been working since 2004 with the USFWS Intermountain West Joint Venture group using North American Wetlands Conservation Act (NAWCA[1]) grant funds to preserve habitat, including working farms in the middle Rio Grande Valley down to Bosque del Apache NWR. Constructing a powerline across this

[1] http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm

corridor would create yet another threat to the Rio Grande Flyway migrants.

4. It avoids private Conservation Easements in the middle Rio Grande Valley north of Bosque del Apache. In addition to working on habitat preservation in the middle Rio Grande Valley as described above, RGALT has been working with private landowners, the USDA Farmland Protection Program[2], and the State of New Mexico to preserve critical farmlands in this area. All of the alternative routes that cross the Rio Grande north of Bosque del Apache will negatively impact these government – private collaborations to preserve farmland and habitat.
5. This eastern-end route is shortest, causing the least land disturbance.

It is our understanding that the military is ready to accept the proximity of the powerline following outside theWSMR west boundary. Thus, let us utilize this opportunity and option to put the powerline in an area that causes the least disturbance to private land and critical wildlife habitat and flyways, and select the Route numbers A181 and A300 (or alternately, A250) as the Proposed Route for the SunZia powerline.

Sincerely,

Jim McCord,
Board Secretary, Rio Grande Agricultural Land Trust

Cecilia Rosacker McCord
Executive Director, Rio Grande Agricultural Land Trust

[2] http://www.nrcs.usda.gov/programs/frpp/

From: Patrick Sylvester
To: NMSunZiaProject@blm.gov
Subject: SunZia Powerline Proposal
Date: 06/04/2010 09:23 AM

---

4 June 2010

To: NMSunZiaProject@blm.gov

BLM New Mexico State Office

SunZia Southwest Transmission Project

P>O> Box 27115

Santa Fe , NM 85702

Concerning the proposed route for SunZia's powerline across the northern ends of Socorro and Polvadera, I strongly urge you to reconsider the corridor proposed in SunZia's original 2008 filing, which follows White Sand's western fence line. I agree with the Fish and Wildlife Service that this western boundary route is the most reasonable in that it protects wildlife along the Rio Grande flyway and has the least impact on our communities. As pointed out by Kathryn Albrecht in her column in the May 29 edition of the El Defensor Chieftain, it alone avoids all Wildlife Refuges, Wilderness Areas, WSAs and BLM areas of critical environmental concern.

Thank you for your attention to this vital matter.

Sincerely yours,

Patrick Sylvester

163 Alamillo Road

San Acacia , NM 87831

From: lazywolf
To: NMSunZiaProject@blm.gov
Subject:
Date: 05/18/2010 04:54 AM

Hi,

Not everyone in Cascabel is against progress. We (the Robinson family) have lived here for going on eighteen years, and we approve of the power line. We think that it is kind of silly to site environmental reasons. Granted, there may be some aesthetic issues, but some sacrifices are sometimes necessary for our overall progress.

Thank You,

Paul, Cathi, and Cord Robinson
5310 N Cascabel Rd
Benson, Az 85602

From: saisranch
To: NMSunZiaProject@blm.gov
Subject: SunZia Project comment period
Date: 06/01/2010 02:24 PM
Attachments: SunZia Project.wps

Adrian,
Please find enclosed the request for an extension of comments on the SunZia Line. Also there is a possibility that the County Commissioners of Socorro County via the manager will be requesting the same.
Thanks John Sais

John R. Sais
HC66 Boc 604
Mountainair, New Mexico
87036
575 - 423 -3218

Adrian Garcia
Project Manager
SunZia Project
BLM NM State Office
PO Box 27115
Santa Fe NM

Adrian Garcia:

The local owners and land lease holders of the Rayo Community respectfully ask for a 45 day extension of time to assess the amended proposal for the SunZia transmission project. Although under NEPA only a federal register notice is required and notice in a local newspaper, no direct notice was provided to the property owners that are directly impacted.

No one in the rural areas wake up each day and check the federal register and none subscribe to the local newspaper.

It was by chance that someone discovered the notice of hearing to be held at Socorro on the 27th of April.

Not until some time after this date were the impacted landowners became aware of the implications of the two high voltage power lines passing over the properties and in some cases directly over their homes. The first time we had any detailed available maps supplied by BLM Santa FE Office that indicated the sections and townships was May 11th.

We therefore respectfully ask for an extension of time of 45 days to properly assess the impacts on our health, economics, environment, life style and customs and cultural and historical heritages..

Thank You for your consideration,

Respectfully yours,
Rayo Community residents signatures:

May 18, 2010

Page two request for extension of comment period:

The above signatures on Page 1 consist of ranches that total about 144,000 acres and are a partial list of the new proposed study route on the Northern Extension Area of White Sands Missle Range for the proposed SunZia transmission line: Below are the names of the signatures of Page 1:

Ernest Thompson
John Sais
Ramona Sais
Roland Sanchez MD
Oliver Lee
Kathy Lee
Shawn Cain
Monty Oney
Joan Donaldson
Curt Boyd
Susan Boyd

Thank You please advise of your decision;

John R Sais
575-423-3218

From: Geoff Stearns
To: NMSunZiaProject@blm.gov
Subject: Sun Zia Project Comments
Date: 06/04/2010 09:45 PM

I would like to convey my opposition to the proposed study area expansion, due to concerns regarding the wildlife.

I am an avid birder and love Bosque del Apache. I understand that the current proposed route would create hazards for the sandhill cranes and snow geese who winter there and for hundreds of thousands of migratory birds

In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option.

Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although “green” power is a concept that I endorse, siting is critical. We cannot sacrifice irreplaceable habitat or wildlife in pursuit of the new holy grail/cash cow of renewable energy.

Thank you,

Geoffrey Stearns

From: Connie Sambo
To: NMSunZiaProject@blm.gov
Subject: Protecting the Bosque
Date: 06/10/2010 09:25 PM

Please protect the wildlife at the Bosque Del Apache. We visit your lovely state 2 to 3 times a year, and the Bosque is special
to our hearts. I understand there are alternatives that would be more environmentally safe and also cost effective.
Please do not endanger what should be protected.

Thank You,
Connie and Bryan Sambo
Divide, Colorado

From:	Tom & Carlyn Jervis
To:	adrian_garcia@nm.blm.gov; nmsunziaproject@blm.gov
Cc:	Bernie & Dawn Foy; Tom Taylor; Karyn Stockdale
Subject:	Comments on SunZia Powerline Proposal
Date:	06/08/2010 09:07 AM
Attachments:	Sangre SunZia.pdf

Attached please find the comments of Sangre de Cristo Audubon Society on proposed routes for the SunZia Power line.

Please acknowledge receipt of these comments.

Thomas Jervis, Ph.D.

Sangre de Cristo Audubon Society

June 8, 2010

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Southwest Transmission Project
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

Re: Comments from Sangre de Cristo Audubon Society on the proposed SunZia transmission project

Dear Mr. Garcia,

The over 1300 members of Sangre de Cristo Audubon Society in New Mexico care deeply about birds and wildlife in New Mexico. Our member regularly travel, both individually and in Society-sponsored trips, to central and southern New Mexico to observe birds. We care deeply about the health and well-being of the many species of birds that reside and migrate through New Mexico.

We are also concerned about energy policy and the nation's dependence on non-renewable sources of energy. We fully support the development of renewable energy sources and the necessary infrastructure to fully utilize these sources in the national energy grid. However, we support that development on the condition that it is sited, designed, constructed, and operated to responsibly minimize harmful impacts on the environment. Further, we believe that the siting of transmission capacity for renewable energy sources should pass through areas which are suitable for the development of renewable energy sources. Transmission capability will attract energy development, and the siting of transmission lines should take renewable energy resources into account.

In particular, we believe that siting of energy developments should avoid impacts on birds and wildlife and include appropriate stipulations regarding wildlife and avian resources inventory, mitigation, and monitoring, including the cumulative effects of expanded development in both space and time.

The state and federal wildlife refuges and the associated managed agricultural crops along the Rio Grande, planted specifically for daily forage for wintering cranes and waterfowl, represent a significant investment in the middle Rio Grande Valley and these resources provide a critical landscape in the life cycle of many birds.

In addition to these concerns about the Rio Grande Valley itself, we note that the mountain ranges just east of the Rio Grande represent an important corridor for migrating raptors, as documented by many years of raptor counts in the mountains southeast of Albuquerque. These mountain ranges funnel northbound migrating raptors north to the Rocky Mountain front.
Our comments on the proposed SunZia Transmission Line are informed by these considerations and by the substantial body of science which demonstrates the hazards to resident and migratory birds from above-ground transmission power lines.

We are particularly concerned that the proposed crossing of the SunZia Transmission Line just north of the Bosque del Apache National Wildlife Refuge will have an undue and avoidable impact on the rich wildlife resources of the Rio Grande Valley. Any crossing of the Rio Grande will entail significant impacts to migrating bird populations and other wildlife. The route crossing at Highway 380 just north of Bosque del Apache is particularly egregious in its effect on the Rocky Mountain population of Sandhill Cranes.

We also have concerns about other possible crossing locations because of the likelihood with fatal collisions by Sandhill Cranes and other migratory birds. However we recognize that the line must cross at some point. Where the SunZia line crosses the Rio Grande, mitigation measures must be put in place that include avoidance of critical wetlands, marking of the transmission line with flight diverters or powerline markers, as well as burying the line underground where it crosses sensitive riparian areas where roosting and foraging create a high potential for collisions. BLM should require construction of underground transmission lines where proposed rights-of-way conflict with sensitive biological resources.

Because of the wildlife concerns discussed above, the Rio Grande Valley is in general not a suitable location for renewable energy development. Further, sources of renewable energy, specifically wind are much more abundant in eastern New Mexico. Thus, a transmission line to encourage and service renewable energy development that follows the Rio Grande Valley is counterproductive on its face.

We note that the Pecos River Valley is also a major flyway for migratory birds, including the Lesser Sandhill Crane. Thus a route for the line as far east as the Pecos River, through the heart of the most attractive wind energy resources in the state of New Mexico, is equally unsuitable.

These considerations suggest that a route to the east of White Sands Missile Range and the mountains parallel to the Rio Grande River, yet one west of the Pecos Valley. If there are conflicts in some of this area with military activities, the line should be buried in those areas of conflict as well.

The development of our renewable energy resources need not come in conflict with the conservation and protection of our wildlife heritage. We strongly urge that the SunZia line be designed with potential energy resources in mind, and with consideration of the substantial environmental impacts of a Rio Grande Valley route .

Thank you for the opportunity to comment on this proposal. Please keep us on mailing lists for this project.

Sincerely,

Thomas Jervis, Ph.D., Secretary
109 Daybreak
Santa Fe, NM 87507
Jervidae@cybermesa.com

From: tom stanton
Reply To: tom stanton
To: NMSunZiaProject@BLM.gov
Subject: Power lines through Polvadera, NM
Date: 06/06/2010 10:11 AM

I am writing to voice my opinion about the transmission lines that are proposed to travel through the Rio Grande

Valley through Polvadera, Lemitar and Escondida. I live at 494 NE Frontage Rd. in Polvadera, at the north end of the village.

Why not send these lines along the original route along the western boundary WSMR? There are no fly routes no Wildlife Refuges,

no WSA, Wilderness Areas or ACECs. All these reasons are enough, much less the visual impact from my back porch.

When making the decision on this Green Project to increase use of alternative energy sources in NM don't forget that one of the

purpose of Green Energy is is to help protect the envionment. Therefore make a decision that makes the least impact on not only

our refuges and wildlife areas but also the reidents of the Rio Grande Valley.

Thank you.

Thomas A Stanton

_____
PeoplePC Online
A better way to Internet
http://www.peoplepc.com

From: CHUCK SCHICK
To: NMSunZiaProject@blm.gov
Subject: Transmission lines and Windmill Ranches
Date: 06/03/2010 05:12 PM

Gentlemen:

I own approximately 20 acres in the Windmill Ranches. While I am for more transmission lines and understand that transmission is necessary to make wind power a reality in east central New Mexico, I can't believe that it is necessary for this project to pass through PRIVATE land. Given the large amount of property the government routinely mismanages, these lines should be put on the BLM land. These lines are for the public good (or at least we are told so). If its for the public good, then put it on PUBLIC land.

Thank you

Chuck Schick

Lot 91, Windmill Ranches.

From: lisespargo@aol.com
To: NMSunZiaProject@blm.gov
Subject: Proposed Power lines near Bosque Del Apache WIldlife Refuge
Date: 06/08/2010 03:30 PM

As a board member for the Friends of Bosque Del Apache I have to say, again, that the goals and plans of the Sun Zia project are totally incompatible with the mission of maintaining this unique National wildlife refuge. Bosque Del Apache is a one-of-a-kind resource and the notion that protection of this unique environment could be compromised by a single commercial entity whose business model to date has been less than transparent or forthcoming, is ludicrous. The Friends of Bosque Del Apache have provided detailed information to the Bureau of Land Management on the impact of the proposed plans and I hope you will give these comments the attention they deserve.

Lise Spargo
912 Bursum Pl.
Socorro, New Mexico 87801

From: Lorraine Schulte
To: NMSunZiaProject@blm.gov
Subject: Re: Power lines near Bosque del Apache- deadline for comment is June 10
Date: 06/05/2010 01:49 PM

I have received information about the SunZiaSouthwest project to build a power transmission corridor across the Rio Grande Valley in the vicinity of Bosque Del Apache.

This project should not be allowed to develop without a complete environmental impact study to determine the affect it would have on ruining land values, hurting our economy and endangering wildlife.

Lorraine Schulte
Las Cruces, N. M.

> ----- Original Message -----
> **From:** Friends of the Bosque
> **To:** Leigh Ann Vradenburg
> **Sent:** Friday, June 04, 2010 11:16 AM
> **Subject:** Power lines near Bosque del Apache- deadline for comment is June 10
>
> Hello Friends of Bosque Members,
>
> As many of you know, there is still a proposal to build a power transmission corridor across the Rio Grande Valley in the vicinity of Bosque del Apache. We have been fighting this for a year now, but we need your help by sending in your opposition by the **deadline of June 10** (submission details below).
>
> Our voices were heard last year, and instead of SunZia moving forward with their environmental impact study, they did an evaluation and came up with additional routes between Socorro and Belen; **HOWEVER**, they **DID NOT** remove the possibility of routes near the refuge, they **DID NOT** incorporate an underground river crossing, and, with the new route options, they **DID NOT** remove the threat to our migratory birds. The data and technical support are there for them to minimize biological and community impact, but they must hear that we are not going to let them plow through our community, ruining our land values, hurting our economy, and endangering our wildlife.
>
> **Please let them know you care!**
>
> The Friends of the Bosque are submitting the following comments:
>
> > On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National

Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Comments can be made to the BLM via the BLM Project Website at http://www.blm.gov/nm/st/en/prog/more/lands_realty.html via the project email address at NMSunZiaProject@blm.gov or in writing to the Bureau of Land Management, SunZia Transmission Line Project, P.O Box 27115, Santa Fe, NM 87502-0115. Deliveries will be accepted via courier/hand delivery to the Bureau of Land Management, SunZia Transmission Line Project, 301 Dinosaur Trail, Santa Fe, NM 87508.

Thank you!

Leigh Ann Vradenburg
Executive Director
Friends of the Bosque del Apache NWR
P.O. Box 340
San Antonio, NM 87832
575-838-2120
www.FriendsoftheBosque.org
k-p

_____ Information from ESET NOD32 Antivirus, version of virus signature database 5172 (20100604) _____

The message was checked by ESET NOD32 Antivirus.

http://www.eset.com

From: Cynthia Seyb
Reply To: Cynthia Seyb
To: NMSunZiaProject@blm.gov
Subject: Proposal to build a power transmission corridor across the Rio Grande Valley in the vicinity of Bosque del Apache
Date: 06/09/2010 03:12 PM

June 9, 2010

To Whom It May Concern:

As members of the Friends of the Bosque del Apache National Wildlife Refuge, we would like to convey our opposition to a power transmission corridor across the Rio Grande Valley in the vicinity of Bosque del Apache. The proposed study area expansion does not provide any new routes that would address our concerns regarding the wildlife of this community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds.

The Bosque del Apache National Wildlife Refuge and many others in the community believe that an eastern route preferably along the eastern boundary of White Sands is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.

We believe that SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact.

Sincerely,

Cynthia and Steve Seyb
Los Lunas, NM

From: Livvy Solomon
To: NMSUNZiaProject@blm.gov
Subject: Power Lines passing Bosque Del Apache
Date: 06/04/2010 01:58 PM

I am opposed to your proposed study area expansion of your power lines for the Bosque Del Apache area. The ecological & economic impact will be great on the wildlife and small communities nearby. Haven't we done enough damage with the oil spill? Please rethink your decision and keep the Bosque Del Apache a pristine environment. No power lines near or around the bird flight path. Please, think before you do terrible damage, that will affect wildlife forever.

Haven't we done enough to destroy our oceans...please think again.

Thank you,

Olivia Solomon
Las Cruces, NM 88011
575-522-5350

From:	Sandy Bahr
To:	NMSunZiaProject@blm.gov
Cc:	'Matt Clark'; 'Matt Skroch'; 'Randy Serraglio'; 'Carolyn Campbell'; Andy Laurenzi; david@omick.com; Paul Green; 'Chris McVie'
Subject:	Scoping Comments on SunZia Transmission
Date:	06/10/2010 10:26 PM
Attachments:	SunZia_Transmission_Scoping_06-10-2010_final.pdf

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Please use these comments instead of the ones submitted earlier this evening. The substance is identical, but one additional organization has signed on. Thank you.

Sandy Bahr
Chapter Director
Sierra Club - Grand Canyon Chapter
202 E. McDowell Rd, Suite 277
Phoenix, AZ 85004
Phone (602) 253-8633
Fax (602) 258-6533
sandy.bahr@sierraclub.org
arizona.sierraclub.org

We're on Facebook.

Do something wikied! Check out our *Canyon Echo* wiki.

June 10, 2010

Adrian Garcia, Project Manager
Bureau of Land Management
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115
Via electronic mail to NMSunZiaProject@blm.gov

Re: Scoping Comments on Proposed SunZia Transmission Project

Dear Mr. Garcia:

We are submitting these comments on the proposed SunZia Transmission Project on behalf of the Sierra Club's Grand Canyon (Arizona) Chapter, Defenders of Wildlife, the Center for Biological Diversity, the Coalition for Sonoran Desert Protection, Arizona Wilderness Coalition, Tucson Audubon Society, and the Center for Desert Archaeology.

The comments submitted below are intended to supplement previous comments we submitted individually and along with the Wilderness Society et al. (see comments dated July 13, 2009). We incorporate by reference the three sets of previous scoping comments we submitted in 2009. We may continue to gather and submit additional new information to assist with developing the alternatives and analyzing the environmental impacts of the proposed project. We understand that the Bureau of Land Management (BLM) has indicated it will continue to accept comments after June 10th.[1]

Our organizations are committed to helping reduce greenhouse gas emissions and limiting global climate change. Transforming the nation's electricity sources from polluting fossil fuels to clean renewable energy is an essential part of meeting our carbon reduction goals. We must rapidly increase our nation's energy efficiency and use of renewable energy by advocating improved appliance and building efficiency as well as a rapid ramp-up of both distributed generation (mainly rooftop solar) and

[1] BLM website for SunZia: "The BLM will continue to accept comments received after the June 10th, 2010 public comment period for the proposed SunZia Southwest Transmission Project." *See* http://www.blm.gov/nm/st/en/prog/more/lands_realty/sunzia_southwest_transmission.html

large-scale renewable energy, including solar, wind, and geothermal generating plants. We believe all of these will be necessary to meet our climate goal. In the short term, some proposals for large-scale renewable and associated transmission lines will be needed. We seek to minimize any impacts of that proposed transmission on wildlife, air and water quality, and other important environmental values and believe it is incumbent upon the BLM to strive for this in developing a proposed action.

As environmental advocates analyzing the need for new transmission and related facilities, we want to ensure the following:

- any new transmission built is truly needed,
- new transmission minimizes local and regional environmental impacts,
- utilities expend the necessary resources to develop efficiency and distributed generation so as to minimize the need for new transmission,
- new transmission purported to carry renewable energy must not instead turn out to be a major conduit for coal power, and
- environmental interests have a seat at the table wherever transmission decisions are being made.

While we understand the need for additional transmission, that transmission must be appropriately located to avoid or minimize harm to wildlife, wildlife habitat, or wilderness values, among other important issues.

The construction of the proposed SunZia transmission line should not be considered a *fait acompli*, and serious consideration of the purpose and need and a no-action alternative should be included. Questions that should be evaluated include these:

- Is this project necessary to support renewable energy development in the region?
- How will this project affect power reliability and planned transmission projects for Tucson Electric Power?
- Could a route through Tucson eliminate the need for planned transmission lines in the sensitive San Pedro River Valley or through the Aravaipa Canyon watershed?

We continue to have serious concerns about several issues, including two routes that are still on the table and that would cut through sensitive lands and important wildlife habitat – the San Pedro Valley and Aravaipa Canyon – and whether this proposed SunZia line will actually be primarily a line for clean renewable resources.

Transmission Routes

Aravaipa Canyon

This proposed route is unacceptable and unreasonable and should be removed from further consideration. It would impact the Aravaipa Canyon watershed by cutting through it for more than 20 miles, crossing Aravaipa Creek, and fragmenting connectivity between two wilderness areas – Aravaipa Canyon Wilderness and Galiuro Wilderness. This area is one of the largest unfragmented wildland blocks in southern Arizona. A new transmission corridor would impair wilderness characteristics and values and would likely lead to unintended and undesirable impacts to this intact wildland complex.

The proposed Aravaipa route passes within two miles of the Aravaipa Wilderness boundary. The intervening two miles contain roads that are recommended for closure and lands that are recommended as an "Area to be Managed for Wilderness Characteristics" in a Sky Island Alliance report.[2] This same report contains a citizens-proposal for Wilderness Additions to the existing Galiuro Wilderness Area managed by the Coronado National Forest, which together with the sensitive BLM lands to the north, constitute a priority area for wildlands protection and maintenance of north-south ecological connectivity.

Aravaipa Creek supports a lush riparian community and provides important habitat for numerous species of wildlife, including various species of bats, coatimundi, leopard frogs, and mountain lions, among many others. A 17-mile stretch of Aravaipa Creek is perennial and provides some of the best native fish habitat in Arizona, supporting seven species of native fish, including the federally listed threatened spikedace and loach minnow. Although the upper and lower portions of the creek are intermittent and ephemeral, they continue to support important riparian vegetation and provide habitat for many wildlife species.

According to the BLM, more than 150 species of birds have been documented in the Aravaipa Wilderness, including the peregrine falcon, common black-hawk, bald eagle, cactus ferruginous pygmy-owl, and southwestern willow flycatcher.[3] Because of this, the area is also popular for birding. Aravaipa also supports recreational opportunities for hikers, backpackers, and wildlife watchers, among others.

The proposed route bisects one of only two priority cultural resource areas in the Upper Aravaipa Valley and would fragment an important connection between the Galiuro Wilderness located in the Coronado National Forest and the Aravaipa Canyon Wilderness located on BLM lands.

Construction of a large transmission line involves developing temporary construction roads as well as a permanent road under the line. This causes significant habitat fragmentation and invites off-road vehicles. Roads and motorized uses can have serious detrimental effects on habitats and wildlife.[4,5,6] These effects include direct, indirect, and cumulative impacts, ranging from mortality from collisions with vehicles, modification of animal behaviors, altered use of habitats, facilitation of the spread of exotic, invasive, and parasitic species, adverse genetic effects, and fragmentation of connected habitats.

---

[2] Sky Island Alliance. 2005. Aravaipa Ecosystem Management Plan: Management Recommendations. Tucson, Arizona. Available online at http://www.skyislandalliance.org/media/aravaipa.pdf.

[3] Bureau of Land Management. Wildlife: Avavaipa Canyon Wilderness Area Permit System. Safford Field Office. Available online at http://www.blm.gov/az/st/en/arolrsmain/aravaipa/wildlife.html.

[4] Trombulak , S.C. and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14: 18-30.

[5] Wisdom, M.J., A.A. Ager, H.K. Preisler, N.J. Cimon, and B.K. Johnson. 2004. Effects of off-road recreation on mule deer and elk. Transactions of the North American Wildlife and Natural Resources Conference 69: 531-550.

[6] van Riper, C. III., and R. Ockenfels. 1998. The influence of transportation corridors on the movement of pronghorn antelope over a fragmented landscape in northern Arizona. Proceedings International Conference on Wildlife Ecology and Transportation (ICOWET).

Further road-building, construction, and improved off-road vehicle access in this area will also contribute to erosion and sedimentation that could travel downstream through tributaries and impact threatened native fish populations and other species[7,8] in Aravaipa Canyon, over 20 of which are designated with some sort of special status.

San Pedro Valley

This proposed route is also unacceptable and unreasonable and should be removed from further consideration. The San Pedro River Valley supports one of the last major free-flowing rivers in the desert southwest and, as such, is important habitat for many species and a key migratory corridor for neo-tropical birds. It is a world-renowned birding area and an important tourist destination. The San Pedro also supports the greatest diversity of mammal species in North America,[9] including mountain lion, black bear, coatimundi, javelina, fox, coyote, badger, three skunk species, mule and white-tail deer, ringtail cat, raccoon, bobcat, beaver, porcupine, black-tailed prairie dog and 24 species of bats as well as many other smaller or lesser known mammal species. In addition, the San Pedro River Valley provides habitat for a great diversity of avifauna and is an important migratory flyway. Just south of the proposed SunZia transmission line crossing areas is the San Pedro Riparian National Conservation Area, established by Congress to protect important habitat. During the last 20 years, the high quality riparian habitat coupled with the unfragmented nature of the lower valley has resulted in many lands being acquired for biological mitigation purposes. Most notable is the 7B ranch owned by Resolution Copper Company and proposed for land exchange with the federal government in recently introduced legislation by Congresswoman Kirkpatrick and Senator John McCain. Two of the proposed San Pedro alignments will go through the ranch lands or in close proximity.

In addition to the outstanding ecological values of the San Pedro River Valley, the lower valley represents ones of the most intact prehistoric, cultural landscapes in southern Arizona, if not the whole Southwest.[10] A full range of cultural sites can be found in the area, providing a record of human history that spans 2,000 years. This rich cultural landscape remains under constant threat of residential and commercial development, as well as looting and vandalism. The latter is exacerbated by increased vehicular access, as demonstrated by impacts to sites located in close proximity to the 138-kV line operated by Sulphur Springs Valley Electric Cooperative whose numerous access routes have become a magnet for off-road vehicle travel. A transmission project of the size proposed by SunZia and its related construction and maintenance access routes will greatly increase unauthorized traffic in the area which will also increase the risk of looting and vandalism to these prehistoric sites.

---

[7] Environmental Protection Agency. 1995. Erosion, Sediment and Runoff Control for Roads and Highways. EPA-840-F-95-008d.

[8] Grace, J. M. III. 2002. Sediment Movement from Forest Road Systems: Roads: a Major Contributor to Erosion and Stream Sedimentation. The Free Library. Available online at http://www.thefreelibrary.com/Sediment+movement+from+forest+road+systems%3A+Roads53A+a+major...-a095443346.

[9] Bureau of Land Management. 1989. Mammal Inventory of the San Pedro Riparian National Conservation Area, Cochise County, Arizona: Final Report. San Pedro Project Office, Safford District.

[10] Anyon, R., T.J. Ferguson, and C. Colwell-Chanthaphonh. 2005. Natural Setting as Cultural Landscapes: The Power of Place and Tradition. USDA Forest Service Proceedings RMRS-P-36. Pp. 273-276.

Tucson Routes

The least environmentally harmful routes would include the proposed Tucson routes or possibly other Tucson routes not yet considered, including a route submitted by the Cascabel Working Group (CWG), dated May 28, 2010. To the greatest degree possible, these routes should follow existing transportation or transmission corridors in order to limit additional fragmentation of wildlife habitat and wildlife travel corridors.

We ask that the BLM give serious consideration to routes that meet these criteria, including the route presented by the CWG. The CWG proposed route, while not free of potential conflicts, would avoid many of the potential conflicts and seemingly insurmountable obstacles presented by the other Tucson routes identified by the BLM. A Tucson route could provide opportunity to improve the grid in and around Tucson and is also an opportunity for co-location of projects with Tucson Electric Power.

Sevilleta and Bosque del Apache National Wildlife Refuges

Proposed routes across (E60/E70, E120) and adjacent to (E20, E100, E110, A102, A111, A130, A140, A160)) these two National Wildlife Refuge units are unacceptable due to high levels of conflict with sensitive resources and the conservation mission and goals of the National Wildlife Refuge System:

"The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."[11]

The Rio Grande River is a well-documented bird migration corridor that could be impaired by above-ground high voltage transmission lines. The presence of transmission lines crossing this river corridor in or adjacent to these wildlife refuges present a serious conflict that would be difficult, if not impossible, to mitigate.

New Mexico Wilderness Alliance Citizen's BLM Wilderness Inventory Units in the Quebradas

The E130, E110, and A90 would cut across the Sierra de la Cruz, Veranito, and Stallion New Mexico Wilderness Alliance Citizen's Wilderness Inventory Units, respectively. In order to maintain the well-documented wilderness characteristics and values of these and adjacent areas in the "Quebradas" wildlands complex east of Socorro, we recommend excluding these routes from further consideration.

Route with Least Environmental Conflicts in New Mexico

We recommend analyzing the D10/D61/D62/D100/D101/D104 route through Carrizozo and on the east side of the White Sands Missile Range (WSMR), as it contains the least conflicts with environmentally sensitive areas and designated or proposed conservation lands. We suggest that you also analyze an alternative route on the east side of WSMR as proposed in comments submitted by The Wilderness Society and partners (November 25, 2009). We advocate for analysis of a route that crosses the Rio Grande River south of the Caballo Reservoir between Derry and Arrey. We request

[11] National Wildlife Refuge System Improvement Act of 1997. Public law 105-57. October 9, 1997.

that the physical and economic feasibility of undergrounding the transmission line across the Rio Grande riparian area be analyzed.

Construction Impacts

Every attempt should be made to avoid sensitive lands, important wildlife habitat, special status plants, and archaeological sites during construction. Many significant impacts from electric transmission lines occur during construction. Each of the towers requires grading, vegetation removal, and placement of a large concrete footing for the tower itself.

During construction, impacts include the following: soil disturbance and eradication of plant communities; disturbance of ground-dwelling species including amphibians, mammals, and ground-nesting birds; soil erosion; interference with large mammals such as pronghorn, elk, and deer that prefer locations distant from roads; and interference with birds and bats, whether migrating or not.

Monitoring and Mitigation

Limiting and eliminating negative impacts to wildlife, vegetation, and cultural sites should be a top priority for the BLM. Monitoring any anticipated impacts of the proposed project on sensitive wildlife species and natural resources will also be essential for identifying ways to minimize and offset negative impacts. The BLM should disclose how environmental monitoring and mitigation will be undertaken, including the type, timing, and frequency of surveys, protocols and thresholds to initiate impact minimization, and methods to be employed to offset unavoidable impacts such as road and tower construction, increased vehicular traffic, accelerated erosion/sedimentation, human disturbance, impairment of visual resources, etc. We also encourage the BLM to address the location of off-site mitigation. Any mitigation that takes place off the impacted site should occur locally and within similar habitat.

The monitoring program should involve pre- and post-construction surveys for wildlife in the appropriate seasons, including bat and bird telemetry studies of sensitive species, so as to identify and ultimately avoid siting infrastructure in the path of established flyways, migratory routes, roosts, and foraging circuits. Surveys should be conducted using robust methodologies. Because much of bird migration occurs during the night, night surveys are necessary to conduct in addition to day surveys in order to gain a full understanding of the potential effects upon avifauna, habitat quality, migration, potential for direct mortality from electrocution, etc.

Conclusion

We encourage the BLM to recognize the significant and negative impacts the San Pedro and Aravaipa routes in Arizona would have on wildlife, cultural, and wilderness resources, and to drop those routes from further consideration. The routes across and adjacent to Sevilleta and Bosque del Apache National Wildlife Refuges in New Mexico should also be eliminated due to high levels of conflict with sensitive resources and the conservation mission and goals of the National Wildlife Refuge System. Likewise, routes that cut across the Sierra de la Cruz, Veranito and Stallion New Mexico Wilderness Alliance Citizen's Wilderness Inventory Units are also unacceptable and should be eliminated. We ask that you seriously consider routes that do not affect these areas, including a Tucson route in Arizona and a route through Carrizozo and on the east side of the White Sands Missile Range in New Mexico. Overall, the BLM must also evaluate whether the project is necessary to support renewable

energy development in the region and how it will affect power reliability and planned transmission projects for Tucson Electric Power.

We appreciate the opportunity to comment and your consideration.

Sincerely,

Sandy Bahr
Sierra Club – Grand Canyon Chapter
202 E. McDowell Rd, Suite 277
Phoenix, AZ 85004
(602) 253-8633
sandy.bahr@sierraclub.org

/s/
Matt Clark
Defenders of Wildlife

/s/
Andy Laurenzi
Center for Desert Archaeology

/s/
Randy Serraglio
Center for Biological Diversity

/s/
Matt Skroch
Arizona Wilderness Coalition

/s/
Pearl Mast
Chet Phillips
Cascabel Working Group

/s/
Carolyn Campbell
Coalition for Sonoran Desert Protection

/s/
Paul Green
Tucson Audubon Society

From: Arthur Smith
To: NMSunZiaProject@blm.gov
Subject: aravaipa
Date: 06/06/2010 08:08 PM

Do you think it is really necessary to put your lines through the historical and beautiful Aravaipa area? Did you expect no repercussions? A. Smith, oracle, Az

From: MRorMRSRJS@aol.com
To: NMSunZiaProject@blm.gov
Cc: twray@southwesternpower.com; Adrian_Garcia@blm.gov
Subject: Public Comments
Date: 06/08/2010 02:25 PM

First, THANK YOU for eliminating the route through the Windmill Ranches sub-division in Ancho, NM. We know nothing is finalized yet, but this gives us hope, and takes unwanted stress off our daily lives!!

Second, these are our thoughts on the other proposed routes in our area:
Please DO NOT SELECT D10, as that goes along our front mountain views.
Our preference would be E10, which is North of, and farthest away from, the Ranch.

Third, we have a concern about the actual placement of the sub-station. To our understanding, it can be placed anywhere inside the lined circle on the maps. The circle overlaps the sub-division. Now, there is talk that you are considering placing the sub-station on an abandoned natural gas site, with an airstrip. That seems like a good idea, as it far away, and a good way to re-use a site.

Please continue to avoid our private land.

Thank you,
Bob & Jo Simpson

Charlotte Lipson
<lipson@zianet.co
m>

To
nm_comments@nm.blm.gov

06/04/2010 12:12
PM

cc

Subject
I care about Bosque del Apache

As a long time member of Friends of the Bosque del Apache I agree with the following comments and strongly urge you to ensure that SunZia does not install power lines near the refuge and that e they remove the threat to our migratory birds.

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey our opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of “M” Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.
Although “green” power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Thank you.

Charlotte Lipson
Las Cruces

Chris Eastoe
<eastoe@email.arizona.edu>

05/26/2010 09:17 AM

To
Adrian_Garcia@blm.gov, brian_bellew@blm.gov

cc

Subject
More Cliffs slides

Dear Messrs. Garcia and Bellew:

It seems that you didn't get Cliffs part 1 that I tried to send yesterday -- I get messages saying that the attachment was too big even though it looks like only 3.9 MB on my computer. So I need to split that one into two as well. Here is part 1. Could you get someone at your end to use Adobe Acrobat to recombine them into one pdf, in the order 1a, 1b, 2a, 2b?

Best wishes,

Chris Eastoe
(See attached file: Cliffspart1a.pdf)

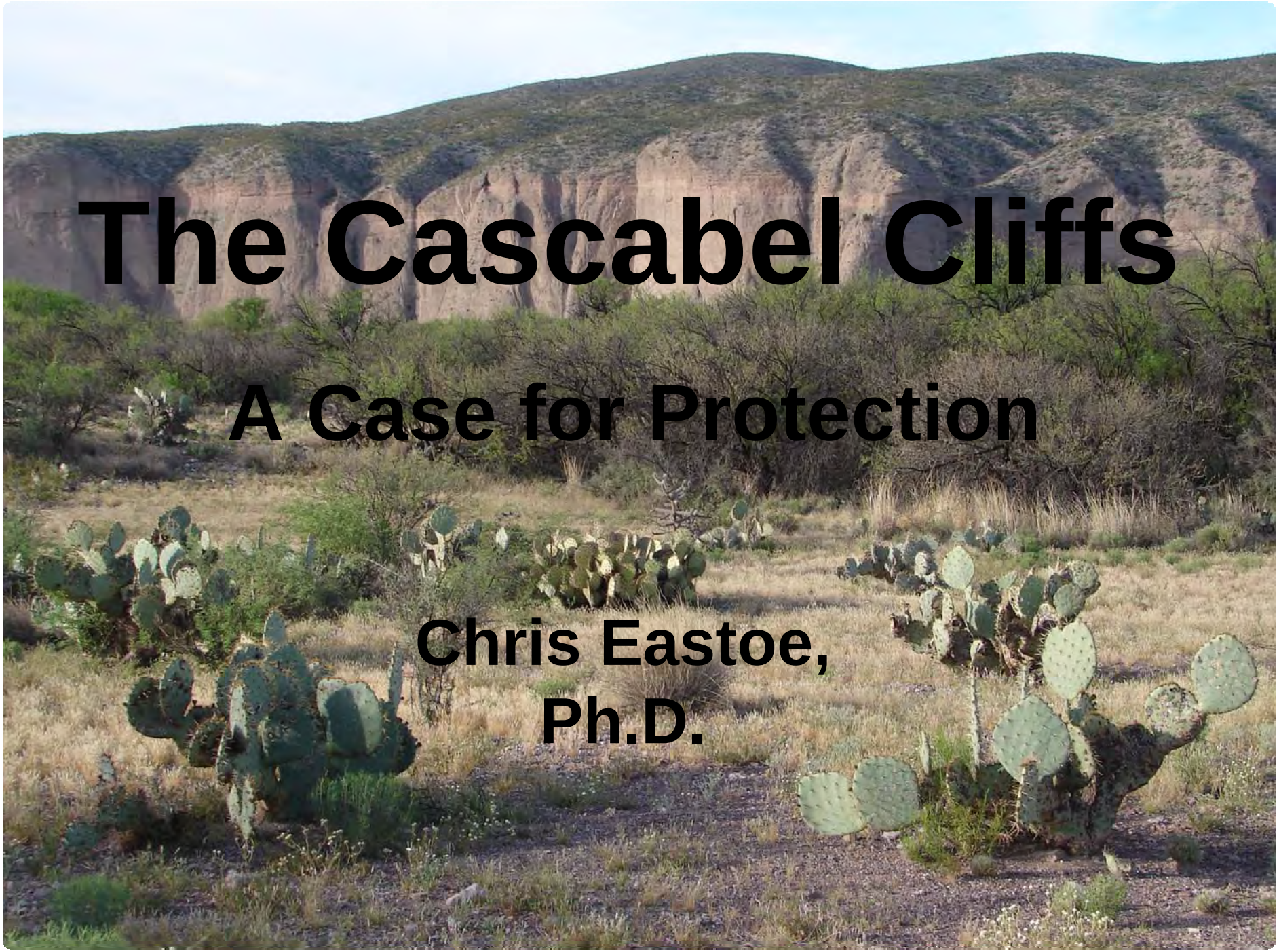
Chris Eastoe
<eastoe@email.arizona.edu>
05/26/2010 09:18 AM

To
Adrian_Garcia@blm.gov, brian_bellew@blm.gov

cc

Subject
Cliffs part 1b

Here's part 1b.
(See attached file: Cliffspart1b.pdf)



The Cascabel Cliffs

A Case for Protection

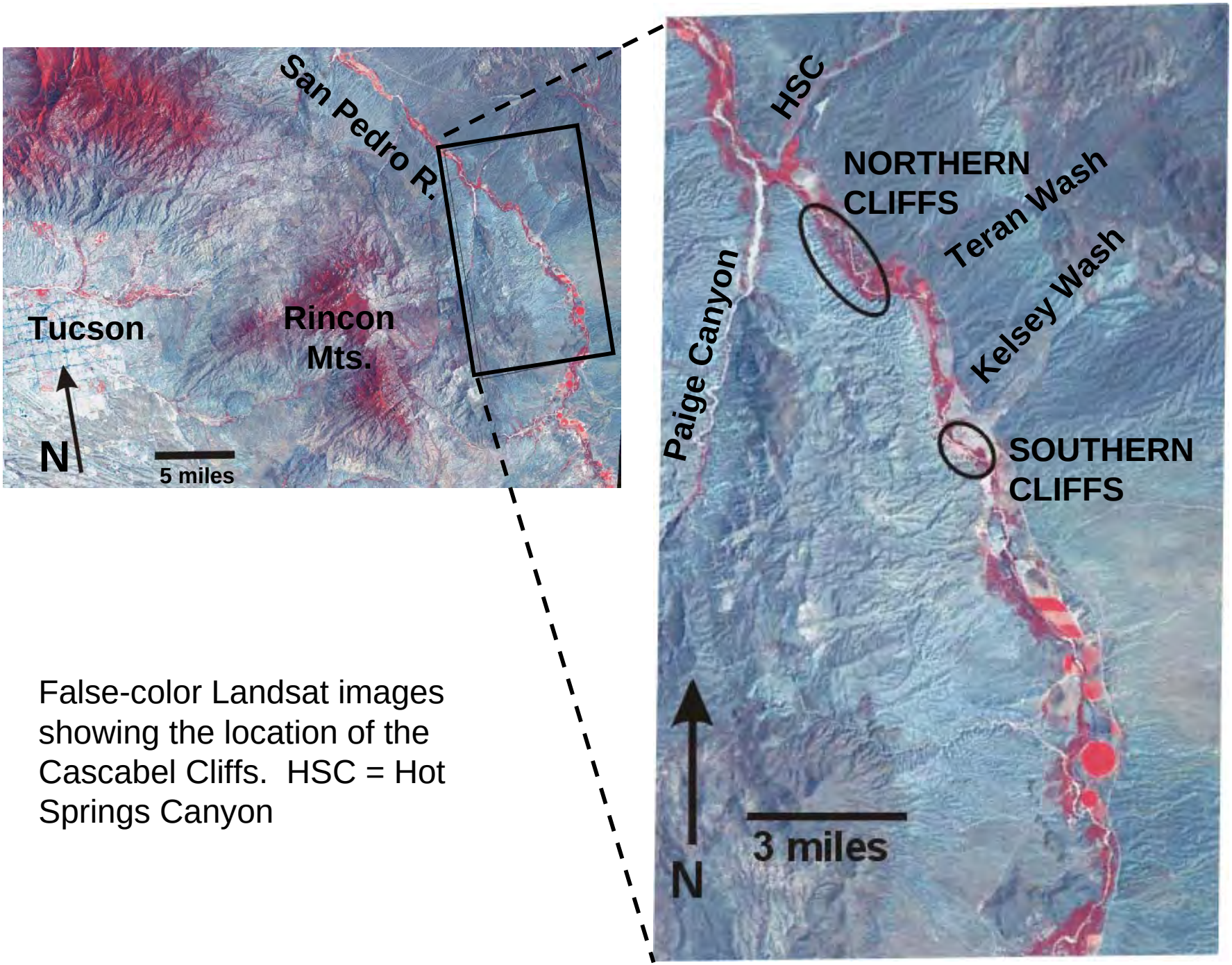
Chris Eastoe,
Ph.D.

The most scenic reaches along the San Pedro River are to be found where two sets of cliffs line the west bank of the river at Cascabel. The southern cliffs are located near the Heaven Sent Ranch, opposite Kelsey Wash. The northern cliffs begin near the confluence of Teran Wash with the river, and extend about 3 miles downstream. Two types of landform are present in the both areas: sheer cliffs and a combination of cliffs and badlands, the latter occurring to the north of the sheer cliffs in both cases. In the northern area, the sheer cliffs are in beds of brown sediment, and rounded cliffs with associated badlands have formed in overlying beds of gray sediment.

In addition to their scenic value, the Cascabel Cliffs are of interest for their geological, biological and cultural significance. Furthermore, the active alluvial fans and the mesquite bosque at the foot of the northern cliffs provide a large area of relatively undisturbed habitat for a considerable variety of plants and animals.

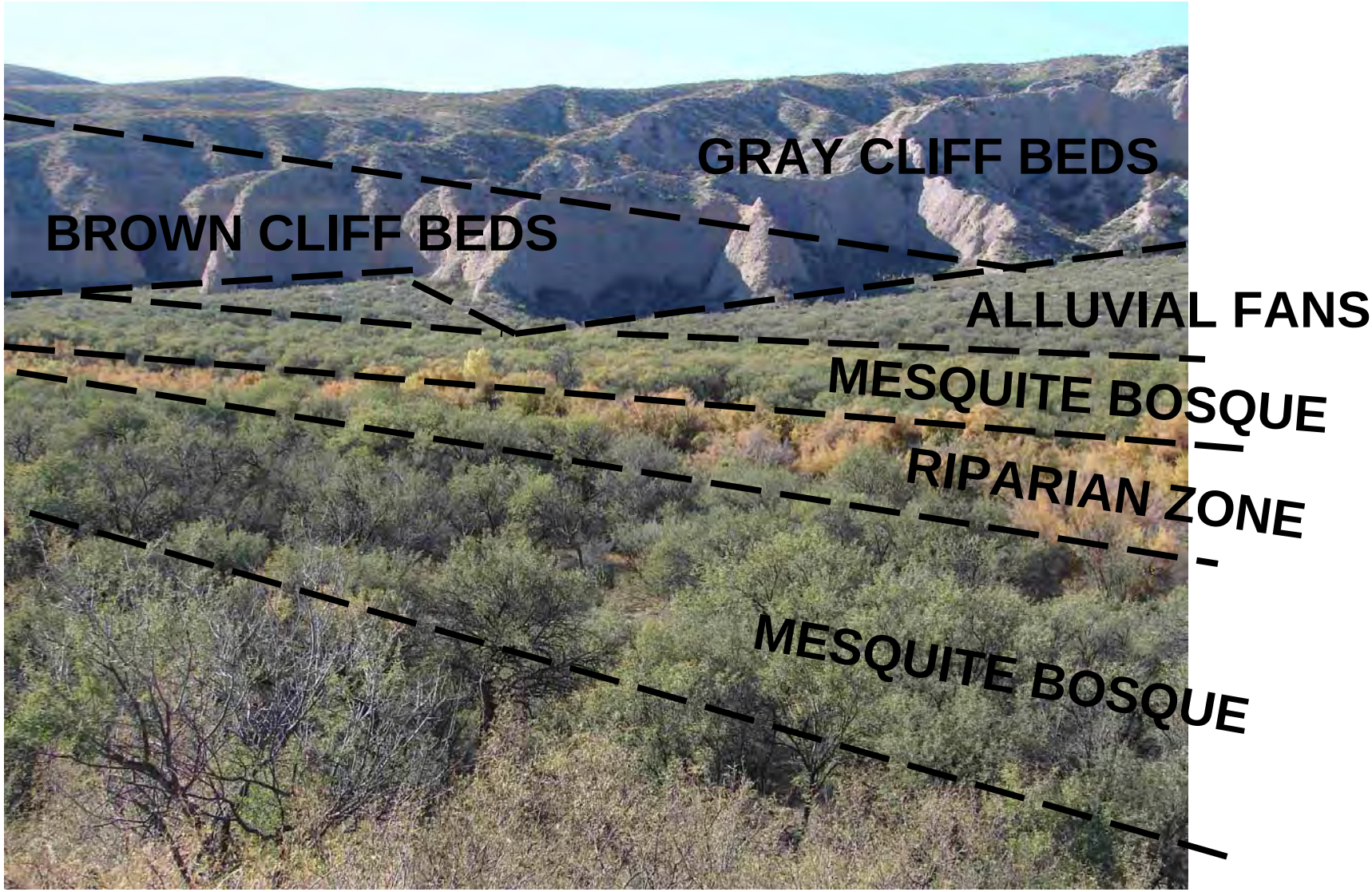
The purpose of this presentation is to bring the values of the Cascabel Cliffs and the land at their feet to the attention of the public, with a view to encouraging protection of these features from activities leading to damage or defacement .

The following five slides include a satellite view of the Cascabel area, showing the location of the cliffs, and slides illustrating the landforms and vegetation zones.



False-color Landsat images showing the location of the Cascabel Cliffs. HSC = Hot Springs Canyon

The southern cliffs, located near the Heaven Sent Ranch.



Geological and vegetation zones of the northern cliff area.

Northern cliffs: typical landforms of the brown cliff-forming beds.

The largest canyon in the northern badlands, and an adjacent canyon to the south, provide sheltered and somewhat isolated micro- environments with a variety of niches for plants. Distinctive plant communities inhabit the south-facing and north-facing slopes. Species characteristic of the San Pedro valley (e.g. saguaro, yucca, wolfberry, acacia, cholla, prickly pear, ocotillo) are found alongside low-elevation desert species that are currently absent from the adjacent valley(e.g. sotol, brittlebush, desert willow, foothills palo verde) and high-elevation species (juniper, paintbrush, snapdragon vine, and a blue penstemon not seen elsewhere at this altitude). These canyons, and to a lesser degree the gentler slopes of the surrounding badlands, appear to constitute a refugium (place of refuge) for species whose ranges have changed with climate since the end of the Ice Age. The following slides illustrate the diversity of plant species in the largest canyon.

May 2, 2010

May 2, 2010

The alluvial fans

At the foot of the northern cliffs and badlands, a set of broad alluvial fans consisting of loose gravel eroded from the badlands extends several hundred feet towards the river. The perennial plant community includes acacia, ephedra, up to 10 cactus species, crucifixion thorn, mesquite, and yucca. In wet years, there are spectacular displays of annuals and four-o'clock, a perennial plant not present elsewhere in the region. The following slides illustrate this plant community.

May 2, 2010

April-May 2010

The mesquite bosque

The level area of ancient river sediments between the alluvial fans (northern cliffs) and the river hosts a bosque of tall (20-30 ft.) mesquite trees, with local clearings.

Much of the bosque near the southern cliffs has been cleared for agriculture.

< Mesquite bosque between the brown cliff-forming beds and the river, northern cliffs.

Bladderpod flowers in a clearing in mesquite bosque at the foot of the gray cliff-forming beds, northern cliffs. >

Tracks in river mud after monsoon flood

Raptor roost in slot canyon

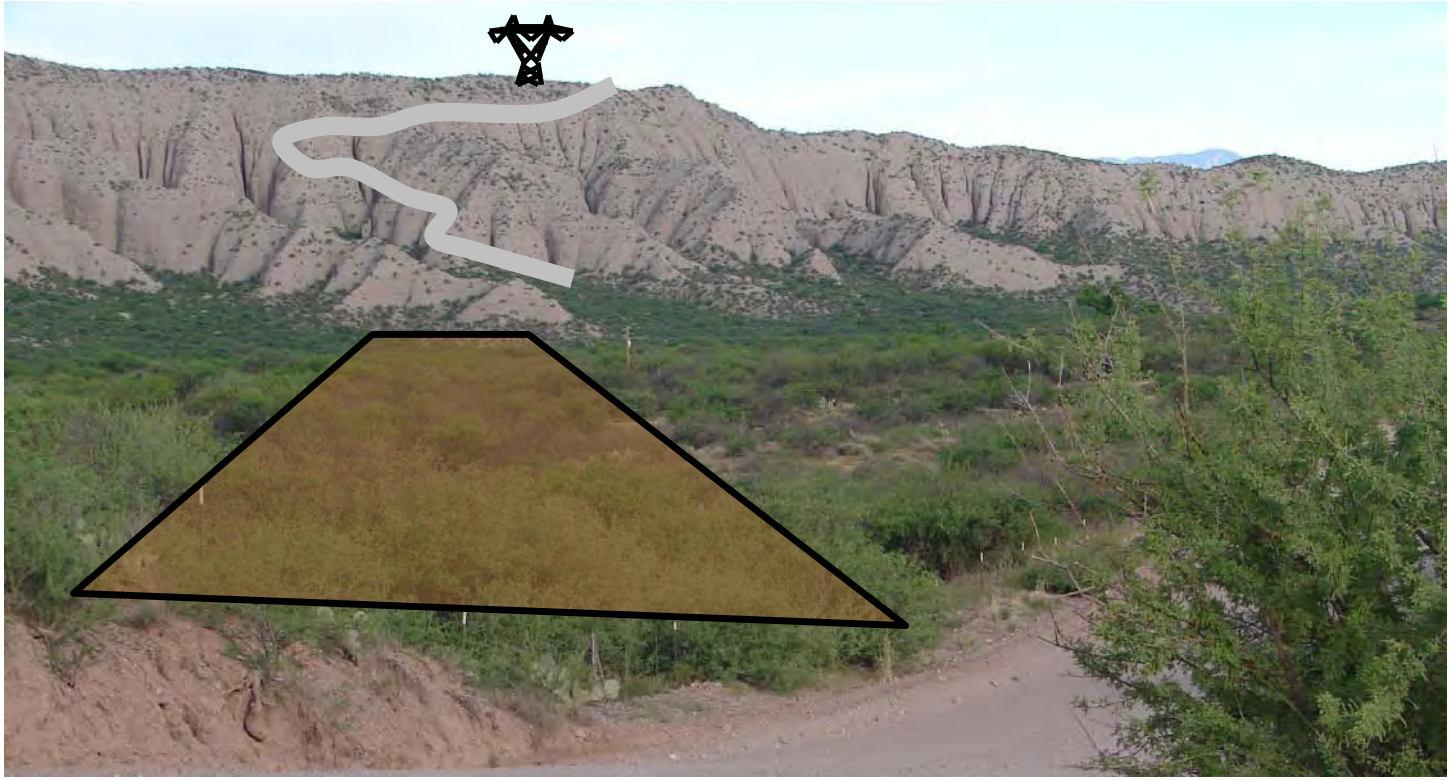
Animals

The bosque and the alluvial fan scrub support a wide variety of reptiles, birds and mammals. The birds for which the riparian environment of the San Pedro valley is famous also depend on these environments for food and shelter, and the cliffs provide roosts for raptors. An exhaustive count of mammals cannot be provided at present, but the list includes coyote, javelina, raccoon, ringtail, deer, large and medium-size cats, coatimundi, grey fox, kit fox, skunks, rabbits and many rodents.

Cultural values

The Sobaipuri Indians clearly used the mesquite bosque as a source of food, as evidenced by a set of metates in the southern cliff area. In the northern cliff area, most traces of Indian settlement are on the eastern side of the river. Scattered agaves found at the foot of the northern cliffs may be escapees from Indian gardens of a thousand years ago.

For the present-day residents of Cascabel, the cliffs – and particularly some of the slot canyons – represent a spiritual focal-point of the district.



Sunzia

This view of the gray cliffs and badlands taken from the Cascabel Road shows the likely route of the proposed Sunzia segment C276 that would cross the San Pedro River in Cascabel. The cliffs would be defaced with a tower and an access road (simulated on the photo), and a 45 to 75 acre swath (brown polygon) of the bosque and the alluvial fan vegetation would be cleared, bisecting these habitats.

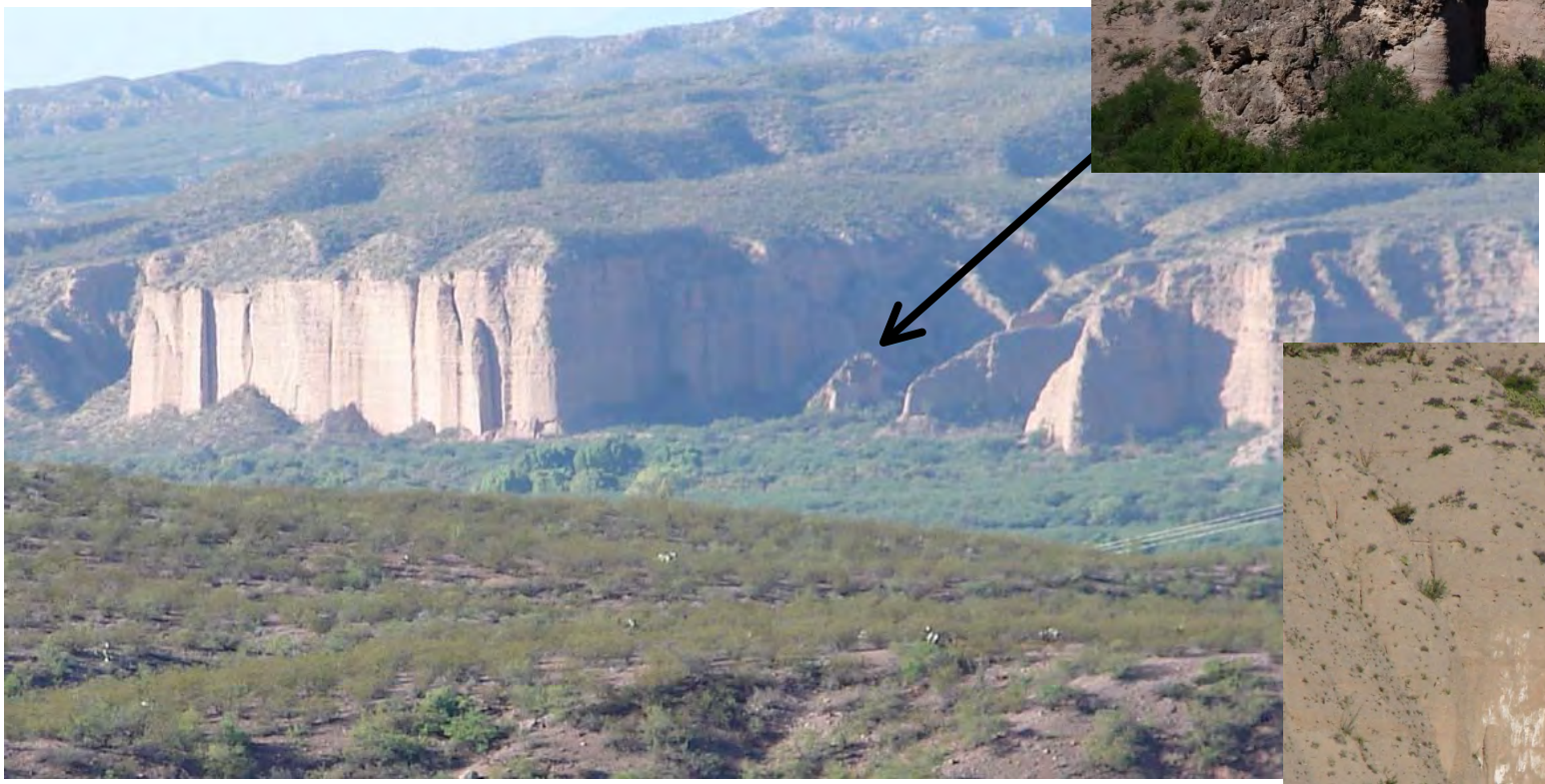
SUMMARY. The Cascabel Cliffs are a spectacular element of the scenery in the San Pedro Valley. In addition, the cliffs, badlands and the undeveloped land between them and the river constitute a biological treasure-house. The area pictured above, encompassing the broadest part of the mesquite bosque and the alluvial fan scrub, and a central part of the gray cliffs/badlands, is the area of greatest biological value. It is vulnerable because it is one of very few places where a river crossing is possible on State Trust land. The construction of the segment of the Sunzia transmission line proposed for this location would result in the clearing of scrub and bosque, and the defacing of the cliffs. This is unacceptable to the Cascabel community, and to all Arizonans interested in the preservation of a unique and significant scenic feature.

Northern cliffs: the gray cliff-forming beds, and a detail of typical landforms. The canyon in the center of the upper image is the main site of the plant diversity, discussed below.

Geology

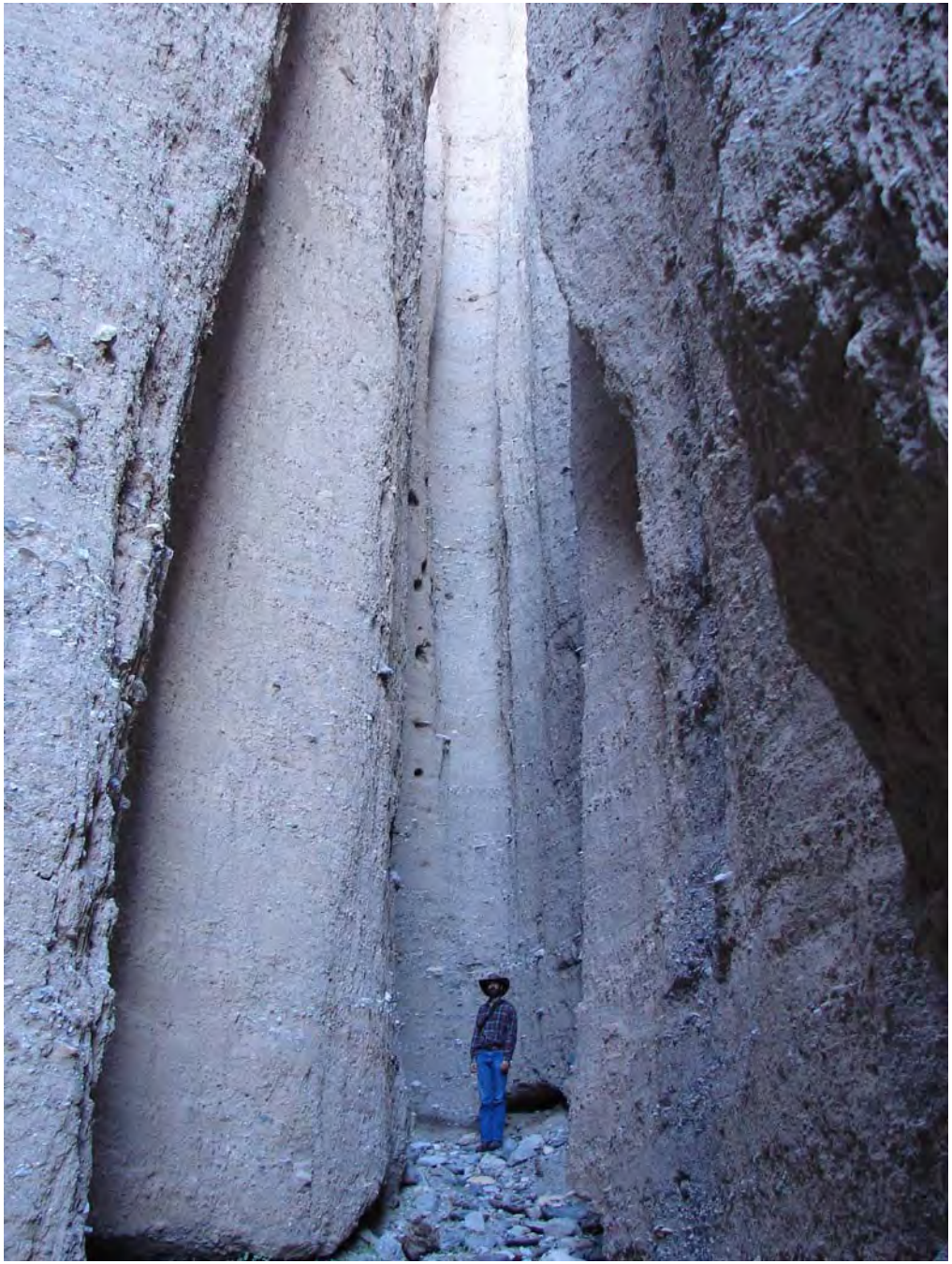
The cliffs consist of basin-fill alluvium deposited between 11 and 5 million years ago. Pieces of limestone, granite and metamorphic rock derived from high land to the west were deposited in the San Pedro Basin in large alluvial fans as fine- to coarse-grained gravel with small boulders. The San Pedro Basin is one of many similar Basin-and-Range features typical of southern Arizona. Cliff formation is unusual in such basin-fill deposits. If one looks at the continuation along-strike (that is, more-or-less horizontally) in the same set of alluvial fan beds, it is clear that only limited parts of each deposit can stand as cliffs; the other parts form gentler slopes.

In order to form cliffs, the basin-fill deposits must be hardened by the formation of cementing minerals. One way that this might occur is through the circulation of hot water. Springs have been present in the area. Near the southern cliffs, there is a well-preserved deposit of travertine that formed from a spring issuing from a slope cut into the cliff-forming deposit. The travertine contains imprints of the stems of plants that grew around the ancient spring. At the northern cliffs, a swarm of parallel faults cut the gray beds, and some faults are filled with white material that may have been deposited from circulating hot water (see next slide for illustrations).



^ Southern cliffs, with travertine deposit (arrow). Detail photo by Jim Flood.

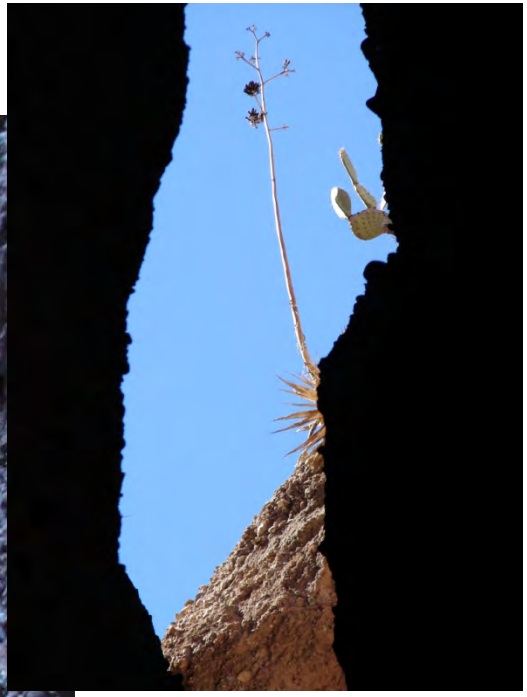
Northern cliffs, white vein deposit in fault >

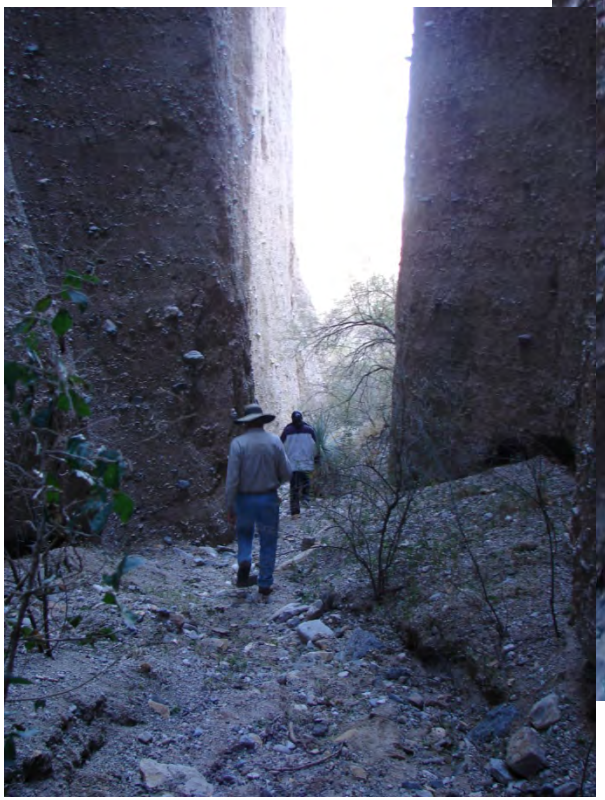


The Canyons

Rainwater runoff has carved many deep clefts into the gray cliff-forming beds, along with a few broader V-shaped canyons. Extensive slot canyons, better known in the sandstones of the Colorado Plateau, are unusual in the basin-fill alluvium of southern Arizona. The slot canyons at Cascabel commonly have a conical form, and in a few places are closed overhead as a result of the slumping of a large block, or the erosion of a meander-like bend in the canyon (an incised meander).

Slot canyons of the northern cliffs.





Extremely narrow slot formed as a result of slumping of the right-hand wall >

< Arch formed in an incised meander within a slot canyon

Elna Otter
<elna.otter@gmail
.com>

To
nm_comments@nm.blm.gov

06/03/2010 08:01
AM

cc

Subject
SunZia Southwest Transmission
Project Environmental Impact
Statement

From
Elna Otter and James C. McPherson
5819 N. Cascabel Rd.
Benson, AZ 85602

COMMENTS:

We are concerned about the rush to big transmission lines and that it is said to be common knowledge that there will soon be such lines traversing Arizona. SunZia is disseminating such “inside knowledge” and clearly wants to take advantage of the situation.[1] They expect to have their transmission lines in there and apparently hope that they will not only be the “first kids on the block,” but that the federal government will fund this effort.

We are not so sure of this “common knowledge,” and we are far from convinced that Arizona or New Mexico or the United States as a whole needs such lines. The very first thing that has to happen with respect to an energy-response to climate change is to use less of it on a per capita basis. How is that to happen? Right now the cheapest and most efficient way to reduce carbon dioxide in the air is through efficiency and conservation. A huge reduction in energy use is possible immediately at a relatively small cost.

We are aware that governmental home energy efficiency efforts have been largely unsuccessful. Although some people have taken advantage of the federal and state programs to install insulation, better windows, solar panels, etc., most people are not aware of the programs or are reluctant to use them due to the economy. Rather than walk away from these efforts, more money should be spent advertising them![2] We are pleased that there are finally efforts being made to increase automobile and appliance efficiency.

We must use energy efficiency and conservation to reduce our per-capita use so that less total energy will be needed. The transmission lines we have should suffice. Do we think that the current dirty sources of energy should be replaced? Of course!! we do not see what would be needed in the way of new transmission lines to exchange dirty energy sources for clean ones except for some spur lines for the clean-energy sources to enter the system and we think that the federal government should look askance at any effort to promote a larger program.

What about the clean energy sources ostensibly being promoted through the construction of the proposed SunZia transmission lines? We all like the idea of carbon-free power. However, it is also true that what is needed is more base-load power. Photovoltaic and wind don't qualify except in the mind of some wind proponents who would link geographically distant sources in an effort to even out the spurts in generation. Both individual and large-scale photovoltaic in Arizona makes sense because of our dependence on air-conditioning in the summer and should be used to phase out fossil-fuel sources if just on a seasonal basis.

What carbon-free sources would be reasonable for base power?

- Nuclear. 4th generation nuclear power that holds the greatest, long-term hope for fission energy since it promises to be much safer and to require no further mining. (See a discussion by Hansen[3],[4]) Furthermore, the atmosphere cannot tolerate any more fossil fuel power plants and the available 3 rd generation nuclear provide a good alternative option (see Lovelock[5],[6] or Brand[7].) Furthermore, nuclear is a possibility for small communities. The nuclear submarine program that has been operating successfully for decades has clearly demonstrated that a small facility can run safely.

- Solar Thermal with Storage. What makes solar thermal a possibility for a base-load power source is the fact that a hot liquid is produced, which engineers anticipate could be stored and kept hot enough to run the facility when the sun isn't shining. Solar Thermal is still relatively new but there are commercial facilities operating, though none with the kind of storage that would be necessary for true base load power generation, free from backup with fossil or other fuel.

- Other, including geothermal and ocean thermal energy conversion (OTEC). (We are specifically not including so-called "clean coal" or biomass, and am forgoing a discussion given the scope of this letter.)

Work needs to be done on all these sources, and that the work should be done while Americans are busy cutting their demand through efficiency and conservation. (Most Americans are unaware that the cheapest form of energy available to them at an estimated 0.5 to 2 cents/kilowatt-hour[8] is obtained by increasing their energy efficiency. For some reason, electric utilities are slow to tell them. Perhaps we can see the desirability of some government spending on advertising here.)

Al Gore, while initially an enthusiast of new nuclear energy in the near term, concedes in his most recent book[9] that there will be a big problem rapidly increasing the use of nuclear energy due to the effective moratorium on plant construction and the inactivity of scientists and engineers working with cutting-edge nuclear generation. To me, that means that we just need to get Argonne and the other labs busy and back to speed. We can build improved, 3rd generation plants, and work on developing and testing 4th generation.

Rather than assume that giant transmission lines will be required, we should be encouraging energy efficiency and conservation through a carbon tax or a cap and auction scheme, and investing our money in developing appropriate energy sources.

The threat of the carbon dioxide in the air to the climate of the United States and of the world in general is real. We must make strides to not only halt the annual increase of carbon in the air, but to ultimately decrease it. It is imperative that our country not be an impediment to this effort, but to actually be a leader. Our country has the proven inventive ability to do that. If we can but progressively and predictably increase the price of carbon dioxide pollution, then American industry can do what it has always done, and take the lead in going non-carbon. We can gradually replace our most egregious, grandfathered-in coal powered plants with whatever would appear to be the best non-carbon choice. Until we can establish a consumer-driven incentive (carbon tax or cap and auction) it would appear that federal government subsidy will be required.

Would a system of small nuclear facilities be preferable to giant solar-thermal in Arizona, or perhaps a linked multi-state wind system in the Midwest either of which would transport the power out of the area? We can let market forces decide. Should we condemn hundreds of square miles of pristine wild lands for the transmission part of either of the latter schemes? That is harder, but it would be nice if there were a realistic “price” for the value of wild lands. (We think that the residents of the Gulf states are beginning to realize the true value of their resource, and that money can’t replace it.)

It is not time to destroy our wild lands, nor even the neighborhoods around I-10. We do need to be patient.

SunZia would like to begin generation at its Bowie Plant site and other electric utilities would like to sell more electricity. Those utilities certainly do not want to sell less conventional electricity. But their economic interest is just not the same as the best interests of the citizens or the planet. We believe that the current efforts to cross Arizona with giant transmission lines are extraordinarily misguided or, more accurately, guided mainly by the bottom line of SunZia’s owners

[1] Multiple representatives from SunZia and the Environmental Planning Group (EPG) made such statements repeatedly to various people at the April 29th, 2010 scoping meeting held in Tucson AZ. They said that transmission lines across Arizona and New Mexico were “on top of the pile” on Obama’s desk.

[2] See, for example, Federal Tax Credits for Consumer Energy Efficiency at http://www.energystar.gov/ . Additionally, home energy audits could be more supported.

[3] Hansen, James C. Storms of My Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity. New York, NY: Bloomsbury USA, 2009. Print.

[4] Hansen, James C. "Letter to Michelle and Barack Obama on Global Warming Policy." The Daily Green. Ed. Shapley Dan, Howard C. Brian, and Dawson Gloria. N.p., 2 June 2009. Web. 2 June 2010. <

http://www.thedailygreen.com/environmental-news/community-news/james-hansen-obama-climate-47010206
>.

[5] Lovelock, James, Our Nuclear Lifeline, originally March 2005 Readers Digest, http://www.ecolo.org/lovelock/Nuclear_lifeline_en.pdf

[6] Lovelock, James. The Vanishing Face of Gaia: A Final Warning. New York, NY: Basic Books, 2009. Print.

[7] Brand, Stewart. Whole Earth Discipline: An Ecopragmatist Manifesto. New York, NY: Viking, 2009. Print.

[8] LaPlaca, Nancy. "Coal Gasification." Cochise County Board of Supervisors. Bisbee. 14 Aug. 2007. Lecture

[9] Gore, Al. Our Choice: A Plan to Solve the Climate Crisis. New York, NY: Rodale Books, 2009. Print.

Jonathan Manley
<jonathan_manley@
yahoo.com>

06/05/2010 11:17
AM

To
"nm_comments@nm.blm.gov"
<nm_comments@nm.blm.gov>

cc

Subject Bosque del Apache

Please keep the SunZia project away from Bosque del Apache. It is a place of natural beauty and ecological significance and it would be tragic to compromise this. Choose an option that minimizes the impact on this wonderful place. With all the damage being done to the environment by commercial interests in the Gulf, you have a responsibility to conserve and not to destroy.

Thank you for your attention

Jonathan Manley

Sent from my iPad

"Kathryn Minter"
<Kathrynminter@ho
tmail.com>

To
<nm_comments@nm.blm.gov>

05/25/2010 03:41
PM

cc

Subject
Sun Zia Transmission Lines Comments

I sent these comments to Senator Bingaman on April 30, 2010. He just advised me to direct them to the local BLM. I hope I am still within the comment period. Thanks, Kathryn Minter, Alto

Dear Senator Bingaman: I am opposed to the Sun Zia Transmission Lines. At our recent Lincoln County Commission meeting, I learned that these will be a "one-way" highway, probably DC current, with one entry port and one offramp. No chance for other power sources to add along the way. The power delivered to AZ and CA will be very expensive.

I am also very concerned with the interference with Holloman Air Base Training. It was only 3 years ago that we were fighting to keep all of our air bases in NM with the promise of wide open spaces and unobstructed areas for training. All of the bases have had new missions and expanded the training and population. Now we want to compromise this with the Sun Zia line. Absolutely not.

Although the wind energy around Corona will benefit a few landowners, it will be a detriment to many others and our national security. States that have mandated a certain amount of electricity from renewable energy sources by a set date need to deal with it themselves. These governments had no concern for traditional energy sources and should not be messing with the free market system to deliver energy in the most cost effective manner.
Wind energy is one of the least efficient because it is not available 100% of the time and must be supplemented with other traditional sources.

Finally, I have a major concern with the Transmission Line crossing one of the most critical flyways and bird sanctuaries in our country, the Bosque de Apache. What a national treasure. The potential impact is not worth the electricity delivered to AZ and CA.

Thanks for your consideration. Sincerely, Kathryn Minter, Alto

linda meacher
<lmeacher@comcast
.net>
Sent by:
linsulupe@gmail.c
om

To
nm_comments@nm.blm.gov

cc

Subject
preserve Bosque Del Apache

06/04/2010 09:27
PM

Dear BLM: I can not say it better than the following:

On behalf of the Friends of the Bosque del Apache National Wildlife Refuge I would like to convey my opposition to the proposed study area expansion, as it does not provide any new routes that would relieve our concerns regarding the wildlife and economy of our community. Routes with valley crossings between Socorro and Belen would still pose a hazard to the daily flight patterns of sandhill cranes and snow geese, as well as the migratory pathway for hundreds of thousands of other birds. The infrastructure for this transmission corridor will mar the landscape and be visible for many miles in the open vistas of the Middle Rio Grande Valley. Though population densities are low between Socorro and Belen, tourism and land values are tied to the unique views of the rolling hills of Sevilleta National Wildlife Refuge, the majesty of "M" Mountain, and the cottonwood gallery along the Rio Grande. In concurrence with the position of the Bosque del Apache National Wildlife Refuge and many others in the community, the Friends believe that an eastern route, preferably along the eastern boundary of White Sands, is the only feasible option. Additionally, any proposed river crossing must be underground across the entire floodplain to minimize threats to the avifauna that travel the Rio Grande corridor.
Although "green" power is a concept that the Friends of the Bosque can support, the SunZia Southwest Transmission Project has not shown interest in addressing the ecological and economic impacts that this project will have on our region. The Friends of the Bosque will continue to educate, motivate, and mobilize our 1,000+ members, political connections, and community partners in opposition of any route configurations that ignore flyway and viewscape issues. To move forward, SunZia must acknowledge the more suitable routes to the east and south and obtain the appropriate scientific support and data to demonstrate minimal environmental impact. These resources are available, all of the partners have come to the table, and it has been demonstrated that our criteria (route and
underground) are feasible and not cost-prohibitive; now SunZia must make the responsible decision not to bulldoze through the small community and wildlife that cannot handle and do not want this project.

Please, please dear BLM, prevail in the interest of protecting of this refuge and support the alternative to the eastern boundary of White Sands. I implore you, do the right thing. Sincerely, Linda Meacher

Lynn Deming
<ldeming@nmt.edu>

05/03/2010 04:34 PM

To nm_comments@nm.blm.gov

cc

Subject SunZia

Thank you for the open house last Tuesday at the Socorro County Fair Grounds. I appreciated talking with the BLM representatives, seeing the many maps and tentative routes, and meeting people from as far away as Fort Bliss to the south and a hundred miles to the NE. Of course, none of us wants the transmission lines on or near our homes and property. I live just south of Highway 380 in the San Pedro area. I have previously expressed my concern--and joined my voice to those of other members of the Friends of the Bosque del Apache--about the transmission lines transecting the bird flyway. I think it would be disastrous. Presently, a bird--I think it may be an ibis--has been hanging for a couple of weeks from an electric line on highway 380 where the bridge crosses the Rio Grande. It seems to me to be a clear signal that such lines are very dangerous to birds.

Like all the others who attended the open house, I am very interested in how this project proceeds, and I look forward to updates.

Thank you.

Lynn Deming

Pam Brown
<salbpamb@yahoo.c
om>

To
nm_comments@nm.blm.gov

06/07/2010 07:36
PM

cc

Subject
sunzia project

As a member of Friends of the Bosque, a frequent visitor to Bosque del Apache and and many other areas along the Rio Grande flyway, and someone with an avid interest in all wildlife and especially migratory birds, I completely oppose the current plans (or lack of them) for the Sunzia transmission project. Little or no interest has been shown for protection of migratory birds and other wildlife. The Sunzia plans can be changed more easily than migratory bird flyways!

Pamela Brown

729 Tulane NE
Albuquerque, NM 87106

Sjogren
<4sjogren@dakotac
om.net>

05/10/2010 10:22
AM

To
Linda_Rundell@blm.gov

cc

Subject
Sjogren's SunZia Scoping Comment

Dear Director Rundell:

Thank you for your time and attention. With the hope of ensuring that you review my scoping comment, I've attached the PDF that I sent to the BLM SunZia address. I've also mailed you a printed copy of this document. Please feel welcome to contact me for any discussion or clarification.

Thanks again,
Jon Sjogren

110 W. Meadowbrook Dr.
Tucson, AZ 85704-6712
(520) 297-8582
4sjogren@dakotacom.net

(See attached file: Sjogren's SunZia BLM Comment.pdf)

May 3, 2010

Bureau of Land Management
SunZia Transmission Line Project
P.O. Box 27115
Santa Fe, NM 87502-0115

Subject: Scoping Comment Stating Why Arizonans Should Oppose SunZia

I am a research engineer who began my professional education studying energy systems [1]. Confident in the capabilities of solar energy, I later introduced a method that uses a solar-activated semiconductor to destroy waterborne viruses [2]. The sun is our greatest resource, and Arizona's unique assets and talented residents can readily be engaged to create valuable technologies that utilize it. The SunZia transmission project would jeopardize these economic prospects by marring our renowned landscape and subsidizing non-Arizona interests (SunZia is tailored to the solar and wind energy ambitions of New Mexico [3]; Florida Power & Light Group owns New Mexico's largest wind farm [4]; Colorado, Wyoming, and others would profit from SunZia's expansion of the territory of their energy sales [5]).

In response to Project Zia, SunZia was conceived in 2006 to sell power from New Mexico and the Bowie Power Station to western markets such as Phoenix, Los Angeles, and Las Vegas [5,6,7]. The gas-fired billion-watt Bowie station will emit a daily amount of carbon dioxide equal to that produced by burning more than a million gallons of gasoline [8]. Not surprisingly, SunZia and Bowie are promoted, managed, and financed by the same group, and they petitioned the Federal Energy Regulatory Commission to permit SunZia to transmit the non-renewable power of Bowie and other generators [9,10]. In effect, their petition also asked that 86% of SunZia's transmission rights be allocated to a New Jersey-California equity firm, a Louisiana construction company, a major foreign-based oil company, and a Colorado-New Mexico-Wyoming-Nebraska electric cooperative [11]. Only 14% was requested for Arizona electric utilities [12]. Thus, it seems the name "SunZia" was selected, and the renewable energy option was included, to muster public support by wrapping this otherwise unmarketable project in a green package. This scheme also enables New Mexico to unload the cost of its wind-generated electricity onto Arizona.

The expense and unreliability of wind-farm electricity is evidenced by New Mexico's desire to export this energy rather than consume it. Wind power is a highly inefficient use of transmission line capacity, and it must be fed into a transmission system that predominately carries power from stable sources (such as gas or coal) so that its unpredictable variability can be tolerated. Having these unacceptable flaws, wind farms exist only because state and federal taxpayers are forced to help pick up the tab [13,14]. Furthermore, with Arizona's abundant solar energy, it would be foolish to subscribe to New Mexico's wind endeavors. The best wind farms produce about 5 kilowatts per acre, or 0.03 kilowatt-hours per square meter per day [15]. As a SunZia map shows, the sun offers 250 times more power to Arizona land at 7.5 kWh/m^2/day [16].

The future belongs to innovations that give us full use of sunlight's tremendous potential. Ill-conceived ventures like SunZia should remain in the past. Instead of serving that harmful project, Arizona should focus on originating the technology needed to tap the wealth of solar resources with which it is blessed.

Jon C. Sjogren
Tucson

1 Enclosure: Cited References and Contact Information

- Enclosure for Jon C. Sjogren's May 3, 2010 Sunzia Scoping Comment to BLM -

Cited References:

[1] University of Arizona: BS Mechanical Engineering, MS Civil Engr, PhD Chemical/Envr Engr
[2] http://aem.asm.org/cgi/content/abstract/60/1/344
[3] http://www.blm.gov/nm/st/en/prog/more/lands_realty/sunzia_southwest_transmission.html
[4] http://www.pnm.com/systems/nmwec.htm
[5] http://www.westconnect.com/filestorage/swat_project_zia_081706.pdf
[6] http://www.sunzia.net/pdf/SWAT_091306.pdf
[7] http://westconnect.com/filestorage/swat_sun_zia_status_101806.pdf
[8] Estimate is based on 24-hr operation of 1000 MW gas-fired power plant, 1135 lb CO_2 per MWh (ref: http://www.epa.gov/rdee/energy-and-you/affect/natural-gas.html), 19.4 lb CO_2 per gallon of gasoline (ref: http://www.epa.gov/oms/climate/420f05001.htm): 24×1000×1135÷19.4 = 1.4 million gallons of gasoline per day.
[9] http://www.southwesternpower.com/southwestern_power_group_project_listing.html
[10] http://www.sunzia.net/pdf/012910_FERC%20petition.pdf
[11] 40%, Energy Capital Partners (whose founder and partners are formerly of Goldman Sachs), Short Hills, NJ, and San Diego, CA; 40%, MMR Group, Baton Rouge, LA; 5%, Royal Dutch Shell, The Netherlands; 1%, Tri-State Generation and Transmission Association, Westminster, CO.
[12] 13%, Salt River Project, Tempe, AZ; 1%, Tucson Electric Power, Tucson, AZ.
[13] http://www.wind-watch.org/documents/wp-content/uploads/Schleede-High-Cost-Low-Value-Electricity-from-Wind.pdf
[14] http://www.wind-watch.org/documents/wp-content/uploads/schleede-windtaxbreakssubsidiesfortwooilcompanies.pdf
[15] http://www.heartland.org/policybot/results/24041/Pickens_Plan_Fails_to_Account_for_Limitations_on_Wind_Power.html
[16] http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/more/lands_and_realty/sunzia/sunzia_maps.Par.41410.File.dat/WREZ-sunzia-corridor-map.pdf

Contact Information:

Jon C. Sjogren
110 W. Meadowbrook Dr.
Tucson, AZ 85704-6712
(520) 297-8582
4sjogren@dakotacom.net

<pjs25@comcast.net>

06/07/2010 07:48 AM

To <nm_comments@nm.blm.gov>

cc

Subject Bosque del Apache

I am in favor of alternative energy such as wind power. I have come to terms with the visual effects this will have on the landscape; however, I am concerned about birds and their migratory routes. Please find another alternative route for the Sun Zia project. One that does not endanger the birds.
Respectfully,
Priscilla Saulsgiver

Robert Martin
<robert_martin@TNC.ORG>
06/10/2010 03:41 PM

To "[Adrian_Garcia@blm.gov]" <Adrian_Garcia@blm.gov>
cc
Subject TNC scoping comments

Adrian,
Here are the comments from TNC. Would you like a hard copy sent in the mail as well? Please contact me if you have any questions.
Thanks,
Robert

Robert Martin
NE NM Great Plains Coordinator
The Nature Conservancy in NM
robert_martin@tnc.org
(575) 799-5955
(See attached file: SunZia scoping TNC 06 10 10.pdf)

The Nature Conservancy
Protecting nature. Preserving life.™

The Nature Conservancy in Arizona
Phoenix Conservation Center
7600 N. 15th Street, Suite 100
Phoenix, Arizona 85020-4330
Tel: [602] 712-0048
Fax: [602] 712-0059

The Nature Conservancy in New Mexico
212 East Marcy Street
Santa Fe, NM 87501
Tel: (505) 988.3867
Fax: (505) 988.4905

June 10, 2010

Bureau of Land Management
Adrian Garcia, Project Manager
SunZia Transmission Line Project
P.O Box 27115
Santa Fe, NM 87502-0115

Re: Scoping Comments, SunZia Southwest Transmission Project EIS

Dear Mr. Garcia:

We appreciate the opportunity to provide additional comments on the new alternative routes being considered for the SunZia Southwest Transmission Project. This letter is to supplement the previous comments provided in our letters dated July 13 and December 11, 2009. These comments focus on sections of the new proposed routes in New Mexico. Our comments about the routes in Arizona remain unchanged from our previous letters. We respectfully offer these additional comments in response to the new alternative routes in New Mexico.

Conservation Interests of Greatest Concern in New Mexico

The middle Rio Grande Valley serves as one of the most important wildlife corridors for migrating and wintering waterfowl and waterbirds in the region. The several new proposed western routes are near, and in one case adjacent to, the Sevilleta National Wildlife Refuge. The Sevilleta NWR, much like the Bosque del Apache NWR, provides critical wintering and migratory stopover habitat for migrating waterfowl, Sandhill Cranes, and other species. We recognize that this new route was proposed in response to concerns about the transmission line location relative to the Bosque del Apache NWR and about defense activity and protection of the air space near White Sands Missile Range and Holloman Air Force Base. However, the migratory waterfowl, cranes, and other species in this area need unrestricted movement on a daily basis up and down the middle Rio Grande Valley to access food, water, and shelter. The siting of overhead transmission lines across or within this highly concentrated flyway, be it near either NWR or the private lands between them, could have significant negative impacts on crane and goose populations through collisions, displacement from limited suitable habitat, and disturbance of well-established migratory patterns. Therefore, The Nature Conservancy opposes any route in the vicinity of Sevilleta National Wildlife Refuge.

Summary

The Nature Conservancy recognizes climate change as one of the most critical threats to biodiversity around the world and understands the need for renewable energy sources to reduce greenhouse gases and lessen the impacts of global warming. The Conservancy also understands that the current infrastructure of energy transmission will need to be expanded to help connect the expanding renewable resources with energy consumers. Our primary objective is that energy transmission corridors be located to minimize their direct impact on biodiversity and to assure the net environmental benefit or renewable energy is positive. The Nature Conservancy would also like to emphasize that our "Development by Design" strategies of: (1) avoid, (2) minimize, and (3) mitigate may be helpful in the siting process of the SunZia Transmission Project.

The Nature Conservancy appreciates the opportunity to comment on the proposed SunZia Transmission Project. We look forward to working cooperatively with the Bureau of Land Management, the Environmental Planning Group, and Southwestern Power Group in addressing the conservation issues involved with this project. The Conservancy is willing and available to discuss these issues in more detail in the future if possible.

Sincerely,

Terry Sullivan
New Mexico State Director

Enc.:

COUNTY ADMINISTRATOR'S OFFICE
PIMA COUNTY GOVERNMENTAL CENTER
130 W. CONGRESS, TUCSON, AZ 85701-1317
(520) 740-8661 FAX (520) 740-8171

C.H. HUCKELBERRY
County Administrator

June 7, 2010

Adrian Garcia, Project Manager
Bureau of Land Management
P. O. Box 27115
Santa Fe, New Mexico 87502-0115

Re: **SunZia Southwest Transmission Project - Scoping Comments on Proposed Routes and Expansion of Study Area**

Dear Mr. Garcia:

This letter is part of Pima County's continued comments during the scoping period for the Environmental Impact Statement (EIS) for the SunZia Southwest Transmission Project. On April 2, 2010, County staff met with you and representatives of SunZia Southwest Transmission and EPG to discuss the proposed expansion of the SunZia Project study area and proposed routes in Pima County. The County not only continues to be concerned over the potential adverse impacts associated with the proposed alternative routes as currently depicted on the May 2010 SunZia Project Features map, but also the overall purpose and need for this project.

Again, we encourage the project evaluation team to gain a better understanding of the Sonoran Desert Conservation Plan (SDCP) and how the project routes would conflict with the goals and successes of the SDCP. A number of problems with routes proposed would have been clear had more consideration been given to the SDCP and all of the social and environmental planning that went into its development.

Project Scope and Need for Programmatic EIS

Because of the extensive nature of this project and the fact that generation of the power and transmission are inexplicitly linked, why is the construction of the power plant near Socorro, New Mexico and other proposed New Mexico locations not a part of the National Environmental Policy Act (NEPA) process and EIS process? It does not seem reasonable to separate the two when both are required to complete the project, unless this transmission

line is not needed by the plant and alternative delivery routes are possible. This is a circumstance that has not been made clear during the project scoping to date and which should have an impact on any decision to move the project forward based on the significant diversity of concerns raised by so many during the initial scoping process.

While the County applauds efforts that explore and develop renewable energy resources, it is important to also include a comprehensive assessment of where such resources should be appropriately located and where they can be developed with the least social, economic and environmental impacts. Ideally, this assessment would be done nationally, but in looking at it on a statewide or regional level, a comprehensive assessment of energy resources is needed to develop these resources in areas that do not threaten water resources, meet applicable environmental laws and policies, protect capital investments made in local areas for conservation and do not impact wildlife and scenic areas that support eco-based tourism in our local economy.

At the April meeting, there was discussion by proponents on the proposed substations required for the project and the need to reach stranded resources. A project representative clarified that investments have not been made and that there are no existing facilities on the ground or "stranded resources" at this time. The Southwest Area Transmission study (SWAT) was referred to as an impetus for this project. However, the document does not identify the need to tap wind resources from New Mexico to move through Arizona onto California. It states that California needs more renewable energy and power in general and identifies western Arizona and solar as a potential energy source. It was also stated that one motivation for this project was Tucson Electric Power Company's (TEP) renewable energy needs.

The Bureau of Land Management completed a regional assessment of potential renewable energy resource locations and set aside significant acreage in western Arizona for solar energy development. This should be considered as part of a needs assessment for the overall SunZia project. If it is found that energy resources can be generated in Arizona closer to the SunZia delivery destination, then the need for developing transmission lines from New Mexico across Arizona should be re-examined and new alternatives developed for public review prior to going forward with the EIS process.

Locally, Pima County has been cooperating with TEP on specific Tucson area projects that contribute to TEP's renewable energy targets and are on a much faster track toward completion than what is being proposed by SunZia. It makes programmatic sense from a financial and environmental impact standpoint to locate and develop an energy source closer to the target area, as opposed to locating and constructing 500 miles of transmission lines across two vast landscapes to reach an intended target area.

Considering the above, the County does not feel the SunZia project will significantly advance local efforts in renewable energy or that enough evidence and information has been provided to justify need for the overall project.

Proposed Transmission Line Routes through Eastern Pima County

While we feel this project should not be routed through Pima County given the above, the following comments are in response to your request for comments on the proposed alternative routes. As of the May 2010 maps on the BLM website, there are primarily 3 transmission line corridors in Pima County that are of concern. These routes run through the San Pedro River Valley, the Altar and Avra Valleys, and the Cienega Creek Corridor. Each area has unique characteristics that would be adversely impacted with irreversible consequences.

1. San Pedro Valley Transmission Line Corridor. I have attached my February 17, 2010 letter to you regarding the modified alternative routes and subsequent elimination of the route through the Bingham Cienega Natural Preserve. While elimination of this route is supported, the County expressed continued concerns over the proposed alternative route cutting through County managed State grazing lease lands that are part of the A7 Ranch purchased with voter-approved bond monies. Concerns include the route cutting through important conservation areas, wildlife travel corridors, major A7 Ranch roads and pastures. The County manages the ongoing ranching operations, while conserving and protecting the ecological values of the lands. Please refer to the attached letter for complete comments on this transmission line corridor.

2. Altar Valley, Santa Cruz River Valley and Avra Valley Transmission Line Corridor. The SunZia Southwest Transmission project has identified several alternative routes through Avra Valley, Santa Cruz River Valley and Avra Valley subject to a feasibility study that may impact the County's Tucson Mountain Park and/or the Tucson Mitigation Corridor and significant cultural resources in these areas. Issues of concern regarding Routes F100, F104, F330, F340, F350, F360 and others in this area, as identified on the SunZia May 2010 Arizona Land Use Resources Map are as follows:

   Santa Cruz River Valley and Altar Valley Routes

   - The Santa Cruz Valley is archaeologically rich, with prehistoric and historic sites densely distributed throughout the valley forming concentrations of sites associated with the river and its major tributaries, including from south to north, Julian Wash, West Branch Santa Cruz, Rillito River, and Canada Del Oro. Some of the larger, extremely significant and vulnerable

prehistoric sites associated with the Santa Cruz River system include, from south to north, Julian Wash, West Branch, Hodges Ruin, Sunset Mesa, Los Morteros, and the Huntington Ruin. For example, the proposed route extending northward along the Santa Cruz River from the Irvington Road Substation potentially crosses numerous prehistoric sites, ranging from very large Hohokam villages, like Valencia Site, West Branch Site, and Julian Wash Site, to sites with important Archaic Period and Early Agricultural Period components, such as the Wetlands, Los Pozos, and Rillito Fan sites.

- Route F290 cuts across State grazing leases that the County manages for conservation as part of the Diamond Bell Ranch purchase. As stated in my letter regarding the San Pedro River Valley proposed route, it is the County's intent to acquire State Trust lands associated with our ranch acquisitions for long-term conservation. A large utility corridor would impact the effectiveness of those lands for conservation. We also have significant concerns that this route would require additional habitat impacts during and after construction that would potentially impact large acreages of endangered Pima Pineapple cactus habitat.
- The northern Altar Valley could be affected by a proposed route that portions of Brawley Wash, which contains rich concentrations of prehistoric and historic sites. Several important concentrations of sites have been identified in the SDCP as Priority Archaeological Site Complexes, including Gunsight PASC, southwest of the San Xavier Reservation lands, and Brawley Batamote PASC to the west-northwest of San Xavier lands. The Cocoraque Butte Complex, which includes important Archaic Period rock art and habitation components, also could be affected.

Avra Valley Routes

- Both Tucson Mountain Park (TMP) and the Tucson Mitigation Corridor (TMC) are part of the Pima County Conservation Lands System. The SDCP identified priority vulnerable species, cultural resources, special management areas and critical linkages that may be impacted by the SunZia Southwest Transmission Project. The project proponents are advised to consider the wealth of information available from the SDCP.

- There are several Pima County Code issues to consider. Sandario, Mile Wide, Kinney, and Gates Pass Roads are designated Major Scenic Routes by the Pima County Zoning Code and have views of the proposed SunZia project. The intent of this designation is to preserve and enhance the visual resources of the natural and built environment. SunZia routes within one mile of TMP are also in the Pima County Buffer Overlay Zone. One purpose

of the Buffer Overlay Zone is to foster wildlife habitat in the vicinity of Pima County's public preserves. Finally, much of the private land adjacent to TMP and the TMC is included in the Resource Transition land use category of the Pima County Comprehensive Plan, and development of such lands are to blend with the natural landscape and support environmentally sensitive linkages.

- In 2008, Pima County completed a Management Plan for TMP that addresses the Tucson Mitigation Corridor; lease properties such as the Arizona-Sonora Desert Museum (ASDM); and visual, biological, and cultural resource management. Management of the Tucson Mitigation Corridor is governed by a cooperative agreement between Pima County, Arizona Game and Fish Department and the Bureau of Reclamation. The Bureau acquired the TMC as partial mitigation for the Central Arizona Project, and in the Bureau's April 26, 2010 correspondence to BLM, they clearly oppose use of the TMC for the SunZia Southwest Transmission Project.

  According to the TMP Management Plan, 1.4 million people visit the park on an annual basis not including drive through commuters. 870,000, or 62 percent, visit the world renowned ASDM, Gates Pass Overlook and the other park pull outs. ASDM, Gates Pass Overlook and many of the park roads and trails incorporate a view to the west of the same iconic Sonoran Desert landscape proposed for the construction of potentially two 190-feet high, 500kv transmission lines by SunZia. Negative visual impacts associated with this project may result in negative impacts to the multi-million dollar tourist industry of southern Arizona.

- In their April 16, 2010 letter to BLM, Saguaro National Park refers to wildlife habitat loss and fragmentation as one of the reasons they oppose SunZia routes adjacent to Saguaro National Park. Pima County is committed to the expansion of biological connections between TMP and other natural resource areas. A proposed 1,000-feet wide right of way for the SunZia Southwest Transmission project will compromise the intent of the existing TMC biological connection to Saguaro National Park, the Brawley/Black Wash Complex and the mountain ranges of the Ironwood Forest National Monument to the west.

- The Pima County Board of Supervisors adopted resolutions in opposition to similar past projects, notably the 2000 Public Service Company of New Mexico (PNM) Sonora – Arizona Interconnection Project and the 2007 Arizona Department of Transportation Interstate 10 Bypass. In addition, a

2007 TEP utility corridor proposal was opposed by Pima County. Pima County has a strong and consistent track record of opposing utility and transportation corridors that impact, are adjacent to or bisect TMP. Should the SunZia Southwest Transmission project continue proposing the Avra Valley Routes noted above, similar opposition can be anticipated.

3. Cienega Valley Transmission Line Corridor

SunZia Southwest Transmission project has identified several alternate routes through the Cienega Valley subject to feasibility study that may impact Saguaro National Park East, the Coronado National Forest and most directly the County-owned Bar V Ranch and riparian properties including the County's Cienega Creek Natural Preserve, designated an Arizona Heritage Water. Issues of concern regarding Routes F20, F30, F40 and F60 as identified on the SunZia May 2010 Arizona Land Use Resources Map. Specifically, Routes F20, F30 and F40 have significant, direct impacts on County lands purchased with public dollars to protect riparian corridors and provide wildlife linkages coinciding with these routes.

The following comments pertain to the routes proposed in the Cienega Valley:

- The Cienega Creek Natural Preserve along with National Park and Forest fall within the Pima County Conservation Lands System. The SDCP identified priority vulnerable species, cultural resources, special management areas and critical linkages in this area that may be impacted by the SunZia Southwest Transmission project.
- This area is adjacent or visible from Old Sonoita Highway, Marsh Station Road and Colossal Cave Road, all of which are designated Major Scenic Routes. In addition, Highway 83, a major tourist transportation area, would be impacted by these corridors.
- In addition, Saguaro National Park refers to wildlife habitat loss and fragmentation as one of the reasons they oppose SunZia routes adjacent to Saguaro National Park. Pima County is committed to the expansion of biological connections between Saguaro National Park East, the County's Cienega Creek Natural Preserve, the Coronado National Forest and other natural resource areas. A proposed 1,000-feet wide right of way for the SunZia Southwest Transmission project will compromise the intent of creating these natural wildlife linkages.
- Many historic resources are in the Cienega Creek and Rincon Creek areas, containing numerous important prehistoric sites and other historic resources marking milestones in the history of ranching in Pima County.

- There are several Pima County Code issues to consider. Cienega Creek and its tributaries will be impacted by the proposed SunZia project. The Pima County Board of Supervisors adopted riparian habitat maps generated as part of the SDCP. These maps identify various classes of habitat as well as Important Riparian Areas, which are among the highest preservation priorities within the County for its linkage, habitat, water resource, flood control and recreational values. The Floodplain and Erosion Hazard Management Ordinance as amended and Conservation Lands Systems require these areas to be avoided when possible, and impacts must be minimized and mitigated. For impacts to riparian habitat on Pima County-owned lands, mitigation requirements can be more restrictive, i.e., mitigation for any impacts. The EIS should utilize the County riparian classification maps as the best available data and include a description of how County habitat protection requirements will be addressed in all route planning and construction design within Pima County.
- The Pima County Board of Supervisors established Conditions, Covenants and Restrictions (CC&Rs) that pertain to nearly all of the land located within the Cienega Creek Natural Preserve (floodplain, floodway and flood erosion zone). Under these CC&Rs, **"all parallel installations, including without limitation sewers, are prohibited"**. Along with the Priority Vulnerable Species listed under the SDCP, the Preserve also has known populations of federally listed threatened and endangered species that could be impacted by the project. Theses species include Gila topminnow, Gila chub and the Huachuca water umbel.
- In addition, the majority of the lands in the Preserve are set aside as mitigation for the County's Multi-species Conservation Plan, which requires the properties be maintained with no degradation to the natural ecosystems. It appears the majority of the alternative routes through Cienega Creek run parallel with the Preserve and would not be permitted. Any routes that run perpendicular to the Preserve would be permitted on a case-by-case basis, and require written approval by the Pima County Regional Flood Control District. Any impacts within the Preserve will require mitigation in accordance with the specific mitigation requirements dictated by the CC&Rs.
- Under the leadership of the Arizona Game and Fish Department, an interdisciplinary and key stakeholder group has begun the process of identifying critical wildlife movement corridors in Pinal County. Similar projects are in various stages of development in other counties, including Pima County. The proposed SunZia routes would impact a number of these.

Summary

Most of the proposed alternative routes proposed by the SunZia project not only directly impact County-owned or managed lands that were acquired with voter-approved bond funds with the expressed intent to manage specifically to protect and preserve the natural and cultural resources for present and future benefits to the citizens of Pima County, but also unique and sensitive areas that will be significantly, adversely impacted with little if any benefit. Given that the transmission line routes proposed pass through our area to deliver energy products outside of the County and will provide only marginal benefits inside the County, and the issues raised by Saguaro National Park and the Bureau of Reclamation, Pima County is opposed to all transmission routes proposed through Pima County. Until all of our concerns are satisfactorily addressed, particularly the issue of a comprehensive regional assessment of actual need and where such resources should be appropriately located, the County remains opposed to the SunZia project.

Sincerely,

C.H. Huckelberry
County Administrator

CHH/mjk

Attachments

c: Nicole Fyffe, Executive Assistant to the County Administrator
Diana Durazo, Staff Assistant to the County Administrator

COUNTY ADMINISTRATOR'S OFFICE
PIMA COUNTY GOVERNMENTAL CENTER
130 W. CONGRESS, TUCSON, AZ 85701-1317
(520) 740-8661 FAX (520) 740-8171

C.H. HUCKELBERRY
County Administrator

February 17, 2010

Adrian Garcia, Project Manager
SunZia Southwest Transmission Project
Bureau of Land Management
P. O. Box 27115
Santa Fe, New Mexico 87502-0115

Re: **SunZia Southwest Transmission Project**

Dear Mr. Garcia:

Pima County has reviewed the January 11, 2010 modified alternative routes proposed in the San Pedro River Valley. While we support the proposed elimination of the route through the Bingham Cienega Natural Preserve, a wetland that hosts a population of the endangered Huachuca water umbel, among other species, the County still has serious concerns regarding impacts to lands the County acquired for conservation purposes in this significant biological corridor.

Using 2004 voter-approved bond monies, the County acquired Six Bar Ranch and the A7 Ranch in the San Pedro River Valley. Acquisition of the A7 Ranch included 6,800 acres of fee lands, the 34,000-acre State grazing lease, and the 80-acre Bureau of Land Management grazing permit. The County manages the ongoing ranching operations, while conserving and protecting biological and ecological values of the lands. The proposed Route C441/C201, as depicted in the January 11, 2010 San Pedro River Valley map, passes right through the County-held State grazing lease for A7 Ranch and cuts through a number of important conservation areas, wildlife travel corridors and cultural resources sites on the property that are large enough that minor adjustments to the line footprint will not adequately mitigate potential impacts.

The C441/C201 alignment also cuts across nearly all of the major A7 Ranch roads, pastures and key use zones. The impacts to our operation and conservation ranching approach could be compromised as a result. Placement of a new transmission line

inevitably results in increased public access across a landscape. No matter the steps taken, the lands become much more accessible and remain open because of the need to manage and repair the transmission lines and disturbances during construction that are never fully mitigated. All terrain vehicle impacts in this area are an increased concern when access points are created due to its proximity to Tucson. A prime example has been the Kinder-Morgan pipeline project's ongoing impacts to the County's Cienega Creek Natural Preserve and Bar V Ranch management and protection. Despite mitigation efforts by the company, impacts continue for the County to address with no long-term support or ability to reconfigure the impacts due to the constraints now placed by the location of the utility infrastructure corridor. Using existing rights of way and corridors would offer less immediate and long-term ecological impacts and helps address these concerns.

In summary, the County has made a significant investment and commitment to long-term conservation in this area similar to the Muleshoe Ecological Management Area in Cochise County. It has been the County's stated intent to acquire State Trust lands associated with A7 Ranch in the future and currently manages the property as a unit. For planning purposes, the County should be afforded consideration and protections similar to the Muleshoe area.

I respectfully request that Route C441/C201 be eliminated and existing rights of way and transmission routes be further evaluated and given higher priority.

Sincerely,

C.H. Huckelberry
County Administrator

CHH/mjk

Attachment

c: The Honorable Chairman and Members, Pima County Board of Supervisors
Tom Dabbs, Gila District Manager, Bureau of Land Management
Brian Bellew, Tucson Field Office Manager, Bureau of Land Management
Tom Wray, Project Manager, Southwest Power Group
Mickey Siegel, Project Manager, EPG, Inc.

RAÚL M. GRIJALVA
7TH DISTRICT OF ARIZONA

COMMITTEE ON NATURAL RESOURCES
Subcommittee on National Parks, Forests and Public Lands, Chair
Subcommittee on Water and Power

COMMITTEE ON EDUCATION AND LABOR
Subcommittee on Workforce Protections
Subcommittee Early Childhood, Elementary and Secondary Education

CONGRESSIONAL PROGRESSIVE CAUCUS
Co-Chair

Congress of the United States
House of Representatives
Washington, DC 20515-0307

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Washington, DC 20515
Phone: (202) 225-2435
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District Offices:
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Fax: (520) 622-0198

1455 S Fourth Avenue, Suite 4
Yuma, AZ 85364
Phone: (928) 343-7933
Fax: (928) 343-7949

http://grijalva.house.gov/

January 5, 2010

Mr. Ken Salazar
Secretary of the Interior
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

Dear Secretary Salazar:

I write to you today to express my concern regarding the proposed routes for the SunZia Southwest Transmission Project in Southern Arizona. The proposed action would bring two parallel 500 kilovolt high capacity electric transmission lines through the Lower San Pedro River Valley, from New Mexico to Arizona, by extending a high-tension power line with a 1000 ft. wide access corridor. It is my understanding that the Bureau of Land Management (BLM) supports the project.

The Lower San Pedro River Watershed remains ecologically intact, with a relatively pristine landscape in a rapidly growing region. The proposed transmission lines would damage the delicate San Pedro Valley from the inevitable development that would follow the corridor. Additional roads and infrastructure will fragment core habitat areas for several threatened and endangered species in the San Pedro River, its watershed and its major tributaries, including Hot Springs Canyon. Several properties in the watershed are used by state and federal agencies for mitigation projects for several bird and fish species. Water quality could deteriorate due to erosion of upland soils caused by new or expanded access roads for the SunZia project.

Public land managers and ranchers throughout the western states have had problems dealing with environmental and infrastructure damage done by ATV users. SunZia service roads would facilitate ATV access and off-road abuses that lead to additional soil erosion, plant destruction and damage to wildlife habitat.

The BLM holds a conservation easement on several properties in the area to protect its ecological and cultural values. However, running a 1000 ft. utility corridor through the area is inconsistent with the BLM's own stated conservation goals in the San Pedro Watershed. There are no sufficient mitigation options for the damage new roads and infrastructure development could do to this fragile area.

I encourage the Department of Interior and the BLM to look into rerouting the proposed transmission lines to the south of the San Pedro River Valley, along existing transmission routes, including along the I-10 highway. While I recognize that the growth in the Tucson and Phoenix areas has put a strain on our utility system, we must remain mindful of the impacts of the solutions that are offered – and pushing this onto our pristine, natural areas is not the solution.

If you would like to speak with me about the concerns I have raised, please do not hesitate to call.

Sincerely,

Raúl M. Grijalva
Chairman
Subcommittee on National Parks, Forests and Public Lands

cc: Bob Abbey, Director, Bureau of Land Management

Appendix E Mitigation Requirements for Utilities Within and Adjacent to the Cienega Creek Natural Preserve

Prepared By: David Scalero, Pima County Regional Flood Control District, October, 2009

Over the last several years, a number of companies have requested and been granted permits to enter the Cienega Creek Natural Preserve (Preserve) to perform maintenance or reinstallation of their utility lines on existing easements. In addition, the Tucson Electric Power Company (TEP) property that crosses Cienega Creek in T16S-R6E-14 is subject to significant vegetation removal to protect overhead power lines, which can affect the integrity of the Preserve. All of these maintenance requests have involved the disturbance of soils and vegetation, thus requiring on-site mitigation. Most of the projects have not been successful (i.e., reseeding of the AT&T fiber optic line) due to the lack of proper planning and follow up by the appropriate parties. However, recent success has provided County personnel (both Amy Loughner and I) with some guidance to promote proper mitigation on and adjacent to District lands. The following is a step-by-step process that is recommended for future utility requests within the Cienega Creek Natural Preserve:

1. Consult the existing management plan to see if there are any restrictions or conditions placed on the lands to be disturbed,
2. Work directly with a qualified botanist, ecologist, biologist, or other professional in the field of environmental protection with knowledge of plant physiology. Most utility companies will hire a consulting agency to do this work, as opposed to having someone on staff. County staff should require that a qualified person (or company) be contracted if the utility company has not done so already,
3. Request a set of plans and a brief (concise) description of the project,
4. Schedule and attend a field meeting with all parties (including NRPR) to discuss the project and proposed restoration plans. County staff should identify any plant species that should be avoided or salvaged during ground disturbance and discuss the criteria that will be included in the Special Use Permit (provided below). Pictures should be taken of the area for reference,
5. Provide NRPR staff with a detailed list of comments to include in the Special Use Permit that will be provided to the utility company per the Cienega Creek Natural Preserve Management Plan. The list should include, but not be limited to, the following criteria:

    - Identify any restrictions and/or conditions identified in the management plan, if applicable
    - Keep all gates and fences closed during non-construction hours to prevent unauthorized vehicles from entering the Preserve; make sure area is secure post-construction
    - Limit the area of disturbance to that which is presented in the project plans and what was discussed during the field meeting
    - Identify and flag plants to be trimmed or salvaged
    - Notification of the County's native plant ordinance
    - Notification of any threatened and endangered species concerns

- Identification of the Floodplain Use Permit, if one is needed
- Request for a list of the plants/seeds that will be used for revegetation efforts and specifications on any mulch or hydroseed mixture that will be utilized
- Request a schedule of when construction/maintenance activities will be conducted
- Request for a project completion report, including photographs of the revegetated area,

6. Obtain a copy of the Special Use Permit once it has been completed and transmitted to the utility company,
7. Obtain the utility's project schedule, if not identified in the Special Use Permit,
8. Review the list of plants/seeds that will be used for revegetation of the site in relation to the native plants in the surrounding area and notify the utility's contact person of any discrepancies,
9. Review the project completion report to insure all revegetation work is satisfactory.
10. Conduct a post-project site visit to verify the integrity of the revegetation efforts, documented with photographs.

It is highly important to include all of the conditions within the Special Use Permit, as this will be the document to which the utility is responsible. This guide could also be useful for disturbances to other District-owned properties, even if no management plan is available.

SunZia Southwest
TRANSMISSION PROJECT

NATIONAL SYSTEM OF PUBLIC LANDS

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

1 of 4 pgs.

JUL 06 2010

SunZia Southwest Transmission Project
Environmental Impact Statement

NAME: Keith & Sue Waid

ADDRESS: HC66 Box 608

CITY: Mountainair, NM 87036 STATE ZIP

Organization (if applicable)

Add to mailing list ☒ Yes ☐ No

Withhold personal information* ☐ Yes ☒ No

Receive notification of EIS availability? ☒ Yes ☐ No

COMMENTS:

Please see attached letter dated June 13, 2010 from Keith and Sue Waid to SunZia SW Transmission Project c/o EPG, Inc. Also, Resolution No. 2010-45 Socorro County (2 pgs.)

The following individuals are in agreement with the aforementioned letter and would like to be incorporated into the EIS administrative record and on the mailing list for any future correspondence.

Mike Carson LINDA CARSON HC 66 BOX 611 MOUNTAINAIR, NM 87036-9419

John & Ramona Sims HC66 Box 604 MOUNTAINAIR NM 87036

Ernest & Ronda Thompson HC66 Box 613 Mountainair, NM 87036

Leroy & Vivian Sisneros 9 Chupadero RD ABQ, NM 87036

Kristin Connell 509 N. Summit. Mountainair, NM 87036

Lola Harris Box 711 Mountainair, NM 87036

Rex Harris Box 711 Mountainair, NM 87036

H. Daniel Emeree H. DANIEL EMEREE PO Box 298 Mountainair, NM 87036

Antina Eshleman ANTINA ESHLEMAN HC 66 Box 532 Mountainair, NM 87036

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.

2

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

GPE
JUL 06 2010

SunZia Southwest Transmission Project Environmental Impact Statement

NAME: Continued

ADDRESS

CITY STATE ZIP

Organization (if applicable)
Add to mailing list ☑ Yes ☐ No
Withhold personal information* ☐ Yes ☑ No
Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

Signature	Print NAME	Print Address	Zip code
Cindy A. Hollenberg	Cindy A. Hollenberg	HC 66 Box 532 Mtnair	87036
Peggy Norton	Peggy Norton	PO Box 991 Mtnair	87036
Janet Pendlebury Graven	JANET PENDLEBURY GRAVEN	36 SAN LORENZO RD MTNR	87036
Robert G. Graven	ROBERT G. GRAVEN	" "	"
Zia Thompson	Zia Thompson	HC66 Box613 Mtnr Nm	87036
Heath Connell	Heath Connell	509 N. Summit Mountainair	NM87036
Oral Connell	ORAL CONNELL	509 N. Summit Mtnair	NM 87
Victor R Saiz	Victor R SAIZ	PO Box 17 Lagoya	87028
Irene M Saiz	Irene M Saiz	" " "	87028
Lawrence Foltzer	LAWRENCE FOLTZER	19688 HWY 60 Mountainair	87036
Keith Banks	KEITH BANKS	PO Box 369 San Antonio,	NM 87832

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

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SunZia Southwest
TRANSMISSION PROJECT

NATIONAL PUBLIC LANDS

JUL 06 2010

COMMENT FORM

U.S. Department of Interior
Bureau of Land Management
New Mexico State Office

SunZia Southwest Transmission Project
Environmental Impact Statement

Continued

NAME

ADDRESS

CITY STATE ZIP

Organization (if applicable)

Add to mailing list ☑ Yes ☐ No

Withhold personal information* ☐ Yes ☑ No

Receive notification of EIS availability? ☑ Yes ☐ No

COMMENTS:

Signature	Print NAME	Print Address Zip code
Patsy Lucero	Patsy Lucero	POB 400 Mtair. 87036
Reuben Garrison	Reuben Garrison	P.O.B 351 Mtair 87036
Suzan Brazil	Suzan Brazil	19202 W. Hwy 60 Mtair 87036
Randy Chilton	Randy Chilton	HC66 Box 569 Mtair. 87036
[illegible]	R.G. GRAVON	36 SAN LORENZO
Zella B Connell	Zella B Connell	503 N Summit Mtair 87036
[illegible]	MIKE PADILLA	603 WEST BROADWAY
Daisy Sanchez	DAISY SANCHEZ	HC66 Box 606
Johnny Sanchez	JOHNNY SANCHEZ	Mountainair

SEND COMMENTS TO:

SunZia Southwest Transmission Project | c/o EPG, Inc. | 4141 N. 32nd Street, Suite 102 | Phoenix, AZ 85018

**Copies of comments will be available for public review at the local BLM office during regular business hours. Individuals requesting their personal information be withheld from public review or from disclosure under the Freedom of Information Act must check "YES" in the appropriate box. Such requests will be honored to the extent allowed by law.*

June 13, 2010

JUL 06 2010 4

Concerned Citizens regarding SunZia SW Transmission Project
c/o Keith & Sue Waid
HC66 Box 608
Mountainair, NM 87036

SunZia SW Transmission Project
c/o EPG, Inc.
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

In order to least impact Socorro County's economic, environmental, cultural and wildlife resources, we are opposed to the following:

1) Any alternate transmission routes north of the proposed US 380 route.
2) Any alternative routes that traverse the Rio Grande River other than the Arrey, New Mexico crossing.
3) Any alternate routes along I-25 corridor and the Rio Grande River valley in Socorro County.

The following resources and subjects serve as a list of reasons for the removal of any alternate routes from further consideration; we also request your response to the potential impact on these resources by the two 500kv lines proposed by SunZia :

<u>Natural Environment</u>
Wildlife
Endangered and threatened wildlife (Sevilleta Refuge and Bosque Del Apache)
Ranchland/grazing land
Cattle, horses, wild horses, antelope, elk, birds, small mammals and reptiles
Plant life
<u>Human Environment</u>
Land Use
Ranching
Water/wells (for existing human and animal consumption)
Wilderness areas
National Monuments and parks-recreation
Military Air Space (Holloman and Kirtland AFB training flight zones)
Visual degradation
Electric magnetic field
Noise pollution
NM Designated Scenic By-ways
<u>Cultural Environment</u>
Archaeology
Prehistoric sites and petro glyphs
Historic Resources (Gran Quivera and Abo Ruins)
Native American Sites
Historic Trails

Respectfully yours,

Keith & Waid Sue Waid

Keith and Sue Waid

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BLISS
1 PERSHING ROAD
FORT BLISS, TEXAS 79916-3803

REPLY TO ATTENTION OF

June 8, 2010

RECEIVED
B.L.M.-MAILROOM
2010 JUN 28 AM 1:23
STATE OFFICE
SANTA FE, NEW MEXICO

2 6 09
DATE RECEIVED

Office of the Garrison Commander

Mr. Adrian Garcia
Project Manager, SunZia SW Transmission Project
Bureau of Land Management
New Mexico State Office
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

Dear Mr. Garcia:

Fort Bliss has reviewed the alternate routes proposed for consideration within the expanded project study area for the proposed SunZia Southwest Transmission Project as announced in the Bureau of Land Management (BLM) News Release dated March 29, 2010.

Fort Bliss supports the inclusion and evaluation of the alternate routes in the Environmental Impact Statement being prepared by BLM. The proposed routes in Lincoln, Torrance, Valencia, and Socorro Counties could potentially minimize detrimental impacts to training and operations at Fort Bliss and other military installations in New Mexico.

Fort Bliss looks forward to participating in the process as a Cooperating Agency and supporting BLM's efforts to select a route that accommodates the project while minimizing adverse impacts to military operations. Fort Bliss remains committed to working with the BLM and other military installations in a cooperative effort to find a solution that works for all stakeholders.

My points of contact for this project are Mr. Alfredo J. Riera, Director of Public Works, 915-568-6200, alfredo.j.riera@us.army.mil; and Mrs. Vicki G. Hamilton, Division Chief, Directorate of Public Works, Environment Division, 915-568-2774, vicki.g.hamilton@us.army.mil.

Sincerely,

Joseph A. Simonelli, Jr.
Colonel, US Army
Commanding

Received by BLM on 4-21-2010

Joyce Gates

We do not want these transmission lines anywhere near our land at Windmill Ranches - We have lots 88 + 89 + our daughter has lot 86 + our son lot 87 - None of us want these lines

Sincerely

Bill + Joyce Gates
1013 Utah Street
Clovis, NM 88101
575-762-5022

2009 DATE RECEIVED

Colorful Images
© Westcourt Art & Design

Bureau of Land Management =
I am strongly opposed to the Sun Zia Project through the San Pedro Valley and Aravaipa watersheds. These precious wilderness sites are home to an immense and irreplacable array of wildlife and unique botanical species.
Conservation is called for, NOT destruction.

epg
DATE RECEIVED

Virginia Tench
5787 N. Cascabel Rd
Benson, AZ 85602

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed high-power transmission route through Arizona's wilderness areas, including both Aravaipa and San Pedro. Our wilderness areas should not be sacrificed in order to provide an energy source for other states. Arizona residents will benefit minimally from this plan, while bearing the brunt of the environmental impact.

SunZia needs to abandon any plan to construct transmission lines through the Aravaipa (or any other Arizona wilderness area). Routes through Tucson using existing infrastructure corridors are available and would have far less impact on the environment. It is an outrage that a so-called "green" energy project would destroy millions of acres of pristine Arizona.

Joan Moore — Signature

6/4/2010 — Date

DATE RECEIVED

Name & City: Joan Moore
Oracle, AZ

Bureau of Land Management =
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R. John Medley 06/06/16

Signature Date

Name & City: R. JOHN MEDLEY
ORACLE, AZ 85623

DATE RECEIVED

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Jane Garrett June 5, 2016

Signature Date

Name & City: Jane Garrett Oracle Arizona
(north of

DATE RECEIVED

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W E Busse 6/05

Signature Date

Name & City: W E Busse
Oracle Az

epg DATE RECEIVED

To Whom It May Concern:

I am writing to voice my opposition to SunZia's proposed high-power transmission route through the Aravaipa Valley, or through any other Arizona wilderness area. Our state's wilderness areas should not be sacrificed in order to provide an energy source for other states. Arizona residents will benefit minimally from this plan, while bearing the brunt of the environmental impact.

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Jerry Iser June 6, 10

Signature Date

Name & Ci

Mr. & Mrs. Jerry Iser
90187 E Aravaipa Rd.
Winkelman, AZ 85192-9769

epg DATE RECEIVED

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Peggy M White 6-5-10

Signature Date

Name & City: JEP O. WHITE, GLOBE AZ.
BORN ON ARAVAIPA 3-23-23

DATE RECEIVED

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David [illegible] 06/06/16

Signature Date

Name & City: DAVID [illegible]
SAN MANUEL

DATE RECEIVED

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M. H. Dixon — June 6 2010

Signature — Date

epg DATE RECEIVED

Name & City: Mark H. Dixon
San Manuel, AZ

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Casey Egan — 6-5-10

Signature — Date

epg DATE RECEIVED

Name & City: Casey Egan
Oracle, AZ

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Signature — Date

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Evaline J. Auerbach 6/5/10

Signature Date

Name & City: Evaline J. Auerbach
Oracle, Arizona

epq DATE RECEIVED

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Barbara Walss 6-5-10

Signature Date

Name & City: BARBARA WALSS
ORACLE, AZ

epq DATE RECEIVED

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ORACLE

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Donald Reil 6/5/10

Signature Date

Name & City: Donald Reil
Saddle Brooke

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Brittania Penica 6-5-10

Signature Date

Name & City: Brittania J Penica
Mammoth, AZ

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Deborah Hamos 6·5·10

Signature Date

Name & City: 1390 W. Rockcliff Way
PO Box 1581
Oracle, AZ 85623

DATE RECEIVED

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Quentin Branch 6-5-10

Signature Date

epg DATE RECEIVED

Name & City: QUENTIN Branch
Po Box 654 Oracle Az 85623
1982 W. Linda Visa Rd.

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Karen Medley June 5, 2010

Signature Date

epg DATE RECEIVED

Name & City: KAREN MEDLEY
P.O. BOX 956
ORACLE, AZ 85623

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Karen Medley June 5, 2010

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Name & City: KAREN MEDLEY
P.O. BOX 956
ORACLE, AZ 85623

1430

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Name & City: Jeff Egan
Oracle

2010 JUN 7 DATE RECEIVED