

ATTACHMENT A3

APPLICATION COMPONENT 3 – SEGMENT 4 REROUTE

APPLICATION ITEM 7. Project Description

a) Type of system or facility:

One of the ongoing challenges of the SunZia Project has been the location of Segment 4, a segment of the proposed transmission line alignment north of the White Sands Missile Range (WSMR), an area referred to as the Northern Call Up Area (NCUA), which necessitated a plan for undergrounding approximately five miles of the transmission line (Bureau of Land Management [BLM] 2015, Section 3.5.2.6). The WSMR, approximately 3,200 square miles, is the Department of Defense's (DoD) largest domestic range providing support of missile development and test programs critical to national defense and security. The WSMR conducts very-low-altitude test-flight profiles for drones, missiles, and other unmanned vehicles launched from the WSMR or received from launches in other states. Areas to the north and west of the WSMR (referred to as "call-up areas") can be used by the WSMR temporarily if needed for specific missions that cannot be accomplished within the boundaries of the range. These call-up areas are made available to the WSMR pursuant to agreements with private landowners or stakeholders that otherwise typically occupy said areas. When missions arise that require access to these areas, these lands must be made available.

The NCUA, north of the WSMR, contains approximately 1.5 million acres comprising BLM, state, and private lands in Socorro and Torrance counties. Aside from missile testing in this area, airspace over the NCUA also is designated as and used for low-level flight operations and training by nearby Holloman and Kirtland Air Force Bases. To ensure that SunZia's activities in the NCUA do not impede WSMR's test capabilities, SunZia routinely coordinates with the WSMR and DoD. During late 2017, 2018, and 2019, SunZia and the DoD conducted numerous discussions about current and future test protocols that may be affected by the location of SunZia Project Segment 4 alignment of the 2015 Selected Route, and about potential alternative routes that could reduce or eliminate such impacts. Since the BLM's Record of Decision (ROD) was issued in January 2015, threats to our national security have increased to the extent that WSMR's testing activities have been escalated for testing new weapons and countermeasures to protect the nation and its allies. The WSMR soon will prepare an Environmental Impact Statement (EIS) to review environmental impacts associated with this increase in testing activities, which involves off-site launches that are received and recovered in the NCUA. The Assistant Secretary of Defense, Robert McMahon, issued a letter to SunZia in December 2018 reiterating DoD's concerns with Segment 4 of the 2015 Selected Route. Secretary McMahon acknowledged the national security benefits from reducing impacts on WSMR operations that could result from SunZia pursuing potential alternative routes that would relocate the Project's proposed transmission line and associated facilities from the WSMR NCUA.

Coincident with this was Pattern Energy's purchase of the permitted Western Spirit 345 kV Transmission Line (Western Spirit) Project located north of the 2015 Selected Route in Segment 4 of the SunZia Project. Pattern Energy has a formal agreement with SunZia to use the SunZia Project as the primary transmission system for the electricity generated at Pattern Energy's wind-generation projects in eastern New Mexico, including the Corona area (Lincoln, Torrance, and Guadalupe counties) in proximity to the eastern end of SunZia Project. The development of the Western Spirit Project presented a new opportunity for siting a reroute of Segment 4 of the SunZia Project, partially in parallel with the Western Spirit Project, and would address the DoD's concern.

In response to these developments, SunZia proposes to reroute the alignment of Segment 4 from the relocated site of the SunZia East Substation to New Mexico Institute of Mining and Technology (New Mexico Tech), where Segment 4 joins with Segment 3. Rerouting the alignment of Segment 4 will require amendment of the existing right-of-way grant. In fall 2019, SunZia performed a siting study to develop and evaluate alternative routes for the affected portion of Segment 4 of the SunZia Project that would allow SunZia to address the DoD's concerns. In addition, based on the recent development of proposed wind-generation facilities, SunZia determined that relocating the planned 40-acre SunZia East Substation to the north near Corona in Torrance County would optimize the potential interconnection of future renewable resources, and allow an opportunity to co-locate SunZia Project Segment 4 with the Western Spirit Project transmission line by paralleling the Western Spirit Project where feasible. During the siting study, SunZia evaluated 16 preliminary alternative routes for Segment 4, of which three alternative routes and associated sub-routes are considered by SunZia to be feasible. SunZia's siting study report, which includes an explanation of the methodology used to conduct the study and evaluation and a description of the results, is provided in Attachment A3.1.

On March 27, 2020, SunZia submitted a right-of-way application to the BLM, United States Forest Service (USFS), and United States Fish and Wildlife Service (USFWS) addressing actions subject to amendment of SunZia's granted federal right-of-way. Since that time, comments from the USFS and questions from the USFWS regarding Segment 4 alternative routes prompted SunZia to evaluate options and develop responses. In addition, discussion with property owners and further advanced design and engineering since March resulted in localized refinements of Segment 4 alternative routes. Each of these is explained below.

Cibola National Forest. After reviewing the March 2020 right-of-way application, the USFS sent a letter to SunZia, dated June 15, 2020, denying SunZia's proposal to reroute the transmission lines across National Forest System (NFS) lands on the Magdalena Ranger District of the Cibola National Forest and National Grasslands (western portion of Segment 4 Alternative Route 1). The USFS stated the proposal would be in direct conflict with current and proposed training activities conducted by the Air Force and Marines on NFS lands and adjacent non-NFS lands. Both the Air Force and Marines practice low-level aerial reconnaissance, approach, landing, and departures of helicopters. Also, the military uses a drop zone for specialized C130 airdrop training. The Air Force and Marines are currently seeking expansion of their training activities and increased usage.

In late June 2020, SunZia and Pattern Energy contacted the DoD Military Aviation and Installation Assurance Siting Clearinghouse to better understand the potential conflicting land uses and develop a solution in collaboration with the DoD. Through those discussions, the DoD provided criteria for its operations. This allowed SunZia to develop an alternative transmission line route for DoD's review. On October 26, 2020, the DoD responded that if certain conditions are incorporated, the proposed modified route identified minimal impact on DoD's mission in the area and would allow military training operations to continue. The stipulations would include placing the transmission line a minimum of two nautical miles from designated military drop zones and helicopter landing zones, maintaining vertical structures below 100 feet in height, and fitting the transmission lines with reflective aviation obstruction balls in accordance with Federal Aviation Administration standards.

On November 4, 2020, SunZia provided the USFS with its revised route for the alternative that includes a crossing of a portion of the Cibola National Forest, as well as the DoD letter regarding the revised route. On November 23, 2020, the Cibola Forest Supervisor responded with a letter indicating that SunZia's

proposed route revision passes the Initial Special Use Screening criteria since the revised route would avoid conflict and interference with existing and future military training activities already authorized by on the Cibola National Forest (Figure A3.1). The modification is now included as part of the alternative route network addressed in Attachment A3.2. Addendum to Segment 4 Reroute Siting Study and Other Project Updates.

Sevilleta National Wildlife Refuge. Two alternative routes being considered for the proposed SunZia Project Segment 4 Reroute would co-locate with the existing transmission lines that pass north-south through the Sevilleta National Wildlife Refuge (NWR). Due to the limited width of the existing easements, only one new SunZia transmission line could be routed within each existing easement. SunZia would replace the existing transmission-line infrastructure with new transmission-line infrastructure that could accommodate the existing transmission line and a proposed SunZia 500 kV transmission line vertically on one set of structures in each existing right-of-way.

The SunZia Project Final EIS (BLM 2013) dismissed crossing through the Sevilleta NWR stating that a new transmission-line right-of-way crossing the Sevilleta NWR would conflict with the refuge management policy and restrictions that prohibit commercial uses, as stated in the Sevilleta NWR land grant deed¹ (BLM 2013, p. 2-31). However, co-location with existing transmission lines was not considered at the time. As explained in the siting study report (SunZia 2020a), co-location of the existing and proposed transmission lines in the existing rights-of-way is being analyzed by SunZia in more detail in light of:

- (1) The number of large, specially designated areas in the Segment 4 Reroute study area posing constraints to siting the proposed transmission lines and associated facilities.
- (2) The discussions with the DoD regarding the WSMR NCUA outlined above.
- (3) Rebuilding in existing rights-of-way would minimize adverse impacts and the proliferation of separate rights-of-way, which is consistent with the Federal Land Policy and Management Act.

The western-most right-of-way, held by El Paso Electric Company (EPE), has a 345 kV transmission line within a 100-foot easement. The eastern-most right-of-way, held by Tri-State Generation and Transmission Association, Inc. (Tri-State), has a 115 kV transmission line within a 50-foot easement.

Following initial review of the March 27, 2020 right-of-way application, USFWS requested additional information concerning the feasibility of the proposed colocation plan. In response, SunZia developed a preliminary design of a double-circuit, steel monopole (single pole) structure that would support the transmission lines (existing line and planned SunZia 500 kV transmission line), modeled locations for the structures in the terrain of the existing right-of-way, and prepared photo simulations and a simulated video over-flight to demonstrate feasibility.

The USFWS also enquired about potential surface disturbance outside of the existing easements. SunZia prepared a preliminary construction plan (SunZia 2020b) on a desktop review, which determined that construction is likely to require temporary disturbance outside the existing easement and temporary access-road improvements. Any surface disturbance outside of easement boundaries and the existing access road footprint would be reclaimed, resulting in no new permanent disturbance outside of the

¹ When the land for the Sevilleta NWR was conveyed to the United States, deed restrictions were included that restricted new commercial uses and prohibited the sale, transfer, or exchange of the NWR lands. The deed restrictions do not apply to the two existing transmission-line easements, which were established before the Sevilleta NWR was created.

easement. SunZia also is prepared to use existing roads and trails to the extent feasible, making improvements where needed to ensure safe conditions during construction, and returning the roads to as-close-to preconstruction conditions as is feasible.

Refinement of Alternative Routes (Segment 4). In addition, SunZia realty personnel have continued to coordinate with private landowners along the Segment 4 alternatives, which has resulted in some refinements to alignment of alternative routes on private lands with the intent of minimizing effects on private property and associated land uses. For example:

- Micro-siting of the route alignment along the first 65 miles (from SunZia East Substation) in New Mexico was in response to landowner preferences. SunZia benefitted from Western Spirit's landowner coordination. Much of this first 65 miles is parallel to the Western Spirit 345 kV transmission line (on state and private lands), and is the portion of the Project common to all Segment 4 alternative routes to the west.
- The route alignment in the area of the Abo Wash was micro-sited to avoid crossing through a subdivision development of more than 200 landowners.
- The route alignment in the Abeytas area was micro-sited to the east to avoid crossing through a subdivision development of more than 150 landowners.
- The route alignment in the Progresso area was micro-sited to avoid a private property at the request of the landowner.
- New Mexico Tech requested that the alignment be adjusted to avoid potential conflicts in an area where the Energetic Materials Research and Testing Center conducts ordnance testing and research.
- The route alignment in the area of Polvadera was micro-sited to avoid two inhabited residences.
- The route alignment in the area of Baca Canyon was adjusted by the Project engineers to an alignment in less challenging terrain.
- The route alignment in the area of Mesa Sarca was adjusted by the Project engineers to an alignment in less challenging terrain.
- The route alignment in the area of Arroyo Alamito was adjusted by the Project engineers to straighten the alignment for construction efficiency.

Mapping including these micro-sited areas on private lands are provided to the BLM with the updated right-of-way application.

Figure A3.2upd and the electronic file (Attachment_A3.1upd.zip) submitted with this application show the locations of the of the 2015 Selected Route and the three alternative routes and associated sub-routes being considered for the Segment 4 Reroute.

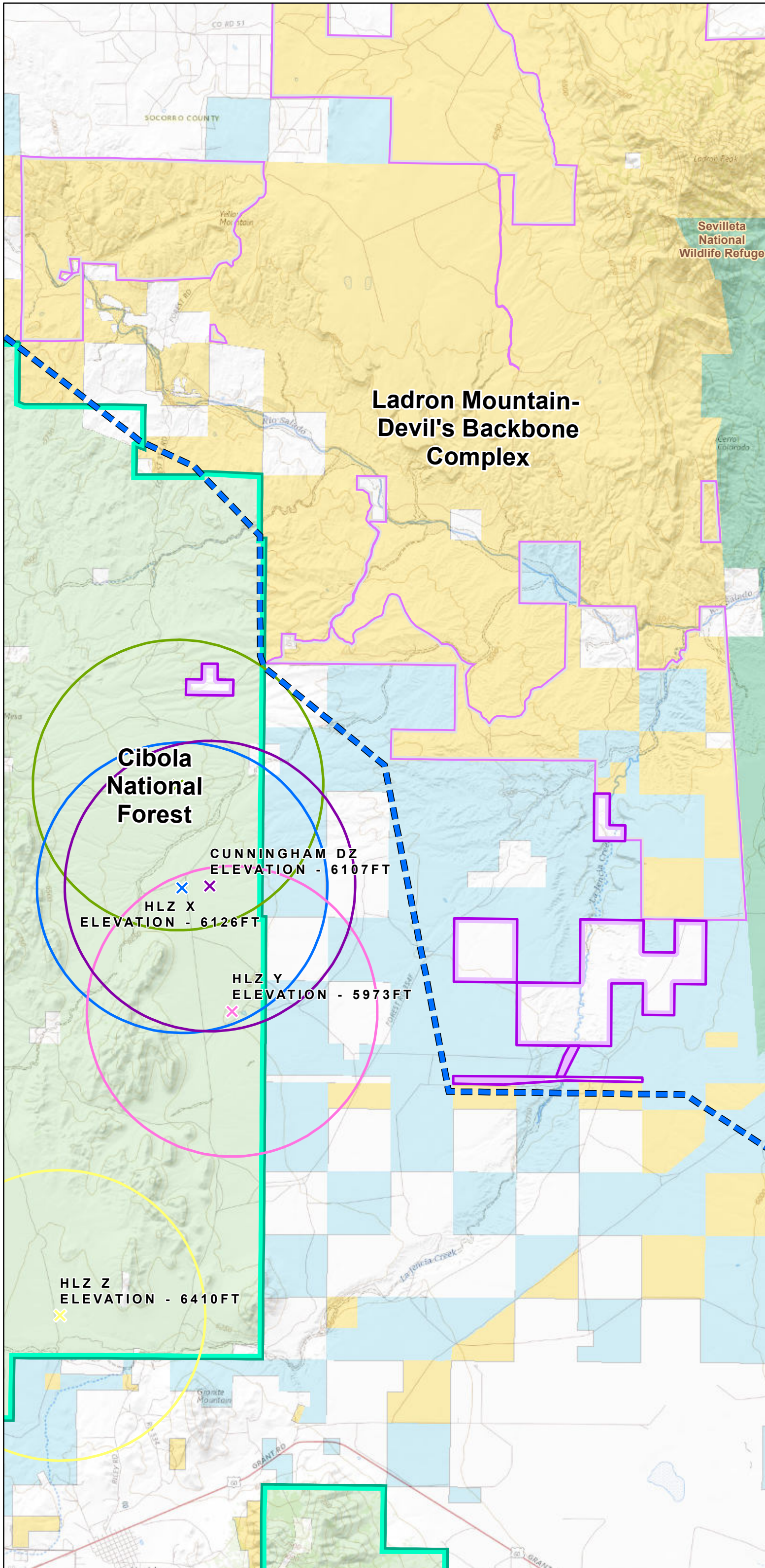
b) Related structures and facilities:

As described in 2013 Final EIS Section 2.4 and Plan of Development (POD) Section 3, Project facilities include substations, the two transmission lines (i.e., structure, hardware, conductor), ancillary facilities (communication regeneration stations), and a network of access roads needed to support transmission line construction, operation, and maintenance. The network of access roads includes temporary roads used only during construction and permanent roads needed for the life of the Project (refer to Attachment A2,

SunZia Southwest Transmission Project

Application Component 1-
Segment 4 Reroute

Figure A3.1
Route Adjustment Avoiding Military Training Areas



Proposed Route 1

Cibola National Forest

BLM Area of Critical Environmental Concern (ACEC)

Conservation Easement

Land Ownership

Bureau of Land Management

U.S. Forest Service

U.S. Fish and Wildlife Service

State Land

Private / Other

Military Aircraft Landing Zones

Cunningham Drop Zone (DZ)

Helicopter Landing Zone (HLZ) 26

Helicopter Landing Zone (HLZ) X

Helicopter Landing Zone (HLZ) Y

Helicopter Landing Zone (HLZ) Z

Military Aircraft Landing Zones 2 NM Buffer

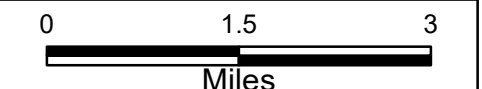
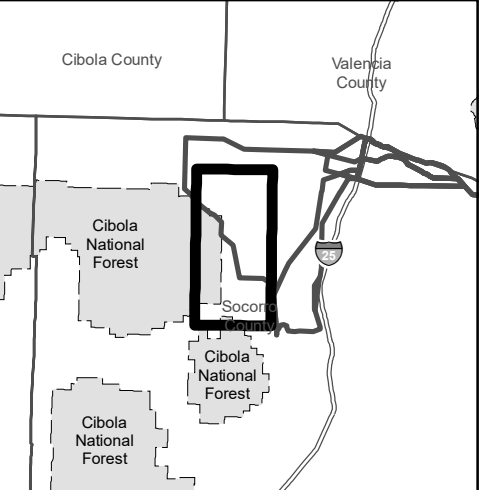
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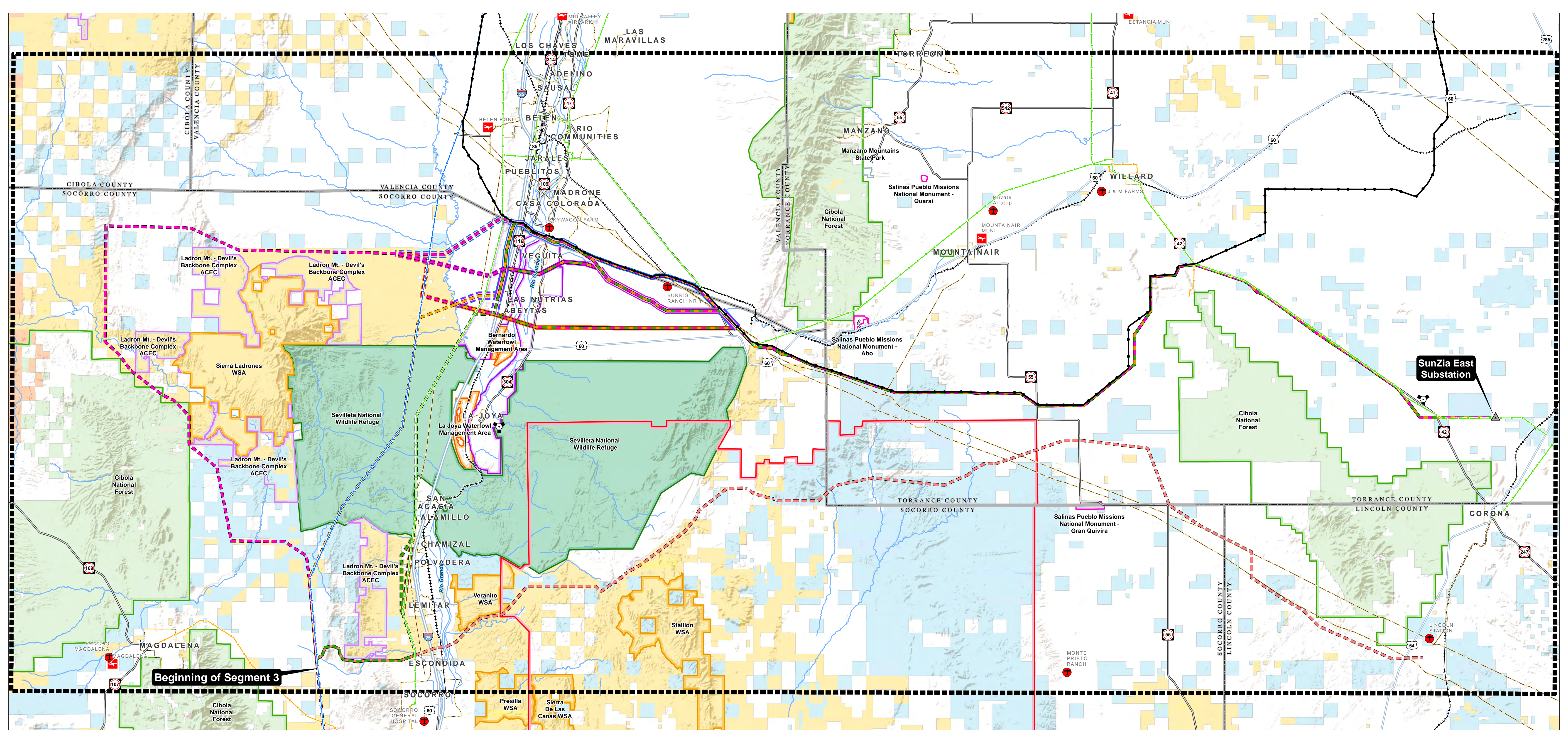
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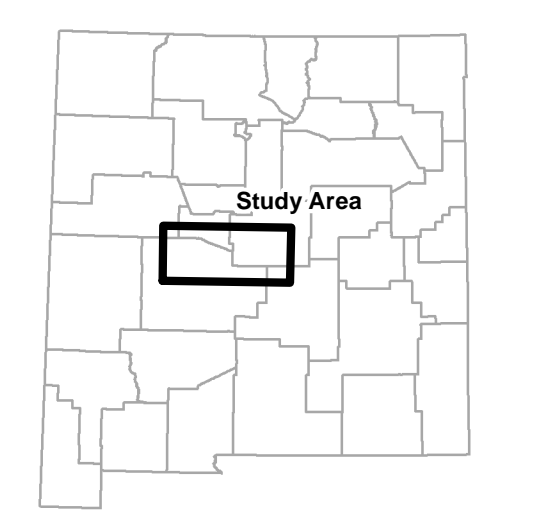


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Project Features	Alternative Routes	Existing Utilities	Transportation Features	Jurisdictional Areas	Hydrologic Features	Administrative Boundaries	BLM Area of Critical Environmental Concern (ACEC)	Ladd S. Gordon Waterfowl Management Complex
<ul style="list-style-type: none"> Planned SunZia East Substation 2015 Selected Route SunZia Segment 3 Study Area 	<ul style="list-style-type: none"> Route 1 Route 2 Route 3 Sub Route A-1 Sub Route A-2 Sub Route A-3 Sub Route A-4 Sub Route B-1 Sub Route B-2 	<ul style="list-style-type: none"> Planned Western Spirit 345 kV Transmission Line Existing 345 kV Transmission Line Existing 115 kV Transmission Line Existing 69 kV Transmission Line Oil / Gas Pipeline 	<ul style="list-style-type: none"> Interstate Highway U.S. Highway State Highway Railroad Public Airport Private Airstrip Navigational Aid (VORTAC) 	<ul style="list-style-type: none"> Bureau of Land Management National Park Service U.S. Forest Service U.S. Fish and Wildlife Service Tribal Land State Land Private / Other 	<ul style="list-style-type: none"> River / Stream 	<ul style="list-style-type: none"> City Limit County Boundary Socorro Special Zoning District Area White Sands Missile Range Northern Call Up Area (NCUA) 	<ul style="list-style-type: none"> BLM Area of Critical Environmental Concern (ACEC) BLM Wilderness Study Area (WSA) National Wildlife Refuge (NWR) 	<ul style="list-style-type: none"> National Forest National Monument New Mexico State Park

*All alternative routes use their corresponding sub route.



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Application Component 2 – Access Roads and Temporary Work Areas Outside the Granted Right-of-Way for more detailed information about access roads).

Several substations are planned for the Project, constructed on private land or state land, and therefore not included in the BLM right-of-way grant. Alternating current (AC) transmission line would interconnect the proposed SunZia East Substation at the eastern terminus with the Pinal Central Substation at the western end, and may include one or two intermediate AC substations. A direct current (DC) transmission line would not include interconnections with the intermediate substations, but would require an AC/DC converter station at the eastern terminus (SunZia East Substation) and a DC/AC converter station at the western end (SunZia West Substation). Typical design characteristics of a 500 kV are provided in the 2013 Final EIS Section 2.4.8.

Temporary work areas such as structure work area, construction yards, and wire pulling/tensioning/splicing areas, also are needed, and are addressed as part of Item 7.h below and in more detail in Attachment A2, Application Component 2.

c) Physical specifications (length, width, grading, etc.):

As described in POD (Section 3.3.1) and Right-of-Way Grant (Serial No. NM-114438, paragraph 2.a), the width of the permanent right-of-way for the transmission lines typically is a minimum of 400 feet on BLM-administered land², but may be up to 1,000 feet wide in areas where terrain poses engineering of construction constraints. The right-of-way must be sufficiently wide to accommodate safe separation distance between the two nominal 500 kV³ transmission lines.

Typical 500 kV transmission line facilities physical specifications are provided in 2013 Final EIS Section 2.4 and POD Section 3.0 (including Table 3-1). Construction activities are described in 2013 Final EIS Section 2.4.10 and POD Section 4.

The length of each alternative route and the sub-routes is provided in Table A3.1^{upd} along with miles of jurisdictions crossed. Note that the alignment of the first approximately 65 miles of each route is in common to the three alternative routes from the SunZia East Substation to a point where the alternative routes diverge.

Rebuild in Existing Easements on the Sevilleta NWR. There are two exceptions to the typical right-of-way width; that is, the two existing transmission line easements that pass through the Sevilleta NWR. The eastern-most of the two transmission lines crossing the Sevilleta NWR (north-south) is an existing 50-foot-wide easement with a 115 kV transmission line owned and operated by Tri-State. The western-most transmission line is an existing 100-foot-wide easement with a 345 kV transmission line owned and operated by EPE (refer to Figure A3.3.). As explained in the siting study for the Segment 4 reroute (SunZia 2020a), “the easements for the existing rights-of-way pre-date creation of the Sevilleta NWR and were imposed when the NWR was created.”

Since the Tri-State easement is the most constraining, SunZia prepared a preliminary design to determine the feasibility of replacing the existing 115 kV transmission line structures with double-circuit, monopole

² To accommodate private landowners, the right-of-way may be less than 400 feet and subject to specific engineering and design requirements. In such instances, the private landowner agreements will control the right-of-way width, location of the right-of-way on private land, and the design criteria and specifications.

³ The voltage level averages 500 kV, but may be slightly lower or higher from time to time depending on system load and operations.

(single pole) structures that support both the Tri-State 115 kV and the planned SunZia 500 kV transmission lines in a vertical configuration within the 50-foot-wide right-of-way.

The preliminary design showed that this permanent configuration is feasible. While much of the construction can occur within the existing easement, temporary structure work areas would fall outside the existing easements (Figures A3.4 and A3.5). Access for rebuild in the existing easements would use all existing roads/trails, new roads located within the existing easements, and new spur roads to allow access to the structures. New roads outside of the easements would be temporary. Where feasible, existing roads would be used in their present condition with only minor improvements (maintenance of wash-boarding/potholes). Existing roads and some new roads outside the existing right-of-way on land of the Sevilleta NWR would be needed as access to the right-of-way. Some existing roads would have to be improved for safe use during construction. Potential ground disturbance estimated for the two alternative routes is provided in Attachment C of the preliminary construction plan (SunZia 2020b).

Information regarding temporary work areas that would be needed for construction of these alternative routes is provided in Item 7(h).

All temporary and permanent Project facilities would be defined in the final POD for construction. After construction activities have been completed, all temporary work areas and temporary access would be fully reclaimed in accordance with the POD and USFWS stipulations that may be required.

Table A3.1 upd. Segment 4 Miles of Jurisdictions Crossed by Alternative Route

ALTERNATIVE ROUTE SUB-ROUTE	LENGTH (MILES)	FEDERAL			STATE	PRIVATE
		BLM	USFS ¹	USFWS		
2015 Selected Route ²	91.7	20.2	0.0	0.0	22.2	49.3
Alternative Route 1						
• Alternative Route 1 with Sub-route 1A-1	153.2	28.3	4.7	0.0	36.8	84.4
• Alternative Route 1 with Sub-route 1A-2	151.8	28.1	4.7	0.0	36.7	83.4
• Alternative Route 1 with Sub-route 1A-3	153.0	31.5	4.7	0.0	36.5	81.3
• Alternative Route 1 with Sub-route 1A-4	153.9	28.3	4.7	0.0	36.8	84.2
Alternative Route 2						
• Alternative Route 2 with Sub-route 2A-1	121.5	5.9	0.0	14.2	24.1	77.3
• Alternative Route 2 with Sub-route 2A-2	118.1	5.9	0.0	14.2	24.1	73.8
• Alternative Route 2 with Sub-route 2A-3	114.9	5.9	0.0	14.2	24.1	70.7
• Alternative Route 2 with Sub-route 2A-4	121.3	5.9	0.0	14.2	24.1	77.0
Alternative Route 3						
• Alternative Route 3 with Sub-route 3A-1 & 3B-1	125.7	9.0	0.0	11.6	20.1	85.1
• Alternative Route 3 with Sub-route 3A-1 & 3B-2	125.9	9.6	0.0	11.6	20.1	84.6
• Alternative Route 3 with Sub-route 3A-2 & 3B-1	122.3	9.0	0.0	11.6	20.1	81.7
• Alternative Route 3 with Sub-route 3A-2 & 3B-2	122.5	9.6	0.0	11.6	20.1	81.2
• Alternative Route 3 with Sub-route 3A-3 & 3B-1	118.1	9.0	0.0	11.6	20.1	77.5
• Alternative Route 3 with Sub-route 3A-3 & 3B-2	118.3	9.6	0.0	11.6	20.1	77.0
• Alternative Route 3 with Sub-route 3A-4 & 3B-1	125.5	9.0	0.0	11.6	20.1	84.8
• Alternative Route 3 with Sub-route 3A-4 & 3B-2	125.7	9.6	0.0	11.6	20.1	84.4
NOTES:						
* Mileages are approximate.						
¹ The sum of jurisdiction miles crossed is greater than the length of the alternative route due to approximately 1.0 mile of private inholding crossed just within the USFS administrative boundary. GIS registered both USFS and private lands.						
² The 2015 Selected Route is currently approved and federally permitted. Information about this route is offered for reference and not for comparison purposes.						
BLM = Bureau of Land Management; USFS = United States Forest Service; USFWS = United States Fish and Wildlife Service						

Since Project facilities have not yet been designed and locations of the transmission facilities are not known, potential temporary and permanent ground disturbance will be estimated for transmission line structures, access roads, and work areas as studies progress. An initial estimate of potential temporary and permanent ground disturbance is provided in Table A3.2*upd*.

Table A3.2*upd*. Acres of Initial Estimated Potential Disturbance by Segment 4 Alternative Route

ALTERNATIVE ROUTE	LENGTH (MILES)	TRANSMISSION LINE CONSTRUCTION		ACCESS ROADS ^{3,4}
		TEMPORARY DISTURBANCE ^{1,3}	PERMANENT DISTURBANCE ^{2,3}	
2015 Selected Route ⁵	92.1	272.2	91.2	469.6
Alternative Route 1				
• <i>Alternative Route 1 with Sub-route 1A-1</i>	153.2	438.9	92.5	683.2
• <i>Alternative Route 1 with Sub-route 1A-2</i>	151.8	435.0	92.4	679.4
• <i>Alternative Route 1 with Sub-route 1A-3</i>	153.0	438.3	92.5	683.8
• <i>Alternative Route 1 with Sub-route 1A-4</i>	152.9	438.0	92.5	682.6
Alternative Route 2				
• <i>Alternative Route 2 with Sub-route 2A-1</i>	121.5	420.3	97.5	479.2
• <i>Alternative Route 2 with Sub-route 2A-2</i>	118.1	411.0	97.4	466.2
• <i>Alternative Route 2 with Sub-route 2A-3</i>	114.9	402.3	97.4	453.9
• <i>Alternative Route 2 with Sub-route 2A-4</i>	121.3	419.8	97.5	478.6
Alternative Route 3				
• <i>Alternative Route 3 with Sub-route 3A-1 & 3B-1</i>	125.7	412.9	95.6	528.9
• <i>Alternative Route 3 with Sub-route 3A-1 & 3B-2</i>	125.9	413.5	95.7	530.9
• <i>Alternative Route 3 with Sub-route 3A-2 & 3B-1</i>	122.3	403.6	95.6	515.9
• <i>Alternative Route 3 with Sub-route 3A-2 & 3B-2</i>	122.5	404.2	95.6	517.9
• <i>Alternative Route 3 with Sub-route 3A-3 & 3B-1</i>	118.1	392.2	95.5	499.2
• <i>Alternative Route 3 with Sub-route 3A-3 & 3B-2</i>	118.3	392.7	95.5	501.2
• <i>Alternative Route 3 with Sub-route 3A-4 & 3B-1</i>	125.5	412.4	95.6	528.3
• <i>Alternative Route 3 with Sub-route 3A-4 & 3B-2</i>	125.7	412.9	95.6	530.4
SOURCE: Assumptions for the calculations are derived from the applicant's description of the Project (2013 Final EIS and final administrative POD).				
NOTES:				
*The acres of temporary and permanent disturbance reflect the potential disturbance associated with only the first phase transmission line. The area of potential disturbance associated with the second phase transmission line would be the same or similar to the first.				
**Calculations are approximate.				
¹ Temporary Disturbance: Areas of potential disturbance are estimated conservatively. Area of temporary disturbance associated with structure work areas (200 feet by 200 feet per structure; 4 structures per mile), construction yards (30-acre site located every 40 miles), wire pulling/tensioning/splicing areas (200 feet by 600 feet every 9,000 feet), and substation yards (20 acres). However, rebuilding within the existing easement on the Sevilleta National Wildlife Refuge temporary structure work areas (200 feet by 200 feet, 250 feet by 250 feet for dead-end structures [specific to these existing easements] would extend outside the existing easements. Refer to the Preliminary Construction Plan of Potential Co-Location with the Tri-State 115 kV and El Paso 345 kV Transmission Lines in the Sevilleta National Wildlife Refuge (SunZia 2020b).				
² Permanent Disturbance: Areas of potential disturbance are estimated conservatively. Area of disturbance associated with the area occupied by a structure (pad) (0.08 acre per structure; 4 structures per mile) and substation yards (85 acres). (Although a permanent facility, communication regeneration stations [100 feet by 100 feet, 0.23 acre] will be located inside substation yards and adjacent to the transmission line within right-of-way every 75 miles). Permanent disturbance along the two existing easements crossing the Sevilleta NWR will be within the existing easements. Refer to SunZia 2020b.				
³ Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, may not sum exactly.				
⁴ The column "Access Roads" does not at this time reflect access-road types (1) existing road – no improvement required, (2) existing road – improvements required, and (3) new road, or whether the roads are temporary or permanent. The area was calculated using a predictive model based on length of the transmission line intersecting with slope multiplied by an approximate 55-foot-wide buffer, which is the potential area of disturbance during construction. There are existing roads along each of the alternative routes that can be used; however, only a preliminary identification of the existing roads has been completed. Access types will be differentiated to the extent feasible for the environmental review.				
⁵ The 2015 Selected Route is currently approved and federally permitted. Information about this route is offered for reference and not for comparison purposes.				

d) Term of years needed:

The life of the SunZia Project is estimated to be 50 years, which is the term of the SunZia's Right-of-Way Grant (Serial Number NM-114438). Permanent facilities will be needed for the life of the SunZia Project; temporary facilities will be needed for the duration of construction, approximately three years.

e) Time of year of use or operation:

Construction, the period of most activity, will take place year-round except when weather or seasonal restrictions preclude construction activities. Once constructed and in service, the transmission lines will be operated year-round. Inspection and maintenance will be conducted bi-annually by helicopter or vehicular patrols (Final EIS Section 2.4.11.1).

f) Volume or amount of product to be transported:

The two SunZia 500 kV single-circuit transmission lines will deliver approximately a nominal 4,500 megawatts of electricity.

Activity during construction is described in POD Section 4.2 – Construction Workforce and Equipment, and vehicle use is described in the POD, Appendix A3: Transportation Management Plan.

g) Duration and timing of construction:

Project construction of the first transmission line is anticipated to commence in 2022 after notice to proceed has been issued by the BLM. Project construction will be completed over a period of approximately 30 months. At this time, it is anticipated that the first transmission line will be in service in 2024.

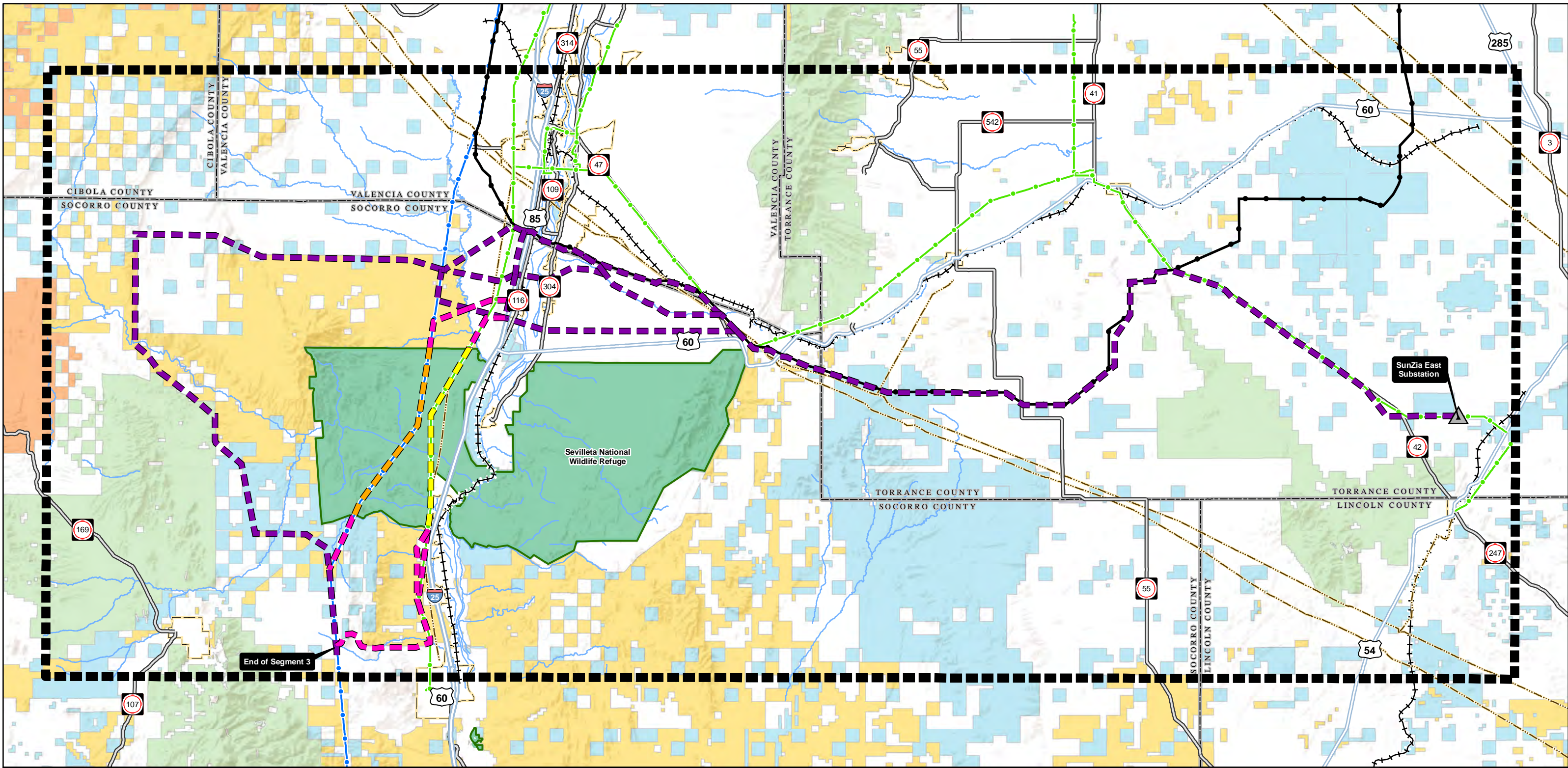
h) Temporary work areas needed for construction:

As described in POD Section 3 (including Table 3-1), temporary work areas would include construction yards (15 to 30 acres every 40 miles), structure work areas (200 feet by 200 feet; 0.9 acre) wire pulling-and-tensioning/splicing areas (2.8 acres every 18,000 feet; 1.8 acres every 9,000 feet). Work areas are located both within and outside the right-of-way.

In accordance with Stipulation 4 of the Right-of-Way Grant (Exhibit C), the final POD for construction will include detailed engineering and design of all Project facilities, including short-term construction and staging areas, wire pulling/tensioning/splicing sites, and other temporary work areas. Potential temporary ground disturbance associated with work areas is estimated for purposes of environmental review and initial estimates are included in Table A3.2*upd* in Item 7.c above. Additional detail about temporary work areas is provided in Attachment A2, Application Component 2.

Rebuild in Existing Easements on Sevilleta NWR. More specific to rebuilding within the existing easements on the Sevilleta NWR, temporary structure work areas (200 feet by 200 feet for tangent structures, 250 feet by 250 feet for dead-end or angle structures) would extend outside the existing easements (Figures A3.3 and A3.4).

The preliminary construction plan assumes helicopter assist would be allowable for conductor stringing activities. Final review and approval of helicopter use in the Sevilleta NWR would be required by the USFWS. Pulling-and-tensioning sites and snub sites would be approximately 400 feet by 100 feet and each site would require use of temporary access for equipment to access the site. Splice locations would be located along the easements.



Project Features

- Study Area
- Planned SunZia East Substation

Planned Right-of-Way Width

- 400 feet
- 200 feet
- 100 feet
- 50 feet

Existing Utilities

- Planned Western Spirit 345 kV Transmission Line
- Existing 345 kV Transmission Line
- Existing 115 kV Transmission Line
- Oil / Gas Pipeline

Hydrologic Features

- River / Stream

Transportation Features

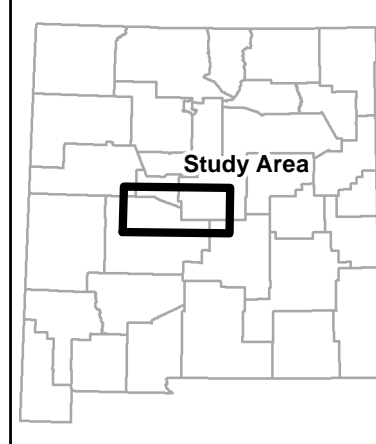
- Interstate Highway
- U.S. Highway
- State Highway
- Railroad

Jurisdictional Areas

- Bureau of Land Management
- U.S. Forest Service
- National Park Service
- U.S. Fish and Wildlife Service
- Tribal Land
- State Trust Land
- Private

Administrative Boundaries

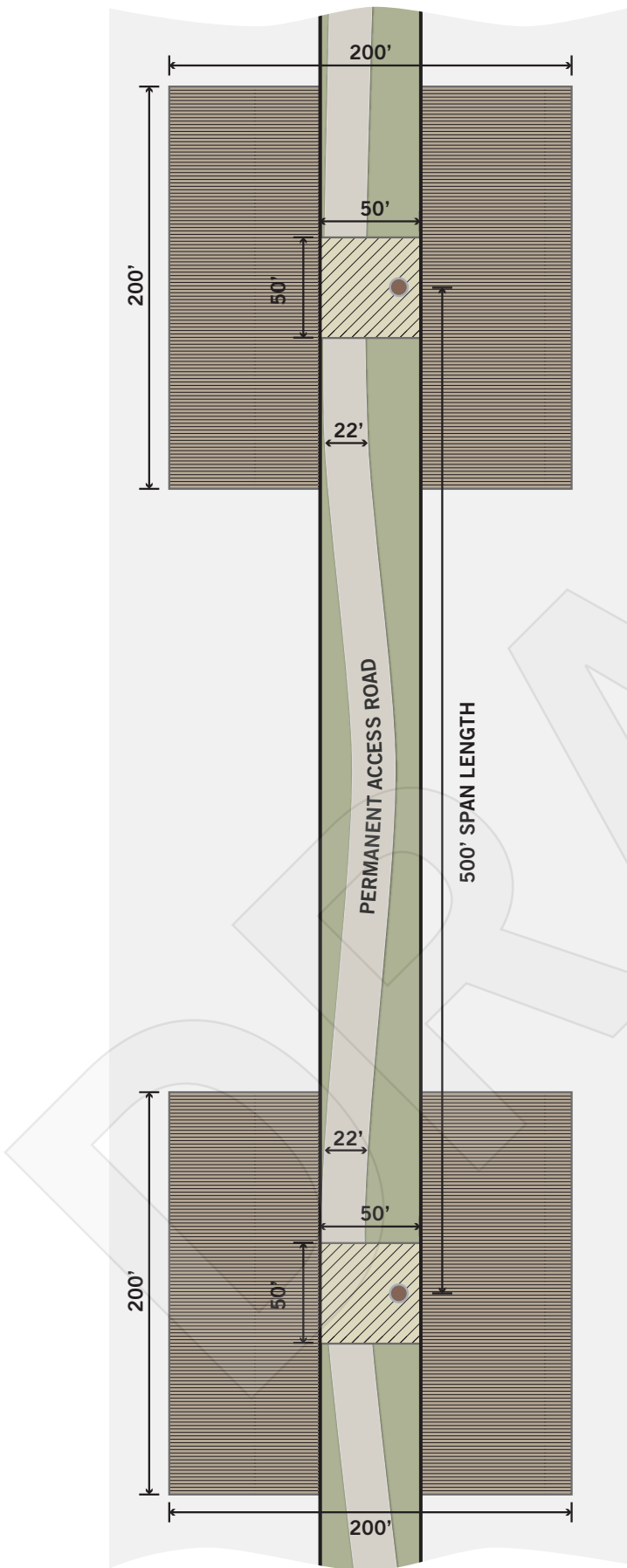
- County Boundary
- City Limit
- National Wildlife Refuge (NWR)



SunZia Southwest Transmission Project
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Figure A3.3
 Configuration of Alternative Routes Proposed
 Right-of-Way Widths



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LEGEND:

- TRI-STATE RIGHT-OF-WAY
- TEMPORARY WORK AREA
- PERMANENT DISTURBANCE
- PERMANENT ACCESS ROAD
- PROPOSED STRUCTURE

NOTES:

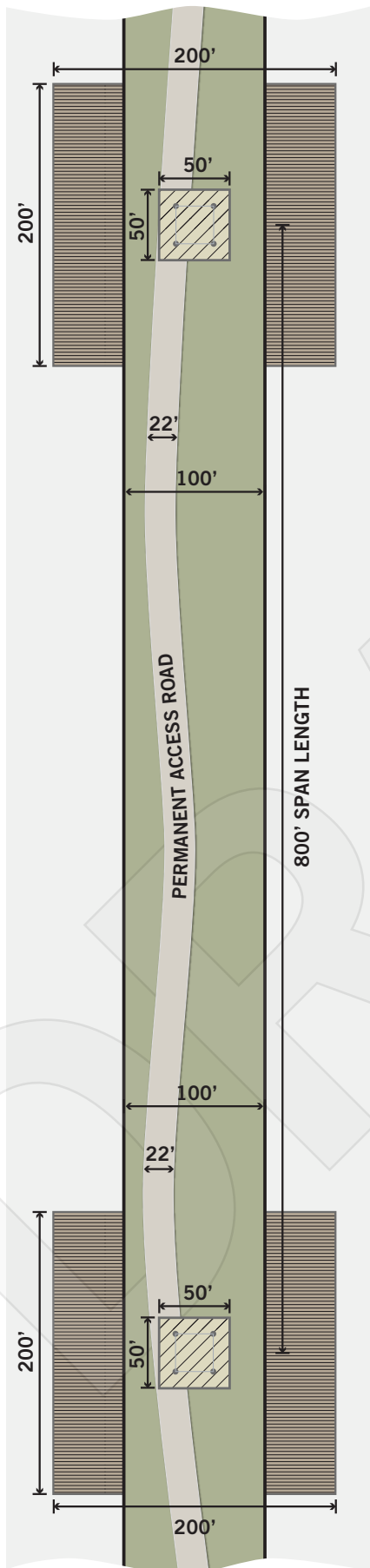
Limits of disturbance for access roads may be larger in steep terrain.

In some areas access roads may need to meander outside of the Right-of-way due to terrain.

Disturbance areas shown are preliminary and subject to change based on final design and engineering.

FIGURE A3.4. Typical Right-of-Way Configuration - Tri-State Easement

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LEGEND:

- EL PASO ELECTRIC RIGHT-OF-WAY
- TEMPORARY WORK AREA
- PERMANENT DISTURBANCE
- PERMANENT ACCESS ROAD
- PROPOSED STRUCTURE

NOTES:

Limits of disturbance for access roads may be larger in steep terrain.

In some areas access roads may need to meander outside of the Right-of-way due to terrain.

Disturbance areas shown are preliminary and subject to change based on final design and engineering.

FIGURE A3.5. Typical Right-of-Way Configuration - EPE Easement

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For rebuild of the Tri-State transmission line, construction yards would be located outside of the Sevilleta NWR. For rebuild of the EPE transmission line, one construction yard would be required to support helicopter construction to set structures in this part of the Sevilleta NWR (due to the location of the existing easements on the Sevilleta NWR).

Access for rebuild in the existing easements would use all existing roads/trails, new roads located within the existing easements, and new spur roads to allow access to the structures. New roads outside the existing easements would be temporary. Where feasible, existing roads would be used in their present condition with only minor improvements (maintenance of wash-boarding/potholes). Existing roads and some new roads outside the existing right-of-way on land of the Sevilleta NWR would be needed as access to the right-of-way. Some existing roads would have to be improved for safe use during construction.

Temporary and permanent Project facilities would be defined in the final POD for construction. After construction activities have been completed, all temporary work areas and temporary access would be fully reclaimed in accordance with the POD and USFWS stipulations that may be required.

REFERENCES

Bureau of Land Management (BLM). 2013. Final Environmental Impact Statement and Proposed Resource Management Plan Amendments for the SunZia Southwest Transmission Project. New Mexico State Office, Santa Fe, New Mexico. June.

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SunZia Transmission, LLC. (SunZia). 2020a. SunZia Southwest Transmission Project Siting Study for Segment 4 Reroute. Prepared for SunZia Transmission, LLC by POWER Engineers, March.

_____. 2020b. SunZia Southwest Transmission Project Preliminary Construction Plan of Potential Co-Location with the Tri-State 115 kV and El Paso 345 kV Transmission Lines in the Seville National Wildlife Refuge. (Proprietary and Confidential). Prepared for SunZia Transmission, LLC. by EC Source Services, LLC. for submittal to the U.S. Fish and Wildlife Service. July.