

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

**IN THE MATTER OF PUBLIC SERVICE COMPANY)
OF NEW MEXICO'S APPLICATION FOR A)
CERTIFICATE OF PUBLIC CONVENIENCE AND)
NECESSITY TO CONSTRUCT, OWN AND OPERATE)
THE RIO PUERCO TO PAJARITO TO PROSPERITY)
345 KV TRANSMISSION PROJECT)
)
)
PUBLIC SERVICE COMPANY OF NEW MEXICO,)
)
Applicant.)
_____)**

Docket No. 26-00000__

**DIRECT TESTIMONY
OF
LESLIE M. WATSON**

February 25, 2026

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LESLIE M. WATSON

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PUBLIC SERVICE COMPANY OF NEW MEXICO

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I. INTRODUCTION AND PURPOSE

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Q. Please state your name, position, and business address.

A. My name is Leslie M. Watson. I am an Environmental Planning and Permit Project Manager for PNMR Services Company. My business address is 2401 Aztec Road NE, Albuquerque, New Mexico 87107. I am testifying on behalf of Public Service Company of New Mexico (“PNM” or “Company”).

Q. Please summarize your educational background and professional qualifications.

A. My educational background and professional experience are summarized in PNM Exhibit LMW-1.

Q. Please describe your responsibilities as an Environmental Planning and Permit Project Manager.

A. I am responsible for environmental reviews of PNM projects. For this project, my participation has included supporting public and stakeholder outreach, oversight of and review of environmental and cultural surveys, and preparation of associated environmental documents. My work assignments include providing environmental impact analysis and permitting services for the maintenance and construction of electric transmission lines and substations. In that role, I review projects for potential impacts on natural and cultural resources and the need for regulatory permits or approvals; and permit compliance to support construction activities. This includes managing environmental consultant contracts and environmental consultants contracted to support construction activities.

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1 **Q. Please state the purpose of your Direct Testimony.**

2 **A.** The purpose of my testimony is to describe the environmental studies being conducted for
3 the Rio Puerco to Pajarito to Prosperity 345 kV transmission project (the “Project”) and
4 the best management practices PNM will use during project construction and operation.
5 For a major construction project such as this, undertaking a variety of resource studies and
6 applying best management practices helps avoid or minimize potential effects. These best
7 management practices are included in PNM Exhibit LMW-2, Appendix B.

8

9 **II. OVERVIEW OF PROJECT PLANNING AND DEVELOPMENT**

10 **Q. Please provide an overview of the planning development process for the Project.**

11 **A.** Once the need for the Project, as discussed further in PNM witness Erfan Hakimian’s
12 Direct Testimony, was identified, PNM conducted a routing study. The routing study
13 identified and compared various routes that met PNM’s requirements to increase
14 transmission capacity and enhance the electrical system reliability and resiliency in the
15 Albuquerque metro area. The routing study identified a network of geographically distinct
16 route options comprised of interconnecting segments that connect the Project endpoints,
17 the Rio Puerco and Pajarito substations. Resource data, surface water, vegetation, wildlife
18 habitat, and land use including existing gas infrastructure, transmission and transportation
19 corridors were mapped to aid in the review of each route. PNM reviewed the routes during
20 numerous meetings and added or modified routes to reduce potential impacts on existing
21 and planned land uses, as well as environmental and cultural resources.

22

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1 PNM updated the routing study and identified two routes that meet PNM’s requirements
2 to increase transmission capacity and enhance the electrical system reliability and
3 resiliency in the Albuquerque metro area. The two routes are described in the Plan of
4 Development (“POD”), included as PNM Exhibit LMW-2.

5
6 During project meetings and meetings with stakeholders, PNM developed the Proposed
7 Route described in PNM Exhibit LMW-2 to avoid or reduce potential impacts on
8 environmental, cultural and existing or planned land use during construction and operation
9 of the Project. The Proposed Route is a combination of the two routes described in the
10 updated routing study and illustrated in Figure 1-2: PNM Proposed Route in PNM Exhibit
11 LMW-2. The Proposed Route was selected because it would avoid or minimize the
12 potential cultural, environmental and land use impacts while providing the least-cost route
13 for design and construction.

14
15 **Q. Has PNM developed an overall construction process for the Project?**

16 **A.** Yes. PNM’s PNM Exhibit LMW-2 POD describes the construction process and methods
17 for the Project. The POD covers all phases of the Project and describes PNM’s pre-
18 construction and construction activities, construction details, operation, and
19 decommissioning and restoration activities post-construction. The construction process
20 and other activities described in the POD apply to the Proposed Route and alternative
21 routes PNM evaluated in detail during the process. The POD describes the Project in
22 sufficient detail to enable analysis of potential impacts. The POD will continue to be
23 updated as the project design is developed and to include requirements from permits and

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1 stakeholders to avoid or minimize potential impacts. The version filed as PNM Exhibit
2 LMW-2 contains the information necessary to support environmental analysis of the
3 Proposed Route. PNM will incorporate environmental inspection and monitoring measures
4 into the POD and other applicable plans to monitor and respond to potential impacts during
5 construction and operation of the Project.

6
7 In addition to revising the POD, prior to starting construction, PNM will need to complete
8 several sequential activities for the Project. Based on state, county and local jurisdiction
9 requirements, PNM will prepare site plans, final engineering and design documents,
10 acquire construction permits, prepare construction bid packets, solicit construction bids
11 from qualified contractors and select construction contractors.

12
13 **Q. What types of studies are undertaken by PNM to ensure the Project avoids or**
14 **minimizes impacts on land uses, environmental and cultural resources?**

15 **A.** PNM undertakes cultural and biological surveys along with air quality, socioeconomic,
16 environmental justice, and visual studies which are incorporated into an environmental
17 assessment. These surveys and studies encompass the full extent of the proposed route and
18 associated facilities for the Project, including the Pajarito, Prosperity, and Rio Puerco
19 substations (see PNM Exhibit LMW-2 Figure 2.1, page 17 and PNM Exhibit LMW-2
20 Figure 2.2, page 18). PNM has used information and data from these surveys and studies
21 during project planning and design to avoid or minimize potential impacts on communities
22 and resources. Survey results and final environmental studies are incorporated into an
23 overall Environmental Report. PNM uses the POD and Environmental Report to guide site-

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1 specific location of facilities to further minimize potential impacts on environmental,
2 cultural and other values that were identified.

3

4

III. ENVIRONMENTAL SURVEYS AND STUDIES

5 **Q. Why is PNM including a discussion on environmental surveys and studies, even**
6 **though it is not explicitly required for this application?**

7 **A.** PNM's approach to the Project is driven by our goals of identifying opportunities to
8 mitigate potential impacts on communities and cultural and natural resources. In addition,
9 information from environmental surveys and studies are used to develop the Project's site-
10 specific engineering and design plans.

11

12 **Q. How are the environmental surveys and studies PNM conducts used as the Project**
13 **moves forward?**

14 **A.** The environmental studies and information from cultural and biological surveys are used
15 to evaluate if the Project, as planned, could unduly impair important environmental and
16 cultural resources. Information from the cultural and biological resource surveys resulted
17 in modifications to the Project design and PNM's selection of the Proposed Route (see
18 PNM Exhibit LMW-2). The preliminary and final environmental studies and survey results
19 that are compiled into the Environmental Report also guide subsequent detailed design and
20 construction phases, and additional best management practices and environmental
21 protection measures so that there is no undue impairment to key environmental values.

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1 My testimony below summarizes the cultural and biological surveys and resource studies
2 PNM has undertaken to modify the Project’s design, incorporate best management
3 practices and resource protection measures into Project construction and operation.

4

5 A. *Cultural Resources*

6 **Q. Please describe the cultural resources surveys for the Project.**

7 **A.** PNM’s consultant conducted field surveys and recorded archaeological sites, historical
8 structures and isolated objects (“IO”).¹ Most archaeological sites encountered during the
9 survey are low-density, flaked stone, artifact scatters as well as historic-period artifact
10 scatters that relate to twentieth-century ranching of the West Mesa or Route 66. Historic
11 structures whose origins may date back to the seventeenth to eighteenth centuries are
12 primarily acequias and other canals that were extensively modified in the 1930s.

13

14 PNM’s best management practice is first to avoid all cultural resource sites that are eligible
15 or potentially eligible for inclusion in either the New Mexico State Register of Cultural
16 Properties or the National Register of Historic Places (“NRHP”). If an eligible or
17 potentially eligible cultural resource site cannot be avoided, PNM resolves potential
18 adverse effects through standard methods such as archaeological monitoring, test or data
19 recovery.

20

¹ Isolated objects are the material remains of a single isolated event, a feature with limited interpretable value, or a combination of cultural debris that is most likely fortuitous in nature (e.g., debris found in an arroyo bottom). IOs are not related to other nearby isolated manifestations and are spatially separated from sites.

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1 *B. Biological Resources*

2 **Q. Describe the review of biological resources.**

3 **A.** PNM’s consultant conducted a field survey of the Project. The biological survey
4 incorporated information from relevant federal and state databases. PNM’s consultant
5 assessed vegetation, water resources, noxious plant species presence, and habitat suitability
6 for United States Fish and Wildlife Service (“USFWS”) and State of New Mexico protected
7 species.

8
9 **Q. Are further ecological resource studies necessary?**

10 **A.** No. Based on the consultant’s evaluation of biological resources, there are no additional
11 ecological resource studies necessary.

12
13 **Q. Could the Project unduly impact fish and wildlife habitats or vegetation?**

14 **A.** PNM’s Proposed Route will not unduly impact wildlife habitat and vegetation. During the
15 biological field survey, biologists identified 11 bird species, two mammal species, one
16 amphibian, and one reptile species.

17
18 While no further ecological resource studies are necessary, PNM will develop a
19 Reclamation Plan for the Project. The purpose of the Reclamation Plan is to restore
20 ecological resources, including vegetation, hydrology, and wildlife habitats affected by the
21 Project during construction. PNM’s objective is to restore areas disturbed during
22 construction to a condition equal to or closely approximating existing conditions.

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1 **Q. What other types of resources are evaluated for potential impacts from the location**
2 **of the Project?**

3 **A.** PNM’s consultant evaluates potential impacts regarding physiographic, geology and soil
4 resources . This evaluation informs engineering construction decisions and site-specific
5 reclamation activities.

6
7 **Q. What are the findings regarding water resources impacted by the location of the**
8 **Project?**

9 **A.** PNM’s consultant surveyed water resources as part of the biological resource survey. The
10 Project and surrounding areas include a network of arroyos and intermittent or ephemeral
11 drainages oriented towards the Rio Grande River, which is the only perennial waterway
12 crossed by the Project. The biological survey report indicates that the Project will not result
13 in ground disturbance within the Rio Grande River’s riparian corridor.

14
15 *C. Air Quality*

16 **Q. Is consideration given to whether the Project would adversely impact air quality?**

17 **A.** Yes. PNM evaluated whether the Project would adversely impact air quality during
18 construction and subsequent Project operation. PNM’s consultant evaluated construction
19 and operations-related emissions. Construction-related emissions include exhaust from
20 construction vehicles and construction worker commuting, material movements, and
21 fugitive dust from construction activity. Operations-related emissions include exhaust from
22 vehicles used during inspection and maintenance activities. The preliminary air quality
23 study indicates that the Project would be in conformity with all applicable rules and

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1 regulations related to emissions generated during construction and operation. As described
2 in the POD, PNM's best management practices include fugitive dust suppression methods
3 such as watering and maintaining gravel surfaces (see PNM Exhibit LMW-2, Appendix B,
4 page B-2).

5
6 *D. Visual*

7 **Q. What is the visual context of the Project?**

8 **A.** The visual context for the Project is the West Mesa landscape topography and vegetation,
9 as well as existing renewable energy, transmission and transportation infrastructure. PNM's
10 consultant completed viewshed analyses to identify and assess the Project's potential
11 impacts on existing views. As discussed by PNM witness Adam McClellan, PNM provided
12 visual impact information during community engagement meetings. Visual analysis of the
13 Project is based on the transmission line and substation design characteristics and locations
14 of Project components, topography, and potential views within the surrounding area. PNM
15 incorporated design features to reduce impacts to views taking into consideration
16 topography, safety, and existing transmission and transportation infrastructure.

17
18 *E. Socioeconomic*

19 **Q. Has PNM studied potential impact of the Project on socioeconomic resources?**

20 **A.** Yes. PNM is in the process of preparing its final evaluation of potential impacts on
21 socioeconomic resources during construction and operation. The socioeconomic factors
22 evaluated include population, employment, income, potential economic output and State
23 and Local government revenues. The economic output associated with construction

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1 employment and economic multipliers from local spending and tax revenues during the
2 construction are expected to increase revenues in the Albuquerque metro area that includes
3 Rio Rancho, Albuquerque, and Los Lunas. No adverse impacts on socioeconomic
4 resources have been identified. As discussed by PNM witness Hakimian, the Project’s
5 addition of transmission capacity and enhancement of system reliability and resiliency in
6 the metro area are expected to positively benefit existing and potential customers.

7
8 *F. Environmental Justice*

9 **Q. Has PNM studied potential impacts of the Project on environmental justice**
10 **communities?**

11 **A.** Yes. PNM’s consultant is preparing a final Environmental Justice screening that identifies
12 if there are environmental justice populations present based on race, ethnicity or income²
13 present within three miles of the Project. All the U.S. census block groups³ within three
14 miles of either route have environmental justice populations based on percentages of
15 minority populations or low-income households. This is not atypical for the state of New
16 Mexico, Bernalillo County, or Sandoval County, where minority populations comprise
17 63.5%, 62.2%, and 58.1% of the total populations, respectively.

18

² A low-income household is defined as a household associated with an income at or below the federal poverty level as reported in Table B17017 of the 2023 American Community Survey (ACS) 5-year estimates. A minority person is a person who self-identifies as any race or ethnicity other than “White alone, not Hispanic” in Table B03002 in the 2023 ACS 5-year estimates.

³ A Census Block Group is the smallest geographical unit for which the Census Bureau consistently publishes the survey data needed to identify environmental justice populations. Block Groups typically have a population of 600 to 3,000 people (U.S. Census Bureau. 2022. Glossary: Block Group. Geography Program. Available at: https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_4. Last updated April 11, 2022.)

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1 At the time of preparing this testimony, no disproportionate effects on environmental
2 justice populations have been identified. During subsequent engineering design and
3 construction phases of the Project, PNM will continue to conduct outreach to residents and
4 community leaders to discuss the Project. PNM has and will continue to translate Project
5 materials into Spanish and will continue to use both virtual and in-person options for
6 engaging stakeholders, including environmental justice populations.
7

IV. ADDITIONAL STUDIES AND CONSIDERATIONS

8
9 *A. Tribal Considerations*

10 **Q. Did PNM consider how the Project will impact local tribes?**

11 **A.** Yes. PNM considered potential impacts on cultural and historic resources during Project
12 planning. PNM will develop site-specific location of facilities to avoid and minimize
13 potential impacts on cultural and historic resources.
14

15 **Q. Has PNM shared information, solicited input, and considered concerns with leaders
16 from local tribes?**

17 **A.** The Direct Testimony of PNM witness Cathy Newby describes meetings and input solicited
18 from local tribes regarding the Project. During the meetings with local tribes, PNM
19 provided information on the Project location, design, and an overview of the environmental
20 studies PNM is conducting. In addition, PNM shared the results of cultural resource
21 surveys and reports with tribes requesting information.
22

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1 *B. Community Outreach*

2 **Q. Did PNM consider how the Project will impact surrounding communities?**

3 **A.** Yes. In addition to examining socioeconomic and environmental justice factors, PNM
4 conducted community outreach as described in the Direct Testimony of PNM witness
5 McClellan. Input from communities along with evaluations of traffic, air quality,
6 socioeconomics, environmental justice and visual resources are all incorporated by PNM
7 in considering how the Project may impact surrounding communities.

8

9 **Q. Did PNM conduct meetings with leaders from surrounding communities to gain their**
10 **input on the Project?**

11 **A.** Yes. PNM conducted meetings with leaders from surrounding communities including 82
12 neighborhood associations and consulted with 29 Native American Tribes and Pueblos with
13 historic and ancestral ties to the area. PNM conducted a virtual meeting with the leaders of
14 neighborhoods associations in western and southern Bernalillo County. The Direct
15 Testimonies of PNM witnesses McClellan and Newby include additional information on
16 the input PNM received when conducting outreach to surrounding communities and
17 Pueblos and Tribes, respectively.

18

19 **Q. How has PNM considered the concerns raised in the public outreach process?**

20 **A.** As discussed by PNM witness McClellan and PNM witness Newby, PNM has conducted
21 outreach specifically to residents and community leaders to discuss the Project. The POD
22 includes best management practices and environmental protection measures PNM
23 implements to avoid or reduce potential impacts on resources and communities considering

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1 the concerns raised by residents and leaders. PNM’s best management practices and
2 environmental protection measures for the Project include design elements to reduce
3 impacts to views; construction practices to reduce sediment, control fugitive dust, and
4 restrict vehicle use to specific roads; and vegetation treatment based on PNM’s integrated
5 vegetation management principles. PNM will also comply with dust control requirements
6 that are part of the Bernalillo and Sandoval Counties, City of Rio Rancho and City of
7 Albuquerque permit requirements. Traffic control plans and identifying avoidance areas to
8 protect resources are other environmental protection measures PNM employs to reduce
9 potential effects.

V. ENVIRONMENTAL AUTHORIZATIONS

11
12 **Q. Please list all federal, state, and local environmental authorizations needed before**
13 **PNM begins construction and operation of the proposed transmission line, along with**
14 **an estimated timeline of such authorizations.**

15 **A.** The POD includes a table of the permits or authorization potentially needed for the Project.
16 PNM’s Preferred Route will be partially located on public land administered by the New
17 Mexico State Land Office (“NMSLO”) and City of Albuquerque, and on privately held
18 lands. PNM regularly interacts with the agencies with potential jurisdiction over the Project
19 and works cooperatively with those agencies to obtain necessary permits and approvals to
20 achieve the expected design, construction and operation milestones for the Project. These
21 agencies and the anticipated permits or authorizations required by each are identified in
22 PNM Exhibit LMW-2, Table 1-1 on pages 2-4 through 2-6. During subsequent design and

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1 construction phases of the Project, PNM will continue to monitor the need for additional
2 environmental or other regulatory authorizations and obtain them as necessary.

3

4 **Q. Will PNM provide copies of the permits obtained from other agencies?**

5 **A.** Yes. PNM will provide copies of the permits as they are obtained. Unless otherwise
6 recommended by NMPRC Utility Division Staff, PNM proposes to make a single
7 compliance filing containing copies of the permits at the completion of the construction
8 phase of the Project.

9

10 style="text-align:center">**VI. CONCLUSION**

11 **Q. Please summarize your testimony.**

12 **A.** PNM has used and will continue to use information from environmental studies and
13 surveys to refine the Project and modify the design to avoid or reduce potential effects on
14 communities and resources, including important environmental values. Based on the
15 resource evaluations and supporting technical reports prepared for the Project, the Project
16 is not anticipated to unduly impair any important environmental values. Additionally,
17 PNM's application of best management practices, together with resource protection
18 measures included in permits and authorizations as conditions of approval, helps avoid or
19 reduce potential adverse impacts on communities and resources.

20

21 **Q. Does this conclude your testimony?**

22 **A.** Yes.

GCG#534826

Leslie M. Watson Resume

PNM Exhibit LMW-1

Is contained in the following 2 pages.

Leslie M. Watson
EDUCATIONAL AND PROFESSIONAL SUMMARY

Name: Leslie M. Watson

Address: Public Service Company of New Mexico
2401 Aztec Road NE
Albuquerque, NM 87107

Position: Environmental Planning and Permit Project Manager

Education: University of Montana
Bachelor of Science, Zoology

Penn State University
GIS Certificate

Harvard Business School
Sustainability Studies Certificate

Employment: Employed by Public Service Company of New Mexico (PNM) since 2024

Burns & McDonall
Environmental Consultant (2023-2024)

National Radio Astronomy Observatory
Site Development (2022-2023)

Watson Environmental
Environmental Consultant (2016-2022)

Merjent
Project Manager/Environmental Analyst (2014-2016)

URS Corporation
Senior Environmental Planner (2006-2014)

Booz Allen Hamilton
Associate (2003-2006)

Michael Baker Corporation
Environmental Planner (2001-2003)

USFS CAET
Content Analyst/Writer (1998-2001)

USDA Forest Service
Forest Technician (1983-1998)

GCG#534814

Preliminary Plan of Development

PNM Exhibit LMW-2

Is contained in the following 80 pages.



PUBLIC SERVICE COMPANY OF NEW MEXICO

Preliminary Plan of Development

Rio Puerco-Pajarito-Prosperity 345 kV Transmission Line
Project

PROJECT NO. 184946

REVISION 4

FEBRUARY 24, 2026



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List of Abbreviations

Abbreviation	Term/Phrase/Name
APLIC	Avian Powerline Interaction Committee
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CABQ	City of Albuquerque
CCN	Certificate of Public Convenience and Necessity
CWA	Clean Water Act
ESA	Endangered Species Act
kcMil	kilo circular mils
kV	kilovolt
MBTA	Migratory Bird Treaty Act
MW	megawatt
NESC	National Electric Safety Code
NMDOT	New Mexico Department of Transportation
NMSLO	New Mexico State Land Office
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OPGW	optical ground wire
OSHA	U.S. Department of Labor, Occupational Safety and Health Standards
PNM	Public Service Company of New Mexico
POD	Plan of Development
PRC	New Mexico Public Regulation Commission
Project	Pajarito-Rio Puerco-Prosperity Transmission Line Project
PWSW	Storm Water Pollution Prevention Plan
ROW	right-of-way
SUP	Special Use Permit
SWPPP	stormwater pollution prevention plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service



1.0 Introduction

1.1 Overview

Public Service Company of New Mexico (PNM) plans to construct the Rio Puerco–Pajarito–Prosperity 345-kilovolt (kV) Transmission Line Project (Project), a major infrastructure effort consisting of four primary components designed to strengthen and modernize the regional electrical system. Central to the Project is the construction of a new overhead 345 kV single-circuit transmission line that will link the Rio Puerco and Pajarito substations, creating an additional high-capacity pathway for power delivery. The Pajarito and Rio Puerco substations would be expanded to accommodate the proposed Pajarito-Rio Puerco connection and new renewable energy interconnections. Prosperity substation would be expanded within the existing PNM owned parcel to include a new 345/115 kV transformer, two new 345 kV bays, and one 115 kV bay. The

In addition, the Project includes the restringing of the existing 345 kV transmission line between the Pajarito and Prosperity substations with Optical Ground Wire (OPGW), improving both communication capabilities and operational resiliency. To complete the network improvements, approximately one mile of new line extensions will be constructed. This includes a half-mile extension from the Pajarito–Prosperity 345 kV line, as well as two quarter-mile segments that will loop the Prosperity–Sandia 345 kV line into the Prosperity substation.

This Preliminary Plan of Development (POD) outlines the proposed facilities associated with the Project, along with the procedures that PNM will follow during construction, operation, and maintenance. A final POD will incorporate completed engineering designs, reflect all permit conditions and authorization requirements, and be prepared and appended as part of the Project’s formal documentation.

1.2 Purpose and Need

PNM’s current system is limited in both transmission availability and generation delivery capability. This Project supports PNM’s renewable energy transition, improves system reliability, and increases system capacity in Rio Rancho, Los Lunas, and Albuquerque. Currently, PNM’s electric system does not have the means to meet these initiatives. In addition, the new transmission lines would provide:

- **Transition to Emissions-Free Generation:** Prepares PNM to retire gas generation facilities while maintaining transmission system reliability.
- **Reliability and Resiliency:** Enhances the transmission system's capacity to withstand outages and enables rebuilding aging infrastructure with advanced conductors.
- **Additional Load Serving Capability:** Provides additional capacity for growing communities in Rio Rancho, Los Lunas, and Albuquerque, accommodating load growth and electrification.

The Project would allow rebuilding the electric grid within the Rio Rancho, Albuquerque and Los Lunas metro areas while keeping existing lines operational, using the existing ROW, and providing flexibility for maintenance outages.

1.3 Routing and Legal Description

PNM conducted a routing study to evaluate routes for a new 345 kV transmission line connecting between the existing Pajarito and Rio-Puerco substations. Data was used to identify potential routes between the Rio Puerco and Pajarito substations. The routing study included 34 individual segments that could be combined to form 129 different route alternatives. To reduce potential land use impacts, route alternatives were located along existing lines of land division such as parcel lines, existing utility corridors, or along roads whenever possible. All 129 route alternatives were evaluated to identify which routes best met the following criteria:

- Minimize impacts to residences, buildings, oil pumps, parks, cemeteries, and city-owned open space areas.
- Minimize overall length of the route.
- Maximize paralleling of existing utility corridors or roadways when practical.
- Minimize impacts to wetlands, riparian areas, conservation lands, and protected species and their habitats for both the transmission line corridor and access for construction and maintenance.

The design and construction feasibility of each route was evaluated. The route segments identified in the initial 2023 routing study were determined based on available data, including land use, geographical considerations, and future community plans. Construction of Clenera Atrisco Solar Farm in 2024 and New Mexico Department of Transportation (NMDOT) acquisition of easements for the Paseo del Volcan, a regional principal arterial and a community principal arterial ROW development, presented operational and maintenance constraints to the routes identified in 2023, as well as an opportunity to co-locate the transmission line within or adjacent to the proposed NMDOT ROW.

The potential operational constraints of the transmission line infrastructure with the Clenera Atrisco Solar Farm and the opportunity to co-locate within or adjacent to the proposed DOT ROW, revised routes were required to ensure compatibility and minimal disruption. Revised routes were analyzed to improve the previously identified segments while maintaining the objectives of the Project and the following criteria:

- Avoiding the Clenera Atrisco Solar Farm
- Minimizing social impacts by selecting route alternatives that minimize impacts to state owned/managed lands and open space.
- Co-locating within or adjacent to the NMDOT ROW to the extent practicable to better enhance the land use compatibility of the Project with future infrastructure.

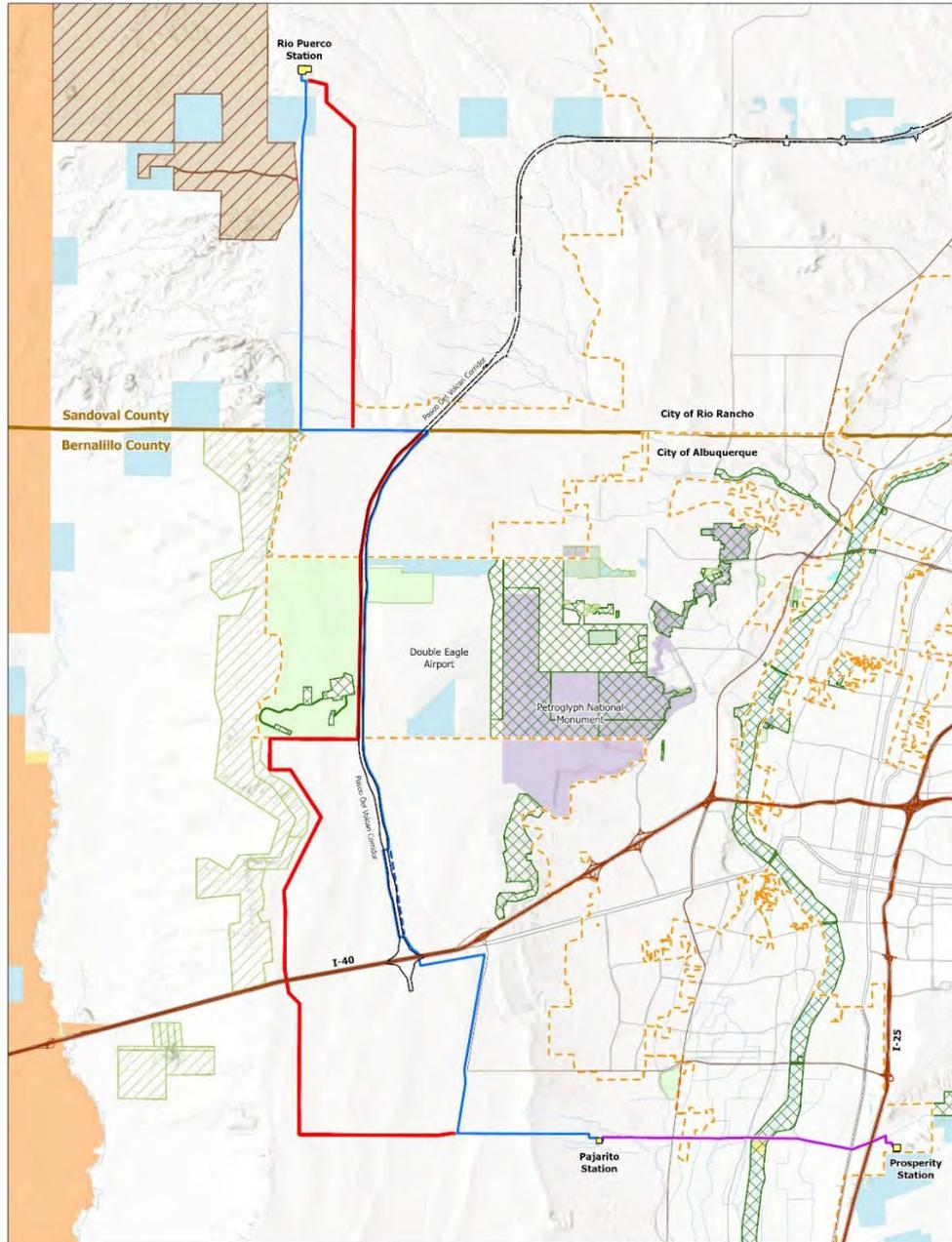
Based on the above criteria, PNM identified two new potential routes. Both routes are located on private, CABQ, and NMSLO lands within Bernalillo and Sandoval Counties (Figure 1-1). PNM further evaluated the two routes considering each route's technical feasibility, economic feasibility to construct and operate, and if a route presented an environmental advantage. Both routes shown on Figure 1-1 are technically feasible and based on existing and planned land uses, cultural and biological resource surveys PNM did not identify an environmental advantage for either route.

PNM identified a Proposed Route (Figure 1-2) which is a combination of the two routes shown in Figure 1-1. The Proposed Route was developed during project meetings and meetings with stakeholders to avoid or reduce potential impacts on existing or planned land use during construction and operation of the Project. Information presented in the POD for the alternative routes is applicable to the Proposed Route. Right-of-way and engineering concerns will be used to consider specific pad sites / structure locations and access routes. The final infrastructure placement will be based on engineering concerns like terrain, slopes, and access. The legal description of PNM's proposed route for the Project will be included in the final POD.

1.3.1 Land Uses

Land uses near the Project are residential, open space,¹ and transportation corridors. Current zoning for Bernalillo and Sandoval counties, City of Albuquerque, and Rio Rancho are listed in Table 1-1. In the northern portion of the Project, the land uses include the undeveloped and unincorporated Rio Rancho Estates in Sandoval County. In Bernalillo County, the Project crosses undeveloped lands of the City of Rio Rancho and is adjacent to solar development and the Double Eagle II Airport, a general aviation facility on Albuquerque's west side.

¹ City of Albuquerque open space west of Double Eagle II Airport is operated under two Recreation and Public Purposes patents authorized by the Bureau of Land Management.



	Date Exported: 2025-09-05 Author: Rick Roberge Map Scale: 1:120,000 Credits: PNM, NMDOT, BLM, City of Albuquerque, Esri Basemap	PNM Station Alternatives A, B, C, D, E, F	Open to Public Closed to Public Priority Acquisitions	Interstates Other Roads DOT ROW	BLM County Incorporated Places Santa Fe Pueblo	Bureau of Land Management Dept. of Defense National Park Service Private State	State Game & Fish State Park Tribal Scale: 0, 0.5, 1, 2 Miles
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Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Project Overview

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Figure 1-1: Project Location



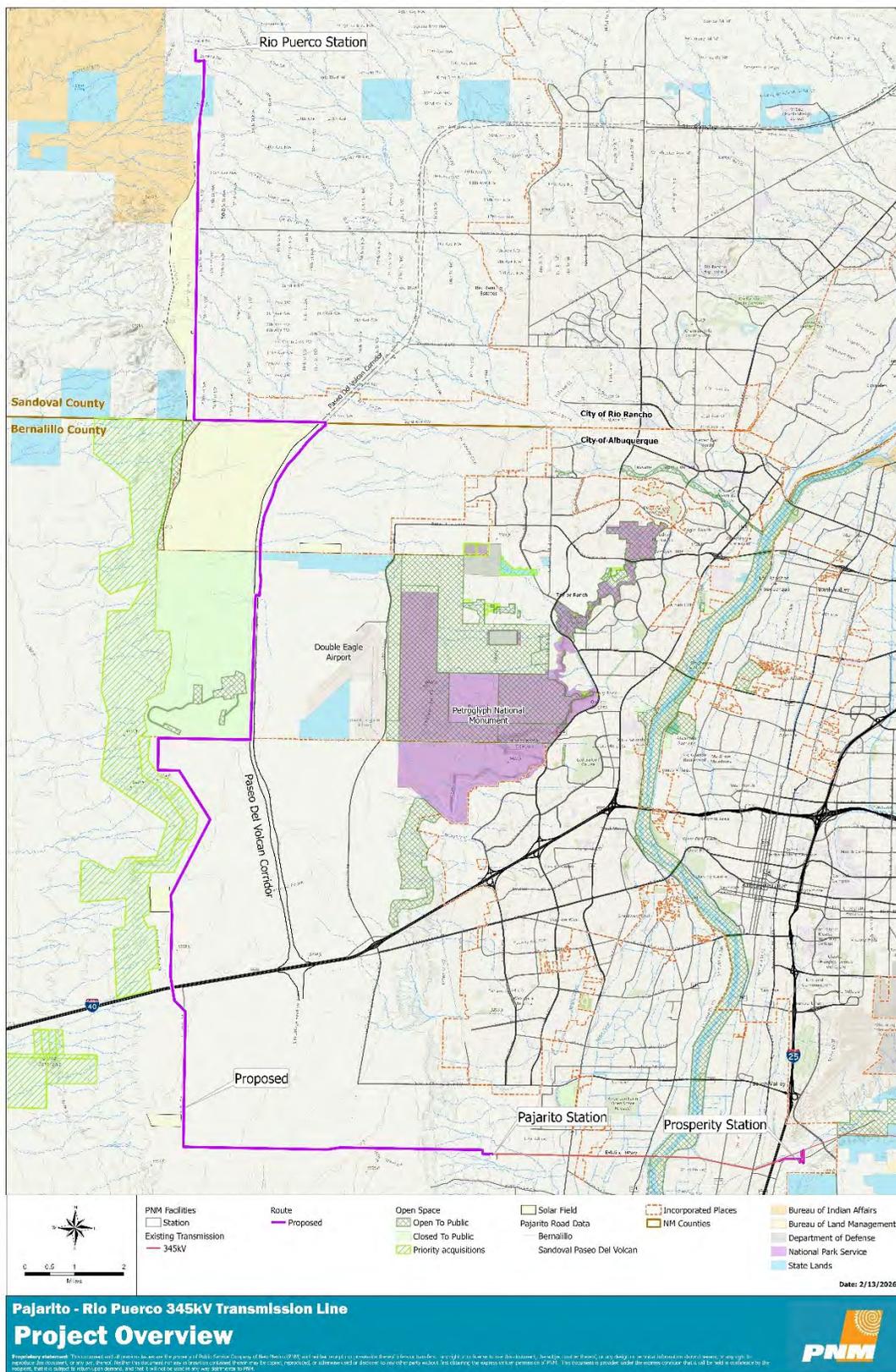


Figure 1-2: PNM Proposed Route



Table 1-1: Land Use Zoning

Project Component	Bernalillo County Land Use Zone ¹	City of Albuquerque Land Use Zone ²	Sandoval County Land Use Zones ³	City of Rio Rancho Land Use Zones ⁴
Alternative A	Rural agricultural, 1-acre minimum	Non-Residential; Major Public Open Space	Commercial Use, Community District, Rio Rancho Estates	Single Family Residential Multi-Family Residential Mixed Use Activity Center Retail Commercial Quail Ranch Overlay Zone Transitional Zoning
Alternative B	Rural agricultural, 1-acre minimum West Central Commercial/Light Industrial Zone	Non-Residential Major Public Open Space		Single Family Residential Multi-Family Residential Mixed Use Activity Center Retail Commercial Industrial and Business Park
Pajarito to Prosperity	Light manufacturing, Rural agricultural, 1-acre minimum Single family residential Mobile Home and Single Family Residential			
Rio Puerco Station			Commercial Use	
Pajarito Station	Rural agricultural, 1-acre minimum			
Prosperity Station	Rural agricultural, 1-acre minimum			

Table Notes: 1 Bernalillo Comprehensive Plan (Adopted June 2024); 2 City of Albuquerque IDO (May 2024); 3 Sandoval County Comprehensive Plan (2024); 4 Rio Rancho Comprehensive Plan (2015)

1.4 Permits and Authorizations

The Project will be on public land administered by the NMSLO, CABQ, and privately held lands. Pueblos, tribes, state, and local agencies will be consulted during preparation of the Project design and environmental reports. In addition, those agencies with potential jurisdiction over this Project will be contacted to obtain necessary permits and approvals. The agencies pertinent to this project and the associated permit or authorization are identified in Table 1-2.

Table 1-2: Permits and Authorizations Potentially Required for the Proposed Project

Regulatory Agency	Permit/Authorization	Description
Federal		
U.S. Fish & Wildlife Service; New Mexico Ecological Services Field Office	Migratory Bird Treaty Act (MBTA) & Bald and Golden Eagle Protection Act (BGEPA) Compliance	If an activity may affect migratory birds, bald eagles, or golden eagles, and/or their nests, coordination with the US Fish and Wildlife Service (USFWS) may be required. Bird nest surveys could be required by the USFWS to demonstrate compliance with the Endangered Species Act (ESA), MBTA, and BGEPA.



Regulatory Agency	Permit/Authorization	Description
U.S. Environmental Protection Agency; Region 6	National Pollutant Discharge Elimination System (NPDES) Construction General Permit	Requires the submittal of a Notice of Intent (NOI) for construction activities and preparation and submittal of a Storm Water Pollution Prevention Plan (SWPPP) and Project Specific Erosion and Sediment Control Plans. The SWPPP must contain best management practices (BMPs) for erosion and sediment control for construction activities.
U.S. Federal Aviation Authority	Aeronautical Study and Determination	Required for transmission line construction near and around airports (Title 14, CFR, Part 77). Once the FAA has completed an aeronautical study, a determination is issued regarding the impact to air navigation.
State		
New Mexico Public Regulation Commission	Application for determination of right-of-way width	Application under New Mexico Administrative Code Chapter 62, Article 9, Section 62-9-3.2, for a right-of-way width that is greater than 100 feet.
New Mexico Environment Department; Surface Water Quality Bureau	401 Water Quality Certification	State certification for federal permits issued under Clean Water Act (CWA)
New Mexico Historic Preservation Division	Section 106 - National Historic Preservation Act Compliance and New Mexico Cultural Properties Act	Protects historic, architectural, and archaeological sites by requiring state and federal agencies to consider the effects of their actions on historic properties listed or eligible for listing in the National Register of Historic Places.
New Mexico Department of Transportation	New Mexico Public Highway Utility Accommodation Permit	The relocation of utilities within public ROW are required to obtain this permit. The Project crosses two federal interstates and multiple state roadways.
New Mexico Department of Transportation	Traffic Control/Roadway Work Permit	Conducting work or impeding traffic within the state roadway will require a traffic control/roadway work permit.
New Mexico Department of Transportation	Access Permit	Access Permit, including stipulations for any safety enhancements necessary to the highway
New Mexico Dept. of Energy, Minerals, and Natural Resources, Forestry Division	Incidental Take Permit	Taking or transplanting of state endangered plant species (during construction, ROW clearing, etc.)
New Mexico Environment Department	Hazardous Waste Permit	Management of hazardous waste onsite during construction/operation
County		
Bernalillo County Public Works Division; Permit Section	Grading Permit	Construction that disturbs greater than 1 acre in unincorporated Bernalillo County will need a grading permit
Bernalillo County Public Works Division; Permit Section	Storm Water Pollution Prevention Plan (SWPPP)	For any grading permit issued by Bernalillo County, a PWSW is also required.
Bernalillo County Public Works Division; Permit Section	Floodplain Development Permit	Construction within any area of special flood hazard as shown on a flood insurance rate map shall require a development permit.
Bernalillo County Public Works Division; Permit Section	Excavation Permit	Any person that needs to make an excavation within Bernalillo County ROW will require this permit, not needed for excavations that occur on private property.
Bernalillo County Public Works Division; Permit Section	Barricading Permit	Any construction activity that affects the flow of traffic on Bernalillo County ROW or public roadways.



Regulatory Agency	Permit/Authorization	Description
Bernalillo County Public Works Division; Permit Section	Driveway Access Permit	Building new driveway access from Bernalillo County ROW requires a driveway access permit. Permit application subject to final engineering specifications and if required appropriate notice or coordination will be made to Bernalillo County.
Sandoval County Floodplain Administration	Floodplain Development Permit	Required for work of any kind within floodplains along with FEMA elevation Certificate; if the proposed development is located in a Special Flood Hazard Area, the applicant must submit development plans and Floodplain building application. Permit application subject to final engineering specifications and if required appropriate notice or coordination will be made to Sandoval County.
Sandoval County Planning Department	Site Plan Approval	Required for development of specific sites, such as an amendment to the Rio Puerco Substation site plan to update the grading and drainage plan.
Sandoval County Planning Department	Preliminary Plat Approval	Sandoval County Preliminary Plat approval is a precondition of Special Use Permit (SUP) approval.
Sandoval County Planning Department	Grading and Drainage Permit	Grading and drainage plans demonstrate that the project will not exceed the capacity of existing or planned drainage facilities.
Sandoval County Planning Department	Commercial/Industrial Development Review	In unincorporated areas of Sandoval County staff from the Economic Development, Fire and Rescue, Planning and Zoning, and Public Works departments coordinate the commercial and industrial development review.

1.5 Project Organization and Contact

PNM's principal office for project development is located at 2401 Aztec Road NE, Albuquerque, New Mexico 87107, and PNM's principal corporate office is located at 414 Silver Avenue SW, Albuquerque, New Mexico, 87102-3289. PNM's project manager for the Project is:

Laurie Williams; Senior Vice President; Integrated Planning & Transmission Development
Public Service Company of New Mexico (PNM)
2401 Aztec Road NE
Albuquerque, New Mexico 87107
Phone: 505-241-0641

2.0 Project Description

Construction of the Project will involve surveys, access road development, clearing of structure sites, installation of foundations, assembly and erection of transmission structures, installation of conductors and overhead shield wires, and installation of grounding systems. Once work in an area is complete, PNM will conduct site cleanup and reclamation. The Project is composed of four components, described below:

1. New Overhead 345 kV Single-Circuit Transmission Line Between the Rio Puerco and Pajarito Substations

This component consists of constructing a new 345 kV transmission line within a 150-foot-wide corridor supported by new permanent easements and right-of-way (ROW) agreements. The line will primarily use H-frame single-circuit structures with bundled conductor and OPGW shield wire, providing a new high-voltage connection between the Rio Puerco and Pajarito substations.

2. Expansion of the Rio Puerco, Pajarito, and Prosperity Substations

To support the new transmission facilities and maintain system reliability, each of the three substations will be expanded. These expansions will accommodate additional equipment required for line termination, protection and control systems, and communication upgrades associated with the new and modified transmission lines.

3. Restringing the Existing Pajarito–Prosperity 345 kV Transmission Line with OPGW

This component includes restringing approximately 6.5 miles of the existing 345 kV line between the Pajarito and Prosperity substations using existing monopoles and single-circuit H-frame structures. Up to five H-frame structures east of I-25 will be replaced. The existing line, currently built as a double-circuit monopole with bundled conductor and 3/8-inch EHS shield wire, may be upgraded to include OPGW shield wire to enhance communication capabilities. Work will occur within existing ROW agreements, and no additional easements are required. A portion of the restringing will cross the Rio Grande; however, no ground disturbance will occur within the river or adjacent floodplain, as the restringing work will be conducted using a helicopter.

4. Construction of New 345 kV Line Extensions Totaling Approximately One Mile

This component includes construction of new segments that provide additional connectivity into the Prosperity substation. Approximately 0.5 mile of new 345 kV transmission line will extend from the existing Pajarito–Prosperity line. Two additional extensions, each approximately 0.25 mile in length, will loop the existing Prosperity–Sandia 345 kV line into the Prosperity substation. These extensions will use new permanent easements and ROW agreements with corridors approximately 150 feet wide per circuit. New structures will be single-circuit H-frames consistent with the existing line design.

2.1 Alternatives

PNM identified alternative routes for the proposed 345 kV transmission line between the Rio Puerco and Pajarito substations which include restringing on existing poles between the Pajarito substation to the Prosperity substation. Modification or expansions of existing substations described in Section 2.2.2 are the same for all alternatives.

2.1.1 Alternative A

PNM developed Alternative A to avoid NMSLO lands, planned solar generation sites, and CABQ priority acquisition open space (Figure 2-1). Table 2-1 contains the miles and acres for Alternative A from the Rio Puerco substation to Pajarito station and 345 kV connections and restringing wire on existing monopoles between the Pajarito and Prosperity stations. Alternative A follows existing or planned roads in unincorporated Sandoval County and is on the west side of NMDOT's planned Paseo del Volcan transportation corridor. The 150-foot-wide ROW for Alternative A could cross CABQ Open Space west of Double Eagle II Airport.

Table 2-1: Alternative A Jurisdiction Miles and Acres

Land Jurisdiction	Miles	Acres
Private	31.9	580.6
New Mexico Department of Transportation	3.9	72.4
City of Albuquerque	2.9	48.9
City of Rio Rancho	1.7	35.5
Total	40.3	737.3

2.1.2 Alternative B.1

PNM developed Alternative B.1 to avoid existing solar generation sites, CABQ Open Space and CABQ priority acquisition open space (Figure 2-2). Table 2-2 contains the miles and acres for Alternative A from the Rio Puerco substation to Pajarito station and 345 kV connections and restringing wire on existing monopoles between the Pajarito and Prosperity stations. Alternative B.1 follows existing or planned roads in unincorporated Sandoval County and is on the east side of NMDOT's planned Paseo del Volcan transportation corridor. The 150-foot-wide ROW for Alternative B.1 would cross NMSLO lands.

Table 2-2: Alternative B.1 Jurisdiction Miles and Acres

Land Jurisdiction	Miles	Acres
Private	27.4	501.7
New Mexico State Land	1.0	18.2
New Mexico Department of Transportation	0.4	6.9
City of Albuquerque	3.7	68.0
City of Rio Rancho	4.5	82.0
Total	37.0	676.8

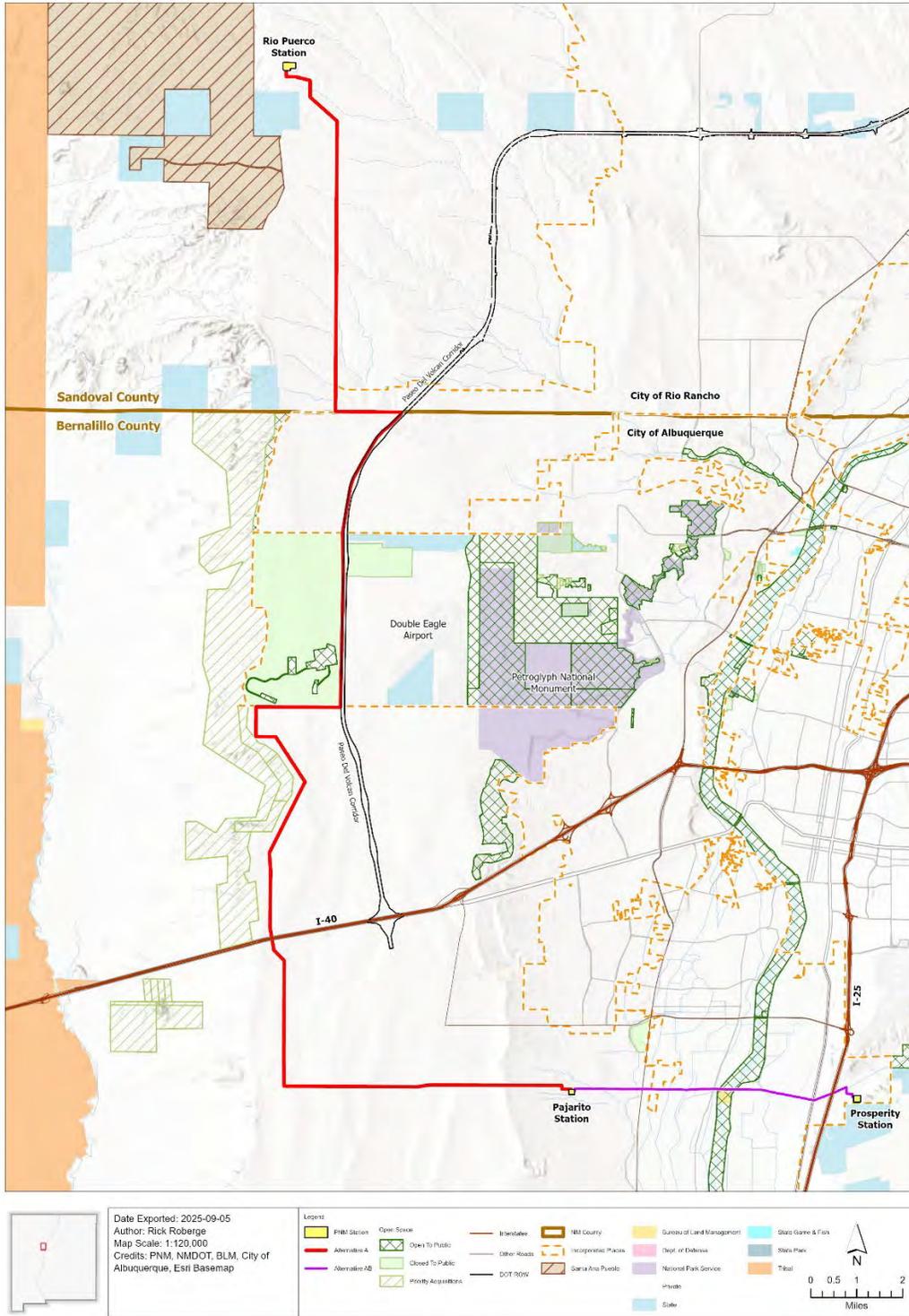


2.1.2.1 Alternative B.2 Segment Option

Based on comments received from stakeholders, PNM identified a segment option for Alternative B (Figure 2-2). Alternative B.2 Segment Option would modify approximately 2.25 miles of Alternative B.2 on privately held lands in Bernalillo County. Table 2-3 contains the miles and acres for Alternative B.2 segment option jurisdiction and acres.

Table 2-3: Alternative B.2 Segment Option Jurisdiction Miles and Acres

Land Jurisdiction	Miles	Acres
Private	27.3	496.4
New Mexico State Land	1.0	18.2
New Mexico Department of Transportation	0.2	4.2
City of Albuquerque	3.7	68.0
City of Rio Rancho	4.5	82.0
Total	36.8	668.8



Rio Puerco-Pajarito-Prosperity 345kV Transmission Line
 Alternative A - Alternative AB Overview

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Figure 2-1: Alternative A



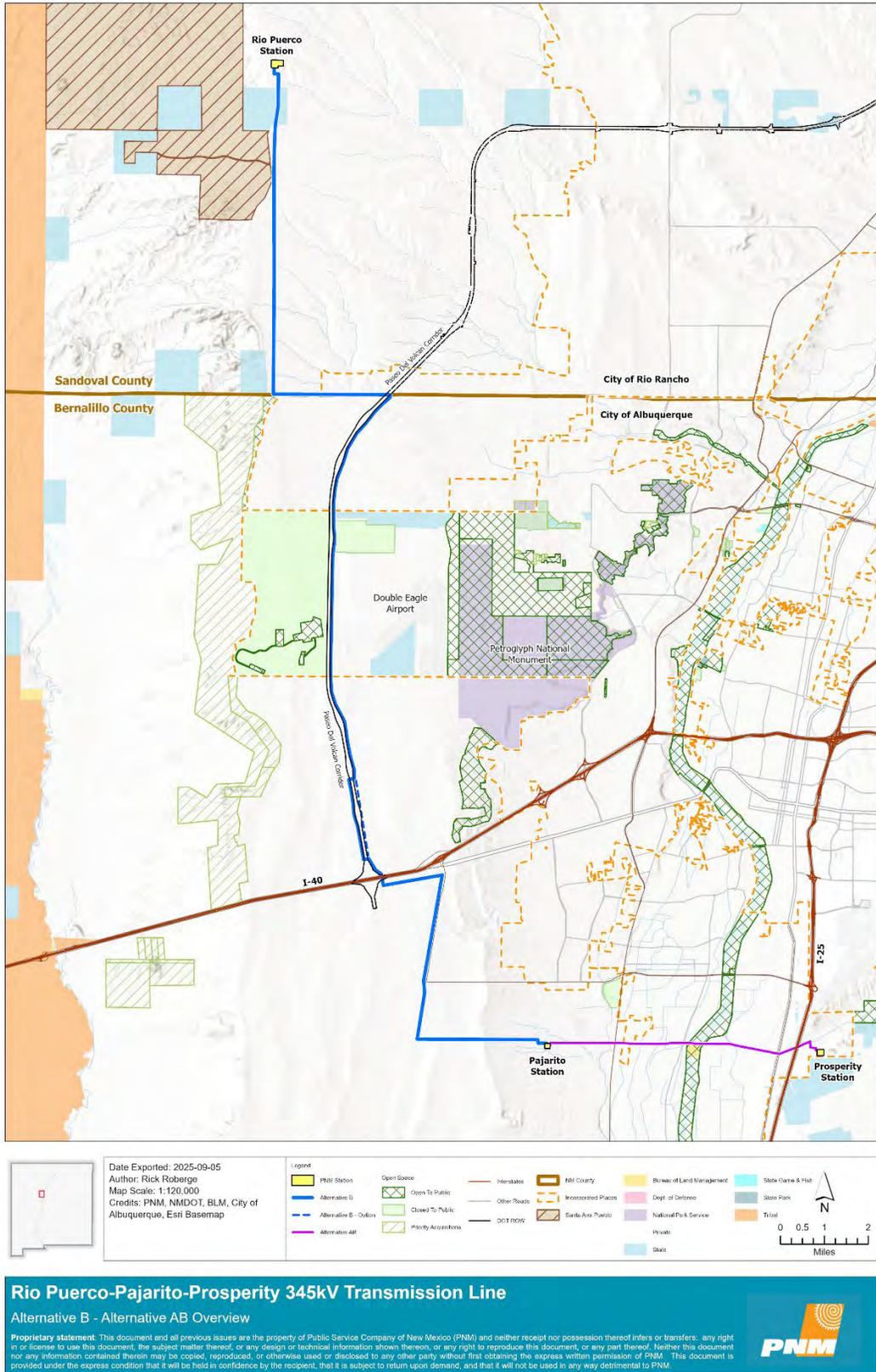


Figure 2-2: Alternative B.1 and B.2 Segment Option



2.2 Design Characteristics

The design characteristics, substations and ancillary facilities are the same for both Alternatives.

2.2.1 Single-Circuit 345 kV Transmission Line

A new single-circuit 345 kV transmission line would be constructed from the Rio Puerco substation south to Pajarito substation. The single-circuit H-frames will be dulled, galvanized tubular steel structures (gray color) or weathering (rust colored) steel. Typical design characteristics of the Project are listed in Table 2-4. Final design characteristics, including wire marker balls or pole lighting, will be determined in the detailed design phase of the Project.

Table 2-4: Typical 345 kV Transmission Line Design Characteristics

Project Component	H-Frame	Monopole
Types of structures	Single-circuit steel H-frame	Single-circuit steel monopole Double-circuit steel monopole
Structure height	H-frame (80 to 140 feet)	Single-circuit steel monopole (95 to 150 feet)
Span length	H-frame (600 to 1,000 feet)	Single-circuit monopoles (700 to 800 feet)
Number of structures	H-frame 6-8 per mile	Monopoles 7-9 structures per mile
Right-of-way width	150 feet	150 feet

The design, construction, operation, and maintenance of the Project will meet or exceed the requirements of the National Electric Safety Code (NESC), U.S. Department of Labor, Occupational Safety and Health Standards (OSHA), and PNM's requirements for safety and protection of employees, contractors, landowners and their property, and the public. Table 2-5 is a summary of the transmission line's electrical properties.

Table 2-5: Transmission Line Electrical Properties

Electrical Properties	
Normal Voltage	345,000 volts (345 kV)
Capacity	1,500 megawatt (MW) (initial) 2,000 MW (final)
Circuit configuration	Single circuit
Conductor Size	1,272-kcmil ACSR (1 sub-conductor per phase)
Minimum ground clearance of conductor	28 feet

2.2.1.1 Transmission Structures and Foundations

Illustrations of 345 kV structures, including H-frames and monopoles, that will be used for this Project are provided on Figure 2-3, Figure 2-4, and Figure 2-5. Structure heights range from 80 to 140 feet varying with terrain and associated span lengths. Span lengths would typically be 800 feet with spans ranging from 600 to 1,000 feet depending upon topography and final design, resulting in approximately 6-8 structures per mile.

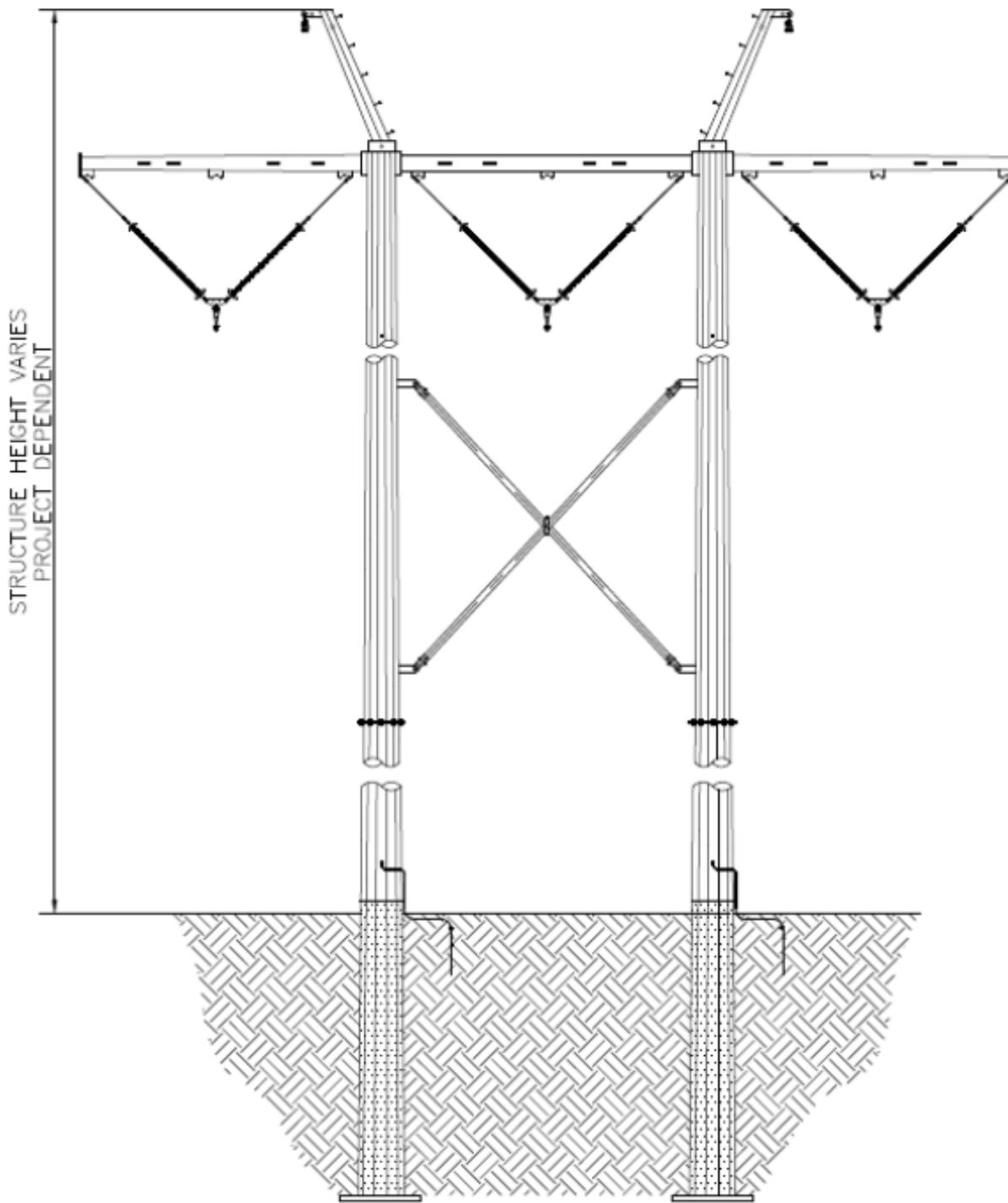


Figure 2-3: 345 kV Typical Structures

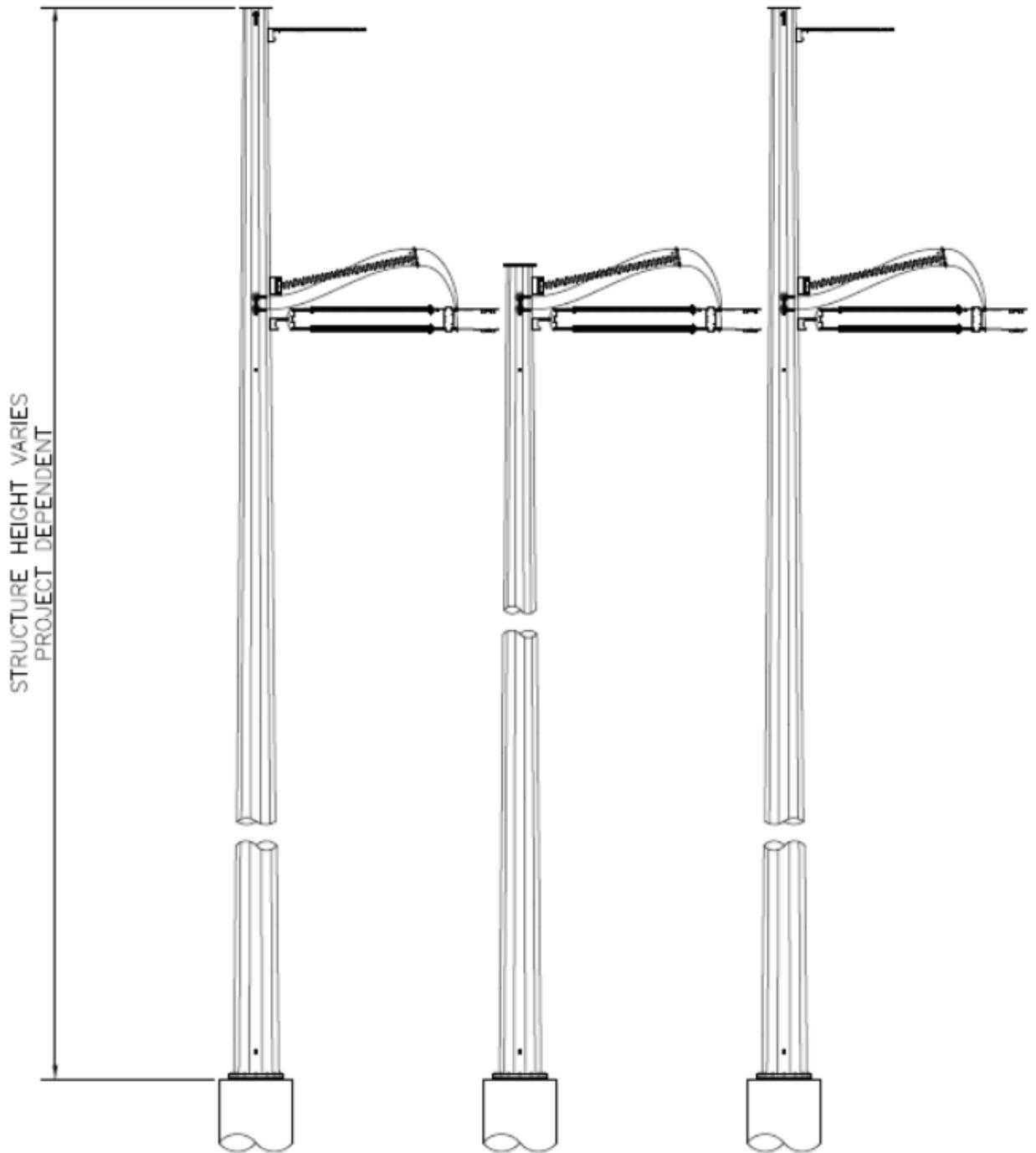


Figure 2-4: Single-circuit 345 kV 3Mono-pole Tangent Dead-end Structure



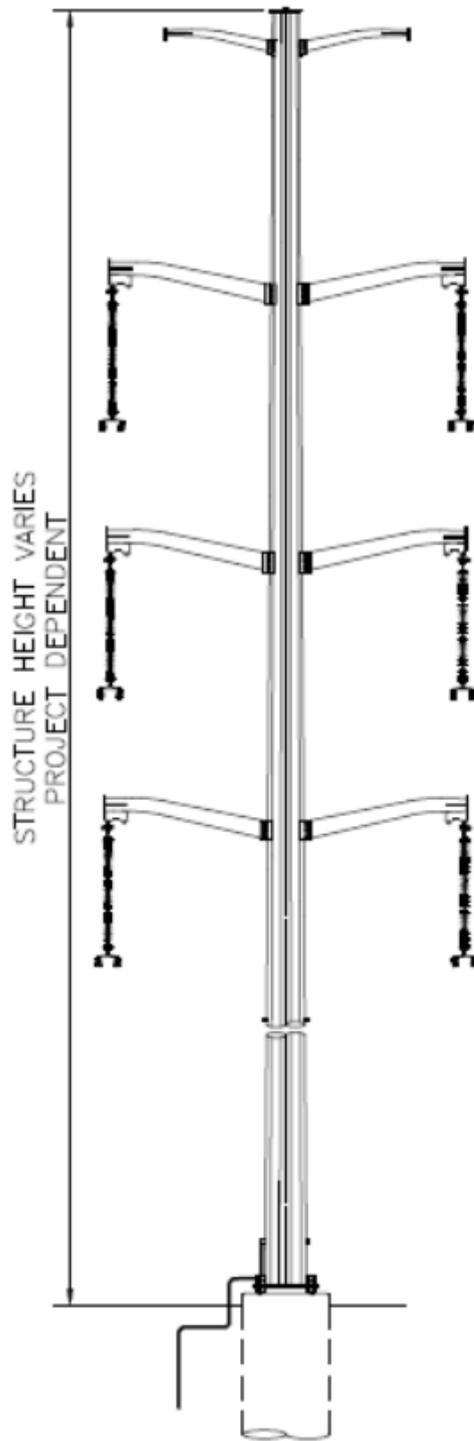


Figure 2-5: Double circuit 345 kV monopole Tangent Structure

H-frames require two foundations, one foundation for each tubular steel leg. The foundation diameter and depth for both steel-lattice and H-frame structures would be determined during final design and are dependent on the type of soil or rock present at each site; typical diameters and depths of foundation are shown in Table 2-6.

Table 2-6: Typical 345 kV Structure Type Foundations

Structure Type	Number of Foundations	Foundation depth (feet)	Area of Foundation (feet ²)
H-frame	2 per H-frame	15-30	4
Monopole	1 per pole	24	7
Small angle monopole	1 per pole	26	8
Dead-end 3-pole H-frame	3 per pole	30	12

2.2.2 Substations

Three substations are components of the project and will have modifications to support the additional 345 kV transmission line. Table 2-7 provides information on the existing substation and planned expansion dimensions. Figure 2-6, Figure 2-7, and Figure 2-8 show the location of the three substations.

Table 2-7: Existing and Proposed Substations Dimensions

Substation	Existing Facility		Expansion		Total	
	Dimensions	Acres	Dimensions	Acres	Dimensions	Acres
Rio Puerco	950' x 1,475'	32.2	961' x 460'	10.1	961' x 1,917'	42.3
Pajarito	600' x 660'	9.1	400' x 660'	6.1	1,000' x 660'	15.2
Prosperity	710' x 825'	13.4	500' x 825'	9.5	1,210' x 825'	22.9

Electrical equipment, such as transformers, reactors and circuit breakers, at substations are filled with insulating mineral oil. Containment structures are included in a Spill Prevention, Control, and Countermeasure plan to prevent equipment oil from getting into the ground or water bodies in the event of a leak.

A grounding system is required in each substation for detection of faults and for personnel safety. The grounding system typically consists of buried copper conductor arranged in a grid system and driven ground rods, typically 8 to 10 feet long. The ground rods and any equipment and structures are connected to the grounding conductor grid. The amount of conductor and length and number of ground rods required are calculated based on fault current and soil characteristics.

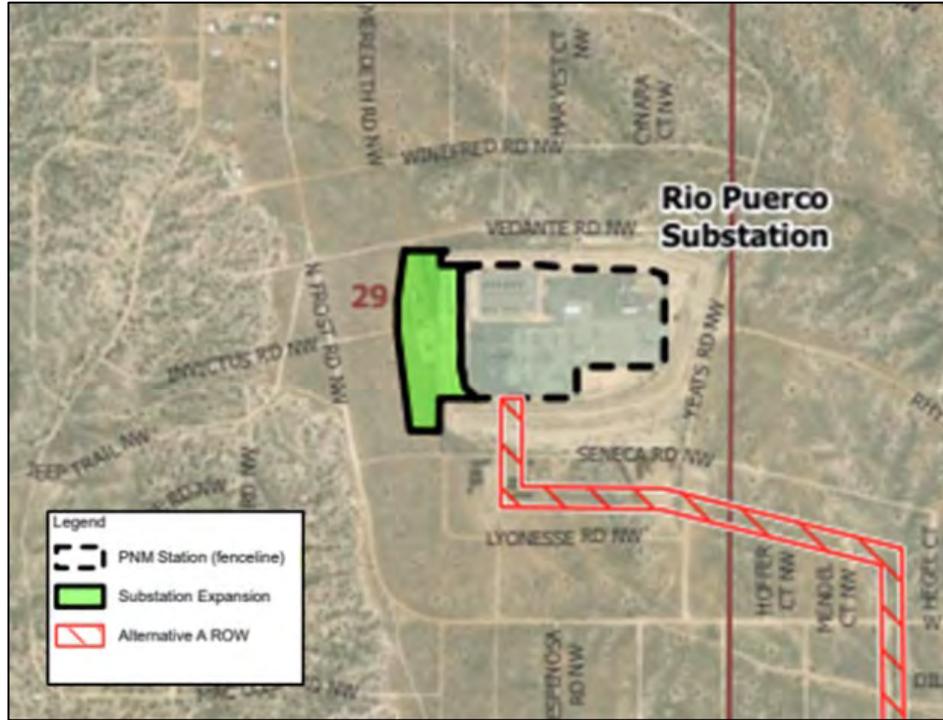


Figure 2-6: Rio Puerco Substation

Figure 2-6 shows the 10.1-acre expansion of the Rio Puerco Substation west of the current substation boundary. This expansion will require land acquisition. Refer to Appendix A, Alternative A, page 1 of 8 for a full scale map.

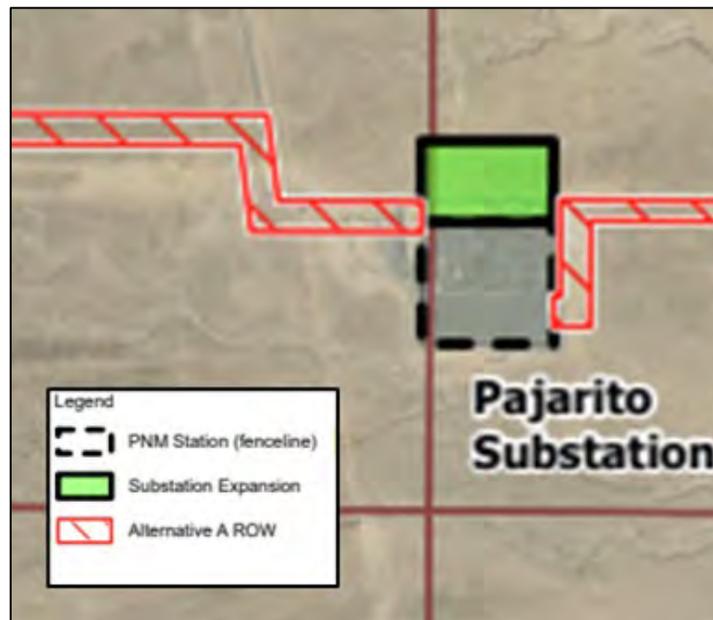


Figure 2-7: Pajarito Substation, 6.1 acre expansion

Figure 2-7 shows the 6.1-acre expansion of the Pajarito Substation north of the current substation boundary. This expansion will require land acquisition. Refer to Appendix A, Alternative A, page 6 & 7 of 8 for full scale maps.

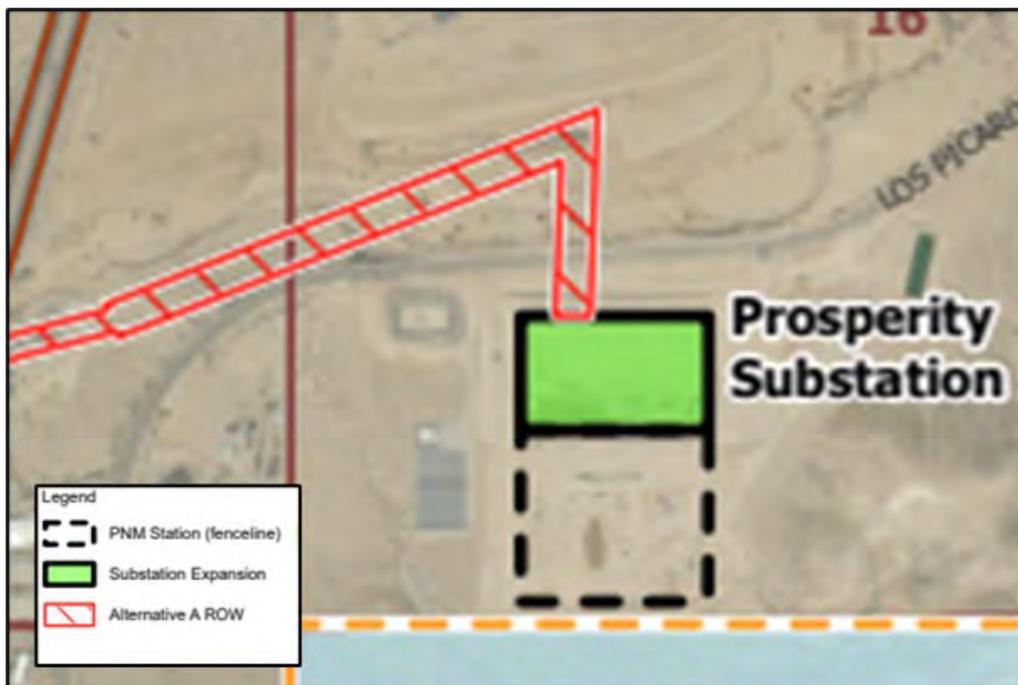


Figure 2-8: Prosperity Substation, 9.5 acre expansion

Figure 2-8 shows the 9.5-acre expansion of the Prosperity Substation north of the current substation boundary. This expansion will not require land acquisition. Refer to Appendix A, Alternative A, page 8 of 8 for a full scale map.

2.2.2.1 Rio-Puerco Substation

The Rio Puerco substation is in Sandoval County (refer to Figure 2-6). The existing substation is surrounded by a 20-foot-tall earthen berm (Figure 2-9) and a 7-foot-tall chain link fence. To accommodate additional electrical equipment the substation site would be expanded west (refer to Table 2-7).



Figure 2-9: Earthen Berm along West Side of Rio Puerco Substation²

Approximately 1,500 feet of the west side earthen berm will be moved 250 to 300 feet west. Relocating the westside berm to accommodate expanding the substation requires relocating a radio tower and buildings on privately held lands. The substation would be surrounded by an earthen berm and an 8-foot-tall chain link fence.

Equipment to be installed:

- 2 – 345 kV breakers
- 3 – Coupling Capacitor Voltage Transformers
- 3 – Surge Arrestors
- 1 – Station dead-ends
- 5 – Disconnect switches
- 1 – OPGW fiber

² Photo credit; Jerry Villalobos, PNM

2.2.2.2 Pajarito Substation

The Pajarito substation is located in Bernalillo County (refer to Figure 2-7). The substation has a ballistic rated concrete masonry unit wall that is 12 feet tall. The substation would be expanded north, crossing a PNM private road. The additional 6.1 acres would accommodate an additional bay added on the north side of the existing station. Adding a new bay requires extending the bus north and extending the existing ballistic rated concrete masonry unit wall around the perimeter of the substation.

Equipment to be installed:

- 3 – 345 kV breakers
- 6 – 345 kV coupling capacitor voltage transformers
- 6 – 345 kV surge arrestors
- 1 – 345 kV station dead-ends
- 8 – 345 kV disconnect switches
- 2 – OPGW fiber from the 345 kV lines

2.2.2.3 Prosperity Substation

The Prosperity substation is located in Bernalillo County, east of Interstate 25 (refer to Figure 2-8). The substation has a 14-foot-tall concrete masonry unit wall surrounding the substation. PNM would expand the substation north, 9.5 acres within PNM's existing property boundary. The perimeter expanded substation would also have a 14-foot-tall concrete masonry wall.

Equipment to be installed:

- 7 – 345 kV breakers
- 18 – 345 kV coupling capacitor voltage transformers
- 15 – 345 kV surge arrestors
- 3 – 345 kV station dead-ends
- 24 – 345 kV disconnect switches
- 1 – 345/115 kV autotransformer
- 1 – Backup generator
- 3 – OPGW fiber
- 4 – 115 kV breakers
- 5 – 115 kV disconnect switches
- 3 – 115 kV coupling capacitor voltage transformers
- 3 – 115 kV Station service voltage transformers
- 3 – 115 kV surge arrestors

2.3 Ancillary Facilities

The Project ancillary facilities are access, staging and equipment storage areas, OPGW, and wire pull tensioning sites.

2.3.1 Access

During construction, vehicular access would be required to each new structure. Access not required for operation would be restored to the original condition after construction. Access to the ROW during construction and operation of the Project would use existing state, county or municipal roads, or access on unsurfaced roads where vehicles would drive and crush vegetation to access the ROW. Following are access types anticipated to be used and or developed for the Project.

- **Existing Roads – No Improvement:** existing paved, or all weather surfaced roads that meet PNM’s construction road standards. Existing Roads - No Improvement access-road type includes existing maintained paved, or all weather surfaced roads that can be used in their current condition. No-Improvement is intended to signify that no additional new disturbance would be created outside of an established disturbed area.
- **Existing Roads – Improvements Required:** existing roads that require improvements to meet PNM’s construction-road standards. Improvements to this access-road type could include blading to create a passable road surface road, cut-and-fill activities, re-establishing drainage features, vegetation removal, boulder and rock removal, installation of wash crossings, and other improvements to provide an adequate surface to support construction and maintenance vehicles.
- **Drive and Crush:** vegetation is crushed, but not cut or removed, soil is compacted, but no surface soil is removed. A dozer, grader, or other type of equipment may be used to move boulders or other obstructions that prevent overland travel. Within the 150-foot-wide construction area for the transmission line, to ensure that equipment can install structures, construction crews may back drag arroyos to allow safe access by vehicles during construction.

Table 2-8 provides a summary of the access roads PNM anticipates would be needed to deliver equipment and materials to the staging areas and the roads used to construct Alternative route A, B.1 or the B.2 Segment Option. The roads include the access roads used to restring wires and add OPGW between the Pajarito and Prosperity substations.

Table 2-8: Construction Access Roads

Surface Type	Miles	Total
Equipment and Material Delivery ¹		
Paved	49.8	61.1
Gravel	6.4	
Unsurfaced	2.9	
Alternative A Construction		
Paved	50.3	89.2
Gravel	10.0	
Unsurfaced	28.9	
Alternative B.1 Construction		
Paved	44.0	80.9
Gravel	10.0	
Unsurfaced	26.9	
Alternative B.2 Construction		
Paved	44.0	80.7
Gravel	10.0	
Unsurfaced	26.7	

Table Note: Access roads used during construction to deliver equipment and material are the same for all three alternative routes.

During construction, temporary permission and/or ROW could be required from landowners. Access to the ROW would be in accordance with the land rights obtained as part of the grant or easement acquisition process. During operation, Project equipment to maintain the transmission line would be restricted to the ROW, access roads, and substations. PNM will determine if any county or municipal roads require improvements during final design.

2.3.2 Staging and Equipment Storage Areas

Staging areas would be established on private land at each of the Project substations and a nearby PNM owned substation for storing materials, construction equipment, and vehicles. Staging areas serve as reporting locations for workers, parking areas for vehicles and equipment, field offices, and locations for equipment maintenance. These areas will be long-term material storage yards for the Project, ranging in size from 20 to 30 acres, and will be used throughout the duration of construction of the Project for receiving, storing, and transferring required materials. Vegetation in staging areas would be removed, and the staging area would be leveled. PNM may install geotextile fabric and gravel to reduce dust and provide an all-weather surface. Portions of staging areas may be fenced for security.

All required permits and approvals needed for any additional construction storage yards not previously identified will be obtained by the construction contractor(s). The contractor will also be responsible for identifying water sources and sources for aggregate material.



2.3.3 Optical Ground Wire

Reliable and secure communications for control and monitoring of the transmission system is very important to maintain the operational integrity of the Project and of the overall interconnected system. Primary communications for relaying and control will be provided via OPGW, which will be installed with the transmission lines. Each transmission structure will have two lightning protection shield wires installed on the peaks of each of the structures. The glass fibers inside the OPGW shield wires will facilitate data transfer between facilities along the fiber path. The data transferred are required to ensure safe and reliable system control and monitoring.

2.3.4 Wire Pull/Tensioning Sites

The pull/tensioning sites are temporary use areas where equipment is set up for pulling the conductors and shield wires. Construction equipment will be set up on both sides of a pull/tensioning site at approximately 3:1 ratio or greater from the structure(s). Typical wire pull/tensioning sites will be approximately 150 feet by 400 feet. The final size will depend upon the manufacturer's recommendations and the height of the poles.

2.4 Land Acquisition

The proposed Project ROW would be 150 feet wide. A wider ROW could be required at angle and corner structures, or where special design requirements are dictated by topography. PNM would obtain easement rights on lands crossed by the 150-foot-wide ROW. The evaluation and acquisition process includes examining titles, contacting owners, surveying, preparing documents, and purchasing the property and easements.

A ROW representative would contact landowners who would analyze the property and point out to the landowner where the facilities would be located on their property. The representative would value the property and make an offer for the easement rights. As part of the ROW acquisition process, the ROW agent would discuss the construction schedule and construction requirements with the owner of each parcel. To ensure safe construction of the transmission line, fences, crops, or livestock may need special consideration. Fences may need to be moved; temporary or permanent gates may need to be installed; and livestock may need to be moved. In each case, the ROW agent and construction personnel would coordinate these activities with the landowner.

2.5 Cost Estimate

Projected costs for Alternative A and Alternative B are estimates based on an estimated cost per mile for the typical structure types and substation equipment. Since property acquisition, access costs, or segment-specific design criteria are uncertain, these are not full construction estimates and were developed for comparative purposes only. Based on preliminary engineering considerations, the major components of these preliminary estimates for Alternative A and B are shown in Table 2-9. PNM will continue to refine its cost estimates during the design.

Table 2-9: Preliminary Cost Estimate

Alternative	Materials	Labor	Total
Estimated Construction Cost			
Alternative A	\$117.4M	\$17.0M	\$134.4M
Alternative B.1 and B.2	\$117.4M	\$18.7M	\$136.1M
Pajarito to Prosperity	\$98.3M	\$4.1M	\$102.4M

Operating and maintenance costs for transmission lines and substations are the cost of inspections, maintenance and planned equipment replacement. Substations require a certain amount of maintenance to keep them functioning in accordance with accepted operating parameters and NESC and NERC requirements. Substations must be kept free of vegetation and drainage must be maintained. Annual operating and maintenance cost for 345 kV transmission lines in New Mexico vary and PNM estimates annual operation and maintenance costs are approximately \$300 to \$500 per mile. The cost to maintain a substation is approximately \$9,300 per year.



3.0 Construction

The Project will consist of three phases of construction: pre-construction, construction, and reclamation. The Project would result in both temporary disturbance areas and permanent disturbance areas. Table 3-1 lists the approximate temporary and permanent disturbances for the Project. These disturbance estimates are based on the amount of disturbance expected for the option(s) that would result in the most disturbance. These estimates would be recalculated following further development and design of the Project.

All construction would be completed in accordance with the POD, which would be completed prior to the initiation of construction. The final POD will include:

- Emergency Preparedness and Response Plan
- Traffic Control Plan
- Stormwater Pollution Prevention Plan Framework
- Spill Prevention, Containment, and Countermeasures Plan
- Erosion and Dust Control Plan
- Hazardous Materials Management Plan
- Reclamation, Revegetation, and Monitoring Plan

The final POD will also include more detailed descriptions of construction activities and permit requirements.

3.1 Temporary and Permanent Disturbance

The Project would require both temporary and permanent disturbances as shown in Table 3-1 for the three alternatives. These estimates would be recalculated as necessary in future iterations of the POD based on further development and design of the Project. Dimensions for land temporarily disturbed during construction are listed below.

Table 3-1: Temporary and Permanent Surface Disturbance

Feature	Description	Number	Alternative A (acres)	Alternative B.1 (acres)	Alternative B.2 (acres)
Temporary Disturbance					
H-frame structure work area	150 feet by 200 feet per structure	Alternative A: 238	165.5		
		Alternative B.1: 211		145.3	
		Alternative B.2: 211			145.3
Wire pulling/ tensioning	150 feet by 400 feet every 3 to 5 miles	Alternative A: 9-14	12.4-19.3		
		Alternative B.1: 8-13		11.0-17.9	
		Alternative B.2: 8-13			11.0-17.9
Splicing sites	100 feet by 100 feet every 9,000 feet (about 1.7 miles)	Alternative A: 24	5.5		
		Alternative B.1: 22		5.1	
		Alternative B.2: 22			5.1



Feature	Description	Number	Alternative A (acres)	Alternative B.1 (acres)	Alternative B.2 (acres)
Staging areas ¹	20-30 acres on private lands at the three substation sites and an additional PNM owned property	4	120	120	120
Permanent Disturbance^{1,2}					
Permanent structure pad	6 feet by 40 feet per H-frame structure	Alternative A: 238	1.3		
		Alternative B.1: 211		1.2	
		Alternative B.2: 211			1.2
Rio Puerco substation	40.1 acres				
Pajarito substation	6.1 acres				
Prosperity substation	9.5 acres				

Table notes: 1 Portions of the area disturbed during substation construction may overlap with staging areas. 2 The area occupied by the existing substations are not included in the temporary disturbance area.

3.2 Construction Workforce and Equipment

The workforce and equipment vary between the construction phases. The project is about five miles west of the Albuquerque metro area that includes Albuquerque, Rio Rancho, and Los Lunas. PNM anticipates that the construction workforce will be within a 60-minute drive of the Project. Worker commute to and from the site would take place during the typical morning and evening peak hours. In addition, specialty workers are expected to arrive on-site during non-peak hours.

The construction workforce would include skilled and unskilled labor types, such as:

- linemen
- groundmen
- heavy equipment operators
- fiber splicing technicians
- refueling staff
- cable crane operator crew supervisor

Transmission-line construction commences with contractor mobilization. The contractor would mobilize equipment and personnel to the construction site at various stages in the Project schedule depending on operational requirements. A portion of the pre-construction workforce would mobilize to the site approximately 1 week prior to the start of work. During this time, they would transport equipment and construction materials to designated construction staging areas.

The workforce is expected to arrive in personal or company vehicles at one of the three staging areas. Vehicles not needed for construction activities would be staged at designated locations within the transmission line construction corridor or at one of the four staging areas.



Construction would generally follow a 12-hour, 5-day workweek, occurring between 7 a.m. and 5 p.m., Monday through Friday. Deliveries to staging areas are expected to be Monday through Saturday during daylight hours. The workweeks and schedule may be adjusted in areas near residences to reduce disturbance.

Material deliveries normally would be on weekdays between 7:00 a.m. and 5:00 p.m. Additional hours and/or weekends may be necessary to make up schedule deficiencies or to complete critical construction activities. Table 3-2 provides information on vehicle trips to the four staging areas, commute distance, and the percentage of paved roads. The number of personnel on site will range between 16 to 220 with the peak workforce during construction. The estimated workforce, construction equipment or schedule is the same for the two alternatives. If necessary, PNM will prepare a traffic control plan that will be included in the final POD.

Table 3-2: Construction Commute Distance and Trips

Project Phase	Number of Crews or Vehicles	Number of Workers	Number of Round Trips per Day	Daily Commute Distance in Miles 1 way ⁴	Estimated % Paved Roads Alternative A	Estimated % Paved Roads Alternative B.1 and B.2
Pre-Construction						
Workforce	11	27	2	1,350	33%	43%
Pre-construction vehicles ¹	8		2	660		
Construction						
Workforce	50	220	2	9,950	33%	43%
Construction vehicles ²	164		2	1,760		
Deliveries	20	8	20	825	86%	86%
Reclamation						
Workforce	4	16	2	1,282	33%	43%
Reclamation vehicles ³	13		2	385		
Deliveries	2	4	4	165	86%	86%

- Table Notes: 1. Pre-construction vehicles are anticipated to commute from PNM’s equipment yard in Albuquerque.
 2. Construction vehicles will be staged at or near each substation.
 3. Reclamation vehicles may commute from PNM’s equipment yard in Albuquerque or from the staging area at each substation.
 4. Estimated local workforce during pre-construction, construction, and reclamation is 40% would commute from communities within a 60-minute drive time.

The equipment on-site would be dependent on the stage of development and may include pickup trucks, bucket trucks, heavy equipment, cranes, reel trucks, cable-pulling trailers, and splicing trailers. The specific timelines for the labor and equipment would be developed as the Project moves closer to construction. An estimate of the equipment needed for the transmission line is shown in Table 3-3.



Table 3-3: 345 kV Transmission Line Equipment

Equipment	Quantity	Hours per Day	Days per Week	Estimated Duration (weeks)
Project Management/Inspection				
Truck – pickup	15	6	6	60
Project Supervision – Contractor				
Truck – pickup	10	8	6	60
Maintenance – Contractor				
Truck – pickup	1	6	6	60
Truck – flatbed (1-ton)	2	6	6	60
Truck – mechanics (2-ton)	5	8	6	60
Survey and Staking				
Truck – pickup	2	6	6	4
Truck – flatbed (1-ton)	2	6	6	4
Multi-purpose Yards				
Truck – pickup	1	4	6	56
Truck – flatbed (1-ton)	1	2	6	56
Truck – flatbed (2-ton)	1	2	6	56
Forklift (5-ton)	1	8	6	56
Forklift (10-ton)	1	8	6	56
Crane RT (20-ton)	1	2	6	56
Trailer – office	1	10	6	56
Generator – portable (office)	1	10	6	56
Access Road Maintenance				
Truck – pickup	1	2	6	56
Truck – flatbed (1-ton)	1	2	6	56
Truck – flatbed (2-ton)	1	4	6	56
Truck – water	1	6	6	56
Truck – fuel	1	4	6	56
Trailer – lowboy	2	6	6	56
Grader – road	1	8	6	56
Dozer – with blade	2	8	6	56
Foundations and Substations				
Truck – pickup	6	8	5	56
Truck – flatbed (1-ton)	6	4	5	56
Truck – flatbed (2-ton)	2	5	5	56
Truck – water	2	6	5	56
Truck – fuel	1	4	5	56
Truck – dump (10Y)	2	6	5	56
Truck – semi-trailer	2	8	5	56
Trailer – lowboy	1	6	5	56
Trailer – flatbed	2	6	5	56
Truck – flatbed with boom (5-ton)	1	6	5	56
Truck – concrete	4	6	5	56
Drill rig – digger	2	8	5	56



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Equipment	Quantity	Hours per Day	Days per Week	Estimated Duration (weeks)
Drill rig – pneumatic wagon	1	6	5	56
Backhoe 7-9 tons – with bucket	1	4	5	56
Backhoe 10-20 tons – with bucket	2	6	5	20
Wheel loader (7-9 tons)	1	6	5	20
Vibratory roller (9-10 tons)	1	6	5	20
Dozer – with blade	2	4	5	56
Loader – with bucket	2	4	5	56
Crane RT (20-ton)	1	4	5	56
Forklift (5-ton)	1	4	5	56
Loader – bobcat	1	4	5	56
Generator – portable (5 horsepower)	2	4	5	56
Material Hauling				
Truck – flatbed (1-ton)	1	4	6	56
Truck – flatbed (2-ton)	1	4	6	56
Truck – semi-trailer	1	8	6	56
Truck – flatbed with boom (5-ton)	1	4	6	56
Trailer – flatbed	6	8	6	56
Forklift (10-ton)	1	4	6	56
Structure Installation – Conventional				
Truck – pickup	3	8	5	36
Truck – flatbed (1-ton)	6	4	5	36
Truck – flatbed (2-ton)	2	4	5	36
Crane RT (20-ton)	2	6	5	36
Crane RT (75-ton)	2	6	5	36
Crane (150- to 250-ton)	2	6	5	36
Generator – portable (5 horsepower)	2	2	5	36
Compressor - pneumatic	2	4	5	36
Wire Installation				
Truck – pickup	6	8	5	24
Truck – flatbed (1-ton)	10	6	5	24
Truck – flatbed (2-ton)	2	8	5	24
Truck – water	1	6	5	24
Truck – flatbed with boom (5-ton)	6	8	5	24
Truck – splicing	1	4	5	24
Truck – semi-trailer	3	8	5	24
Trailer – flatbed	4	4	5	24
Trailer – lowboy	3	4	5	24
Trailer – reel stand	12	4	5	24
Crane RT (35-ton)	3	2	5	24
Puller – triple drum	1	2	5	24
Puller – single drum	1	2	5	24
Puller – sock line	2	2	5	24



Equipment	Quantity	Hours per Day	Days per Week	Estimated Duration (weeks)
Tensioner – conductor	1	2	5	24
Tensioner – shield wire	1	2	5	24
Dozer – sagging	2	2	5	24
Dozer – with blade	2	2	5	24
Backhoe – with bucket	1	2	5	24
Drill rig – digger	1	2	5	24
Compressor – pneumatic	1	2	5	24
Generator – portable (5 horsepower)	2	2	5	24
Helicopter – pilot line (small)	1	8	5	24
Restoration				
Truck – pickup	3	6	6	8
Truck – flatbed (1-ton)	3	6	6	8
Truck – flatbed (2-ton)	1	4	6	8
Truck – water	1	6	8	8
Trailer – lowboy	1	6	6	8
Backhoe – with bucket	1	4	6	8
Loader – with bucket	1	4	6	8
Dozer – with blade	1	8	6	8
Tractor – 4-wheel drive with chisel and/or seeder	1	8	6	8

Trucks and construction vehicles would be serviced from off-site facilities. The use, storage, transport, and disposal of hazardous materials used in construction of the facility would be carried out in accordance with federal, state, and county regulations. No extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 335 of the Code of Federal Regulations) are produced, used, stored, transported, or disposed of because of project construction. Material Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel.

Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted. Other compostable materials, such as vegetation, might also be composted off-site. Non-hazardous construction materials that cannot be reused or recycled would be disposed of at municipal county landfills. Hazardous waste and electronic waste would not be placed in a landfill but rather would be transported to a hazardous waste handling facility.

3.3 Construction Schedule

The expected construction duration is 15 months ending in 2029. PNM will continue to refine the design of the Project during the PRC review process. Final engineering surveys would determine the



exact locations of structures, access roads, and other features prior to the start of construction and would be included in the final POD. Multiple spans would be under construction at the same time, and most construction activities (access, structures, substation expansion, and line stringing) would occur in the first 12 months.

Although the construction rate of progress would be reduced during winter, it is anticipated that construction would continue through the winter months in the lower-elevation areas of the Project, except during winter or summer storms. During storms construction would be suspended on some portions of the ROW during the peak winter months and construction resources would either be demobilized or shifted to other segments of the Project.

3.4 Pre-Construction Activities

Pedestrian surveys for cultural and biological resources were conducted as part of permitting efforts for these resources. The survey corridor for cultural and biological surveys is 300 feet (150 feet on either side of the centerline) and 450 feet (225-foot radius) at the inflection point on each route. Prior to construction, the ROW and temporary and permanent access for construction and maintenance will be surveyed and staked to locate the centerlines accurately.

3.4.1 Storm Water Pollution Prevention Plan

A stormwater pollution prevention plan (SWPPP) will be required for the Project. This permit is required for construction activities that disturb one or more acres. The SWPPP is more than a sediment and erosion control plan. It will describe all the construction sites operator's activities to prevent contamination, control sedimentation and erosion, take good housekeeping measures, and comply with the requirements of the Clean Water Act. The SWPPP will contain several methods for dust control, but the contractor will have other methods for dust suppression if needed.

3.4.2 Environmental and Safety Training

Prior to gaining access to the ROW, all construction and maintenance workers will be required to participate in an environmental education program. The training will include the SWPPP. This program will be presented by PNM prior to the start of construction. At a minimum, the program will include the following topics: biological, cultural, paleontological, and other environmental requirements and protection measures, including signage, fencing (access/avoidance), PNM notification for spills, and cultural resource management discovery. In addition, the construction contractor(s) will be responsible for providing safety training, as required. Specific health and safety information will be included in the final POD, including a description of the safety requirements specifically associated with construction activities (e.g. construction of access roads, blasting, fire protection).

All construction, operation, and maintenance activities will be required to comply with OSHA regulations. PNM will be notified by the construction contractor(s) of any accidents that occur during construction of the Project. Notification procedures for emergencies will be described in the



final POD in the Emergency Preparedness and Response Plan Guidelines, as well as the Pocket Guide carried by personnel.

3.4.3 Centerline Cadastral Surveys

An on-ground cadastral survey will be completed to accurately locate the centerline and edges of the ROW and permanent access for construction and maintenance. The exact centerlines will be determined to implement design criteria and satisfy the mitigation measures identified through the biological and cultural resources studies. Before cadastral survey begins, required permits to survey state lands or rights of entry for privately owned land will be obtained. Construction surveys will consist of transmission line and access trail centerline locations and ROW boundaries where necessary. Structure locations will be flagged and staked, and the proposed centerlines will be flagged and staked where needed.

3.4.4 Geotechnical Investigation

Geotechnical investigation will be completed to collect information regarding subsurface stability for transmission line structures and substations. Information from geotechnical investigations will be used in the final design of each transmission tower structure and foundation. The geotechnical investigation will consist of the drilling and sampling of soils to a typical depth of 30 feet (or refusal) below the existing ground surface. The boreholes will have a diameter of approximately 8 inches and will be backfilled with auger cuttings and on-site soils. Surface disturbance will be limited to the actual tracks left by the drill rig and support vehicles within the work areas.

3.4.5 Clearing and Grading

The overland drive-and-crush method would primarily be used to prepare the work site in areas that are relatively level and that have low-growing grasses and shrub species. This method involves crushing but not removing vegetation. In similarly level areas where the vegetation is dense, aboveground cutting methods would be used with the intent of leaving the root crown intact.

Prior to grading, the staging areas and substation expansion areas would be cleared and grubbed of vegetation. Materials suitable for compaction would be stored in stockpiles at designated locations using erosion prevention methods. If soil is to be excavated or graded in areas of temporary disturbance, topsoil will be salvaged and redistributed prior to reclamation.

Vegetation in temporary work areas will be trampled but not cleared or graded if not necessary to do so. The soil would be compacted but only excavated for the foundations as described in Table 3-1. Excess soil from foundation hole excavations would be placed around the base of each structure to provide positive drainage away from the structure. When grading must occur to create a safe, level working space for structure installation, the topsoil would be segregated and then spread back over the site to provide a suitable seed bed for reclamation efforts.



3.4.6 Water Use

Water uses during transmission and substation construction is for dust suppression, concrete for structure foundations and soil compaction. Construction contractors must obtain the necessary water from municipal or commercial sources, previously allocated supplies, or through temporary agreements with landowners who possess existing water rights. Written approval is required for all procured water, specifying usage amount. The amount of water required per mile for dust suppression within the transmission line corridor is estimated to be 23,104 gallons per mile with a typical water application rate for dust suppression of 4,000 gallons per acre per pass. PNM assumes one pass per day during grading and surface preparation at each substation would be necessary.

Table 3-4 describes the estimated water use during construction for soil compaction, dust suppression on unsurfaced access roads, vehicle washing, and other purposes during the 15-month construction timeframe. Total dust suppression water use for Alternative A is approximately 68.8-acre feet. Total dust suppression water use for Alternative B.1 is approximately 65.0-acre feet and for Alternative B.2 is approximately 64.6-acre feet. Total water use for the three substations is approximately 12.2 acre-feet including dust suppression needed to relocate the earthen berm on the west side of the Rio Puerco substation.

Table 3-4: Estimated Construction Water Use for Dust Suppression

Project Component	Million Gallons	Acre Feet
Alternative A transmission line, access roads and staging areas	22.41	68.8
Alternative B.1 transmission line, access roads and staging areas	21.18	65.0
Alternative B.2 transmission line, access roads and staging areas	21.06	64.6
Substations and berm relocation	3.98	12.2

3.4.7 Staging Areas

Construction personnel would report to this location at the beginning of each workday. Following the assignment of daily duties, the contractors would be dispatched to their respective work areas along this transmission line via approved vehicles. The staging areas would be used mostly between 7 AM and 4 PM; however, personnel and deliveries may access the yard outside of these hours.

Staging areas would serve as an equipment maintenance area for a higher level of maintenance beyond what a mobile crew can provide (oil changes, fluid replacements, tire changes, etc.). The development of the staging area would follow the following process:

1. Staging area would be staked.
2. Contractor would install mitigation measures and any measures required by construction permits or regulatory agencies.
3. Contractor would grade the site using equipment such as a bulldozer and grader to create a level site, with designated areas for field offices.
4. Portable office trailers would be delivered and installed at the site.
5. Temporary overhead power would be run to the site for exterior lighting and for the portable office trailers.
6. Fencing would be installed at access points to control access to the site.

After construction is complete, all equipment would be removed, and the staging areas would be reclaimed as described in the Site Restoration and Revegetation Plan developed for the final POD.

3.5 Substations

Substation construction would include site grading, property and substation fencing, and installation of electrical facilities. The site would be excavated and graded to accommodate the required construction and permanent facility equipment, and electrical structures. Area lighting would be placed near major electrical equipment and oriented lights would be placed near entrances and the substation gate for night entry and would remain on throughout the night. The typical construction sequence for substations is described below.

- Earth-moving equipment (dump trucks, water trucks, graders, backhoes, and dozers) would be used to grade substation expansion areas. Dump trucks would be used to bring in fill materials and haul away unused excavation materials. The expansion area for the substation would be graded flat with a drainage slope. Site design may include additional drainage features and/or stormwater retention ponds. Water trucks would be used to control dust during site grading and construction.
- Once the site is level, a security and access-control fence or wall would be erected around the site.
- Foundations would be excavated and footings/piers poured. One of two types of foundation, drilled piers or slabs, would be used. Excavation of foundations would use either a large drill rig or backhoe, depending on the size of the site. Reinforcing steel and/or equipment anchor bolts would be placed in the excavation along with concrete forms prior to the pouring of concrete. Excavation material not suitable for reuse would be hauled away and properly disposed of.
- Control buildings would be constructed of either masonry block or pre-engineered steel, and construction would be either concurrent with the foundations (masonry block) or after foundations (pre-engineered steel).

- Poured foundations would be trenched to allow for installation of conduit, grounding conductors, and conductors via cable trench. Once conductors are installed and connections made, the trenches would be backfilled and in some cases a sand bedding material would be in-filled prior to concrete backfilling.
- Equipment (circuit breakers, disconnect switches, transformers, reactors, capacitors, series capacitors, surge arrestors and instrument transformers, etc.) would be set on the completed foundations using cranes and man-lifts as needed. A rigid tubular bus would be used for the main conductors and flexible cable connections made to the equipment. All high-voltage conductors would be supported by insulators.
- Control and protection panels would be installed in the control building and connected to equipment in the yard using control and power cables installed in the cable trenches and conduits. The entire site would be finished with a crushed-rock surfacing material, spread, and compacted as necessary.
- Once construction is complete, all equipment and protective and control systems would be tested prior to start-up and energizing.
- A grounding system is required in each substation for detection of faults and for personnel safety. The grounding system typically consists of buried copper conductor arranged in a grid system and driven ground rods, typically 8 to 10 feet long. The ground rods and any equipment and structures are connected to the grounding conductor grid. The amount of conductor and length and number of ground rods required are calculated based on fault current and soil characteristics.
- Security fencing that is either chain link or block walls, are installed around the entire perimeter of each new or expanded substation to protect sensitive equipment and prevent accidental contact with energized conductors. Locked gates would be installed at appropriate locations for authorized vehicle and personnel access.
- Foundations for supporting structures are of two types: spread footings or drilled piers. Spread footings are placed by excavating the foundation area, placing forms and reinforced-steel and anchor bolts, and pouring concrete into the forms. After the foundation has been poured, the forms would be removed, and the surface of the foundation dressed. Pier foundations are placed in a hole generally made by a truck mounted auger. Reinforced-steel and anchor bolts are placed into the hole using a truck-mounted crane. After the foundation has been poured, the forms would be removed, the excavation would be backfilled, and the surface of the foundation dressed.
- Equipment foundations for circuit breakers and transformers would be slab-on-grade type. These foundations are placed by excavating the foundation area; placing forms, reinforced steel, and anchor bolts (if required); and placing concrete into the forms. After the foundations have been poured, the forms would be removed, and the surface of the



foundation dressed. Concrete would be hauled to the site in concrete trucks. Excavated material would be spread at the site or disposed of in accordance with local ordinances.

- Structures and equipment would be attached to the foundations by means of threaded anchor bolts embedded in the concrete. Some equipment such as transformers and reactors may not require anchor bolts.

3.6 Transmission Line

The transmission line would be constructed with crews working continuously along the transmission line ROW. Construction includes the following activities:

- Access road construction
- Clearing and grading of structure pads
- Excavation and foundation installation
- Structure erection
- Conductor installation
- Clean-up and site reclamation

3.6.1 Structures Installation and Grounding

The structure sites will have a temporary 150-foot by 200-foot temporary work area and permanent structure area of 6 feet by 40 feet (within the proposed 150-foot-wide ROW). The temporary work areas will be minimized to the maximum extent. Dead end and angle structure areas will have a 150 foot by 200-foot (mostly within the proposed 150-foot-wide ROW) temporary work area for construction. Vegetation in these temporary work areas will be trampled but not cleared.

Vertical excavations for foundations will be made with power drilling equipment. Where soils permit, a vehicle-mounted power auger or backhoe will be used. H-frames structures will require that each leg of the H-frame be directly embedded or supported on drilled concrete piers. Holes will be drilled in the ground using a truck- or track-mounted auger. For poles that will be directly embedded, the pole is placed in the hole after excavation and native, select, flowable fill, or concrete will be used to fill the annulus around the perimeter of the hole. If backfill is imported, material will be obtained from approved weed-free commercial sources or from areas free of noxious weed species. Similarly, where solid rock is encountered, blasting may be required.

Foundation holes left open or unguarded will be covered to protect the public and wildlife. All safeguards associated with using explosives (e.g., blasting mats) will be employed. Blasting activities will be coordinated with the appropriate agencies, particularly for purposes of safety and protection of sensitive areas and biological resources. In extremely sandy areas, water or a gelling agent will be used to stabilize the soil before excavation. Direct embedded H-frame tangent structures would be predominantly used. Poles would be directly embedded into excavated holes at a depth based on results of geotechnical studies. If soils are unsuitable for direct embedment, a drilled pier may be needed.

In areas where H-frame structures are being used spoils may require spreading beyond the temporary work area to maintain grades and runoff, and to facilitate restoration. In these areas, the topsoil will be salvaged and set aside to be placed over the subsoil material during restoration. These locations will be mitigated on a case-by-case basis. The foundation excavation and installation require power augers or drills, cranes, material trucks, and ready-mix concrete trucks to be able to access work areas for the foundations.

Grounding rods will be installed next to the structure foundations and will be bonded to the structure. H-frame and steel-pole structure will typically have two grounds installed per structure. After the ground rods have been installed, the grounding will be tested to determine the resistance to ground.

3.6.2 Structure Erection

Structures would be brought to the site on tractor-trailer flatbeds and offloaded to the temporary staging areas within the substations or in the proposed 150-foot-wide ROW. Steel structure sections may be delivered to structure locations where they will be fastened together to form a complete structure and hoisted into place by a crane. Concrete for use in constructing foundations will be dispensed from concrete mixer trucks and best management practices will be employed to minimize impacts from spilled concrete. After line construction, leveled structure pads will be stabilized to reduce erosion but will remain in place.

3.6.3 Conductors, Overhead Wire, and Optical Ground Wire Installation

Once poles are erected, the conductor will be strung generally using a wire truck, crane and/or helicopter, splicing rig and puller from conductor pull and tension sites at the end of the power line interconnection alignment moving from one pole to the next. Each conductor will be pulled into place at a pre-calculated sag and then tension-clamped to the end of each insulator using sag cat and static truck/tensioner equipment. The sheaves and vibration dampers and accessories will be removed once installation is complete.

Prior to pulling and tensioning, workers would install temporary guard structures where the line crosses public roadways, existing transmission lines or other obstacles to prevent sock line or conductors from dropping onto the road or object. Guard structures consist of H-frame wood pole structures temporarily placed on either side of the obstacle and would follow the same procedures for installation as described for the structures above. Equipment for erecting guard structures will include augers, line trucks, pole trailers, and small cranes. The specific locations and type of guard structures to be used would be determined in coordination with the construction contractor(s) during final design.

Sites for tensioning and pulling equipment typically measure approximately 150 feet wide by 400 feet long. The size will depend upon the manufacturer's recommendations and the height of the poles. The sites will be about every 3 to 5 miles. However, sites for tensioning and pulling equipment on either side of a large angle structure may be larger. At turning points with angles greater than 20 degrees, additional temporary space would be required outside the permanent



ROW for pulling and tensioning sites. Sites for tensioning equipment and pulling equipment will be identified in the final POD.

Reels of conductor and shield wire would be delivered to the ROW and loaded onto vehicle-mounted pulling machines. Heavy vehicles would be used to pull the shield wire and conductor bundles into place with powered pulling equipment at one end and powered braking or tensioning equipment at the other end. A pilot wire would be threaded through pulleys suspended from the structure insulators. The pilot wire would typically be flown into place using a helicopter. The pilot wire would then be attached to a stronger pulling wire, which would be used to thread the shield wire and conductor bundles into place without contacting the ground. Conductor splicing would occur during the conductor installation process and entails the joining of two conductor ends by using implosion sleeves or clamps. The splicing pads measure approximately 100 by 100 feet and would be used every 9,000 feet (approximately 1.7 miles) along the transmission line.

OPGW and conductors will be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end of a conductor segment. Tensioners, pullers, line trucks, wire trailers, dozers, pickups, and tractors needed for stringing and anchoring the ground wire or conductor will be located at these sites.

3.6.4 Helicopter Construction

Constructing portions of the project using a helicopter may be the optimal construction method for specific activities (e.g., stringing the transmission conductor). Temporary landing zones would be located on private property or near the transmission line alignment. The helicopter(s) would be staged and refueled at local airports near the transmission line alignment. A small helicopter could be used to install pulling lines (called sock lines) to facilitate installing conductors and overhead ground wires. The specific types of helicopters used will be based upon the weight of the load being transported and the altitude of the flight path.

Prior to helicopter operations, the construction contractor will notify the appropriate land management agencies of proposed flight plans. Prior to helicopter operations, the contractor in charge will notify the appropriate land management agencies of proposed closure areas. Coordination would also be required with Double Eagle II Airport, City of Albuquerque Aviation, and Kirtland Air Force Base.

3.7 Reclamation

Final cleanup and reclamation would occur immediately following construction. Cleaning up during and after construction includes removing construction debris. Waste materials would be removed and recycled or disposed of at appropriate facilities. After construction is complete, temporary work areas would be graded to the approximate original contour, and the area would be revegetated with approved seed mixtures. Specific details of reclamation activities would be described in the final POD.



Interim reclamation may be necessary to restore areas disturbed during construction. Interim reclamation includes maintaining active topsoil, establishing erosion control measures, noxious and invasive weed control, and minimizing vegetation and soil loss. All seed would meet all the requirements of the Federal Seed Act and applicable New Mexico laws regarding seeds and noxious weeds. Only seed certified as “noxious weed free” would be used.

Reclamation would follow these guidelines to prepare ground surfaces in disturbed areas:

1. The surface would be cleared of foreign materials, such as garbage, paper, and other materials, but all rocks, limbs, or minor woody debris would be left in place. The Company or its contractor would prepare the seedbed immediately prior to seeding.
2. Under favorable soil-moisture conditions, equipment such as a drill or disk would be used to roughen the topsoil layer to create the desired surface texture before the seed is applied. Dirt clods and chiseled voids resulting from the roughening process increase the surface area for water collection and provide micro-sites for seed establishment.
3. Ripping, disking, or harrowing would be performed parallel to surface contours. In areas that already have the desired soil characteristics; the seedbed does not need to be prepared. Other seeding methods, such as drilling, hydroseeding, or aerial application, may be used depending on the area that requires reclamation and site conditions.

Mulch would be added if necessary. An area would not be seeded when wind velocities prohibit the seed mix from being applied evenly. If the seed does not germinate and establishes an agreed-upon level of vegetation cover (e.g., consistent with adjacent site conditions) after two growing seasons, the area where adequate vegetation cover has not established would be reseeded.

4.0 Operation and Maintenance

4.1 Operations and Maintenance Activities

Regular ground and aerial inspections would be performed in accordance with the PNM's established policies and procedures for transmission line inspection and maintenance. PNM's transmission lines and substations would be inspected for corrosion, equipment misalignment, loose fittings, vandalism, and other mechanical problems. The need for vegetation management would also be determined during inspection patrols. Routine operation and maintenance activities are performed from existing access roads with no surface disturbance. Approximate miles of access roads that would be traversed for each alternative are listed in Table 4-1. Conductors could require restringing to repair damages.

Maintenance would occur as needed and could include activities such as repairing or replacing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, and vegetation management. Vegetation management will follow PNM's Integrated Vegetation Management to maintain the ROW. PNM will comply with state, county, and local requirements to manage noxious weeds within the ROW, along access roads, and temporary use areas.

Table 4-1: Operation and Maintenance Access Roads

Surface Type	Miles	Total Miles
Alternative A Operation		
Paved	50.3	63.6
Gravel	10.0	
Unsurfaced	3.3	
Alternative B.1 Operation		
Paved	44.0	57.2
Gravel	10.0	
Unsurfaced	3.3	
Alternative B.2 Operation		
Paved	44.0	57.0
Gravel	10.0	
Unsurfaced	3.1	

Vegetation management practices along the ROW would be in accordance with PNM's clearing specifications and vegetation management plans. Many of the transmission lines traverse arid areas characterized by low-growing vegetation. The wire-border zone method to controlling vegetation is an approach used by PNM on transmission and distribution lines. The wire zone is the linear area along the ROW under the wires and extending 10 feet outside of the outermost phase conductor.



Vegetation in the wire zone would be maintained to consist of native grasses, forbs, and low-growing shrubs that remain under 5 feet tall at maturity. The border zone is the linear area along each side of the ROW extending from the wire zone to the edge of the ROW.

4.2 Emergency Response

System operations are remotely managed and monitored from control rooms at PNM's control center in Albuquerque, New Mexico. Electrical outages or variations from normal operating protocols would be sensed and reported at these operation centers. Also, the substations are equipped with remote monitoring, proximity alarms, and in some cases video surveillance. When the control room detects an incident, dispatchers notify the operations staff responsible in the area(s) affected and crews and equipment would be organized and dispatched to respond to the incident.

The implementation of routine operation and maintenance activities on powerlines would minimize the need for most emergency repairs. The equipment necessary to accomplish emergency repairs is similar to the equipment used to conduct routine maintenance. Emergency maintenance may be required to repair damage from natural hazards, fires, or human actions affecting a line. Such work is required to eliminate a safety hazard, prevent imminent damage to the powerline, or restore service if there is an outage.

5.0 Decommissioning and Restoration

The operational lifespan of the Project is anticipated to be 60 years as determined by electrical demand, maintenance requirements, and the expected life of facilities and components. At that time, the continued feasibility of the Project and the integrity of structures associated with the Project will be evaluated. If the Project is decommissioned after this 60-year period, Project equipment will be dismantled and removed from the site, and disturbed land associated with the Project will be reclaimed. The Project's decommissioning has the following goals:

- Remove aboveground structures unless converted to other uses.
- Remove the underground equipment unless it is determined that it is preferable to abandon them in place to avoid further impacts.
- Restore grades in the disturbed areas to match the natural gradients.
- Reestablish native vegetation in the disturbed areas, depending on the local climatic conditions at the time of decommissioning; and
- Conform to applicable laws, ordinances, regulations, and standards and local/regional plans.

5.1 Pre-decommissioning Activities

Pre-decommissioning activities consist of preparing the site area for dismantling and removal of transmission line structures. These activities include review of the ROW to reduce potential personnel and environmental exposure and to facilitate decommissioning. If found, hazardous material and containers would be collected for off-site disposal in compliance with federal, state, and local requirements and consistent with related project management plans.

Prior to decommissioning, environmental records would be reviewed to determine if additional surveys are needed. Sensitive cultural and biological resources potentially impacted by decommissioning activities would be avoided to the extent practicable through flagging or temporary fencing. If sensitive resources cannot be avoided, decommissioning could employ mitigation measures required during construction, including a cultural resource monitoring plan.

5.2 Decommissioning Activities

If the project is decommissioned, materials that can be reused or recycled will be hauled away from the site and sold. Materials that cannot be reused or recycled will be dismantled and hauled to the nearest approved landfill. Hazardous materials that cannot be reused or recycled will be disposed of at approved facilities.



PNM will remove foundations to below ground surface, restore contours over the foundations to approximate pre-construction conditions to the maximum extent possible. During these reclamation operations, it is anticipated that fugitive dust abatement measures comparable to those applied during construction will be implemented. Conductors and tower steel will be sold for reuse or recycling.

Upon consultation with NMSLO, Bernalillo and Sandoval Counties, City of Albuquerque and City of Rio Rancho, post-Project topography may be minimally graded to match the natural gradient to the extent practical, and disturbance areas reclaimed to the extent practical.

Although various types of decommissioning/demolition equipment would be used to dismantle each type of structure or piece of equipment, decommissioning and dismantling would proceed according to the following general staging process:

1. Assess existing site conditions, survey the site grounds, and prepare the site for demolition.
2. Dismantle and remove aboveground structures.
3. Remove foundations consistent with applicable laws, ordinances, regulations, and standards.
4. Contour and reclaim the site and roads used only for the Project in accordance with applicable laws, ordinances, regulations, and standards, to the extent feasible, while disturbing as little of the other site areas as feasible.

Because the conditions that would affect the decommissioning decision and overall goals for reclamation are uncertain, the Decommissioning Plan would be reviewed by the applicable regulatory agencies 12 months prior to the planned permanent closure, and a final decommissioning and reclamation plan would be prepared. The activities and processes described in this Section and Section 3.7 would be updated and incorporated.



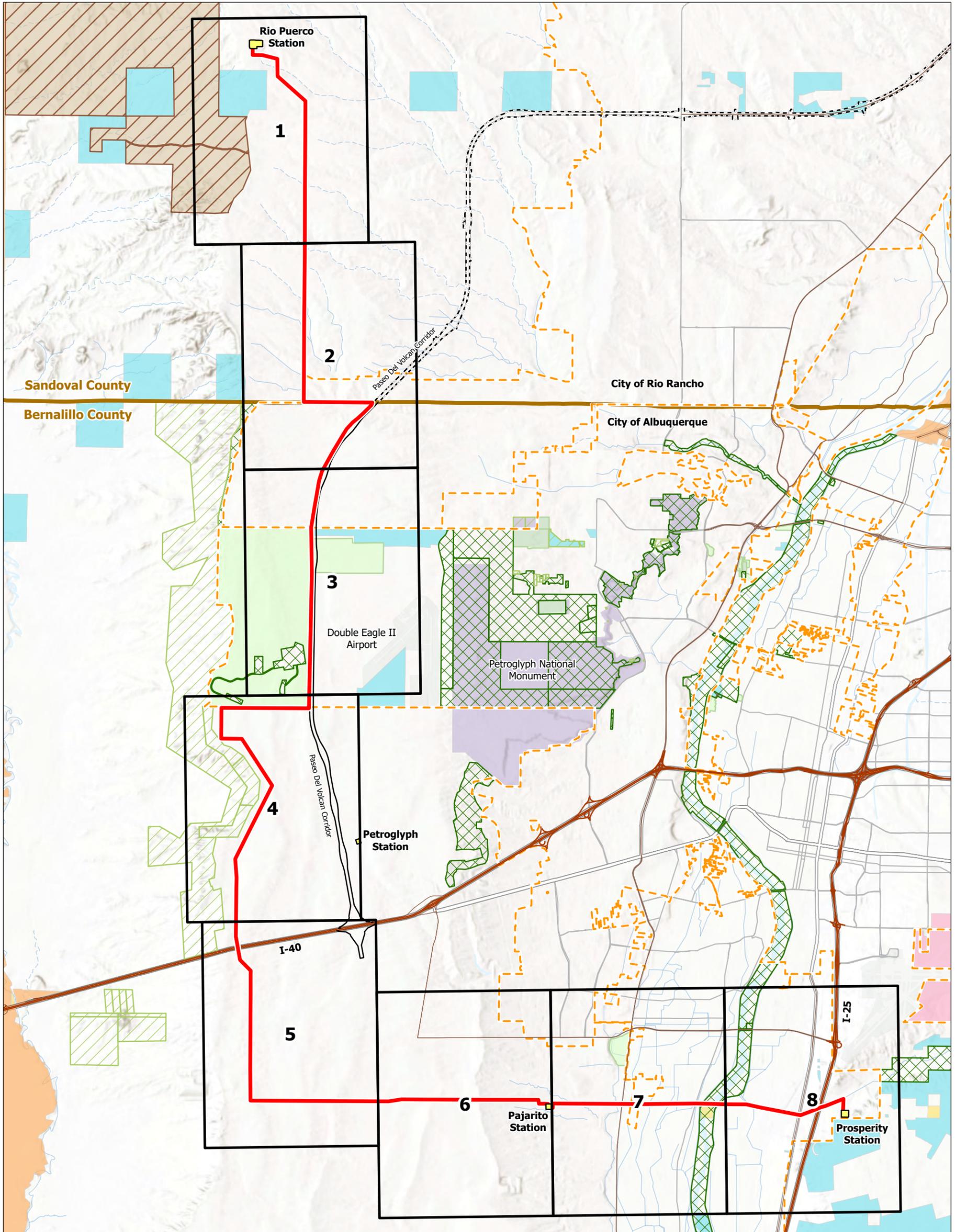
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Appendix A – Map Supplement





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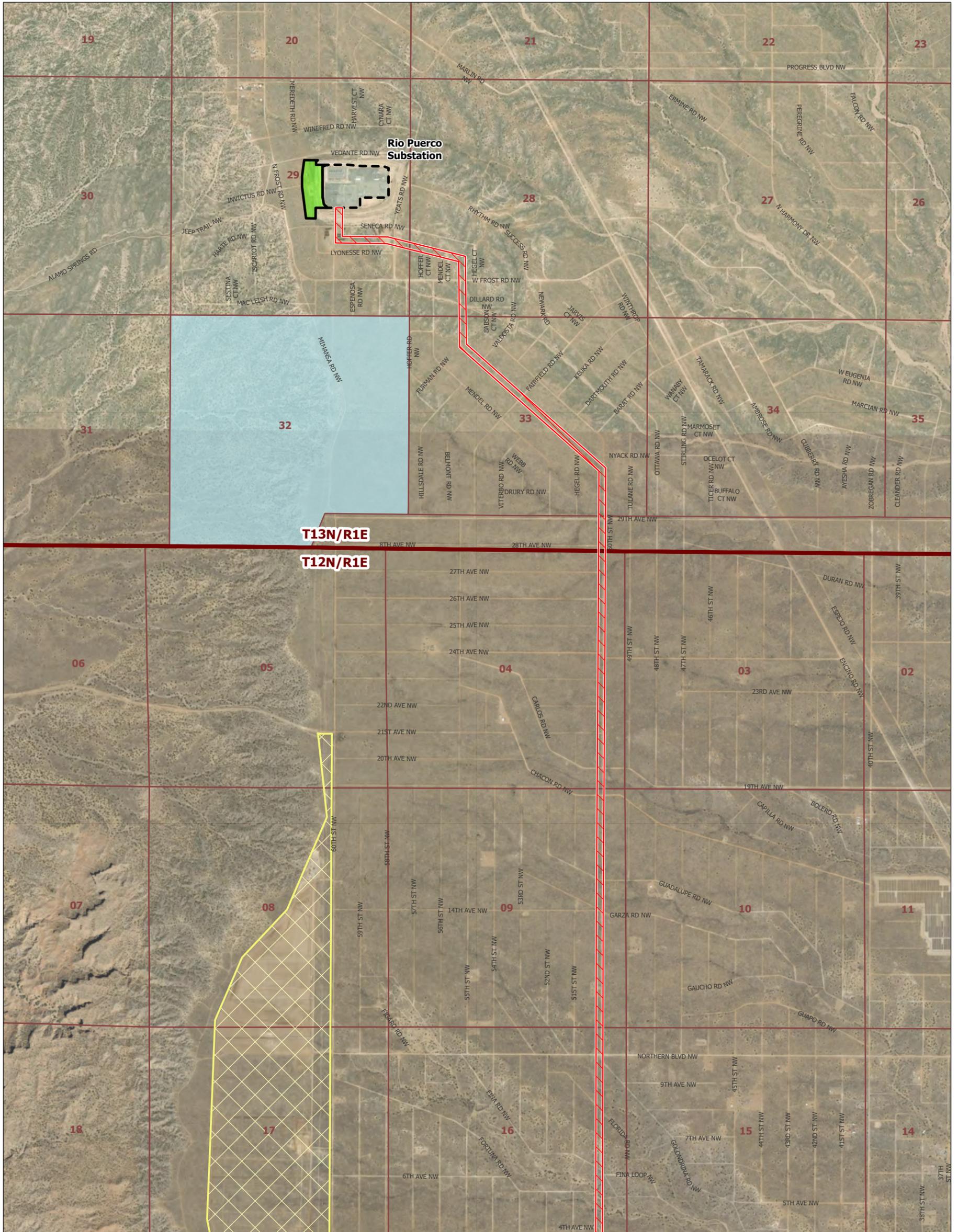
Legend	
PNM Station	Open Space
Alternative A	Open To Public
	Closed To Public
	Priority Acquisitions
Interstates	Incorporated Places
Other Roads	Santa Ana Pueblo
DOT ROW	Bureau of Land Management
Future DOT ROW	Dept. of Defense
NM County	National Park Service
	Private
	State
	Tribal

Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative A - Index Map

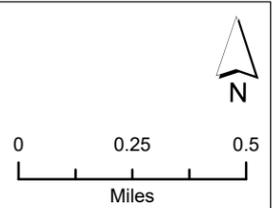
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- Legend**
- PNM Station (fenceline)
 - Substation Expansion
 - Alternative A ROW
 - Solar Facility
 - NM County
 - Santa Ana Pueblo
 - Private
 - State
 - PLSS Township
 - PLSS Section

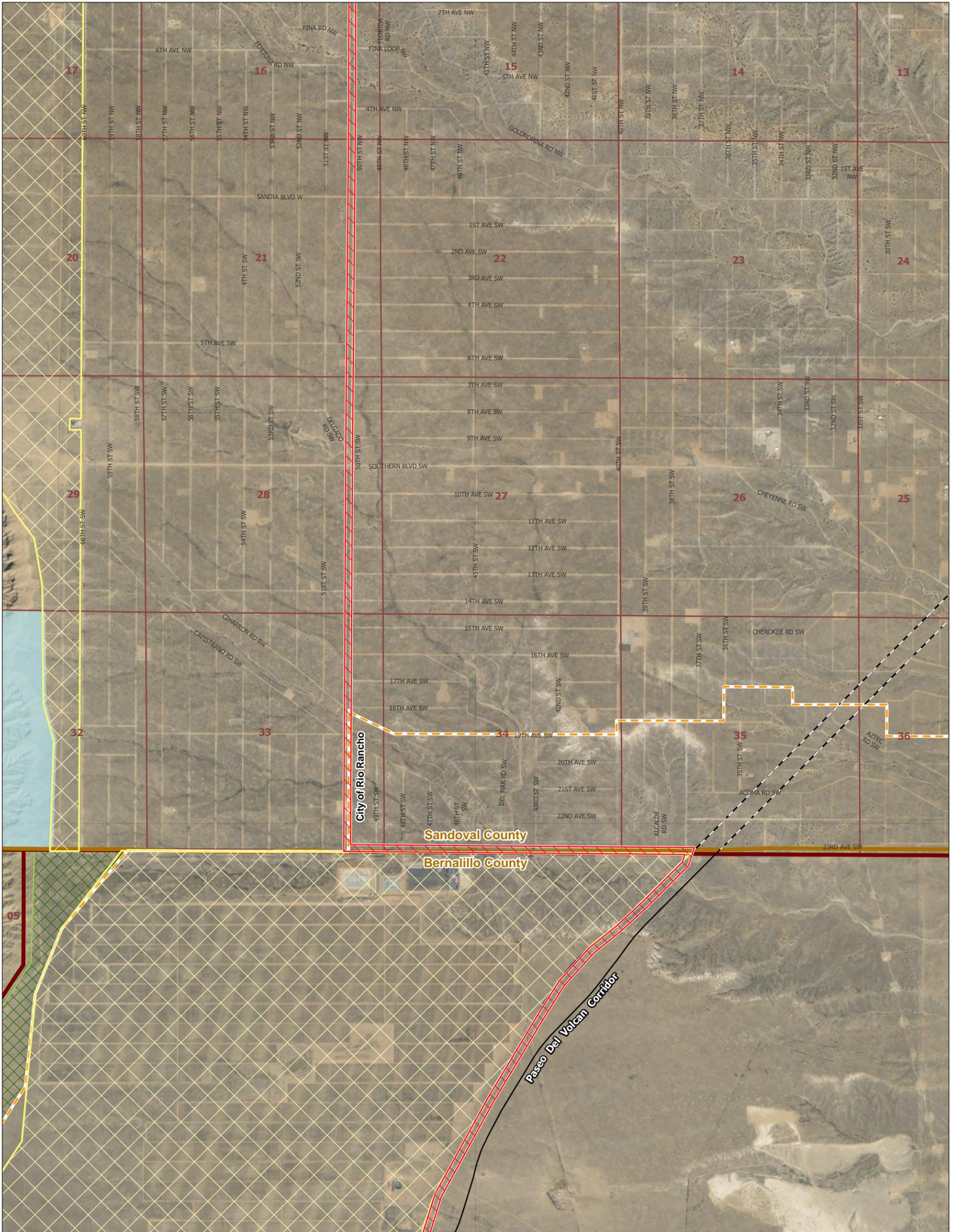


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative A - Map Book

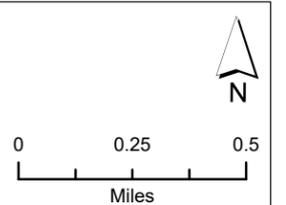
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- | | | | | |
|-----------------------|----------------|----------------|---------------------|---------------|
| Alternative A ROW | Solar Facility | DOT ROW | Incorporated Places | PLSS Township |
| Open Space | Open To Public | Future DOT ROW | Private | PLSS Section |
| Priority Acquisitions | | NM County | State | |

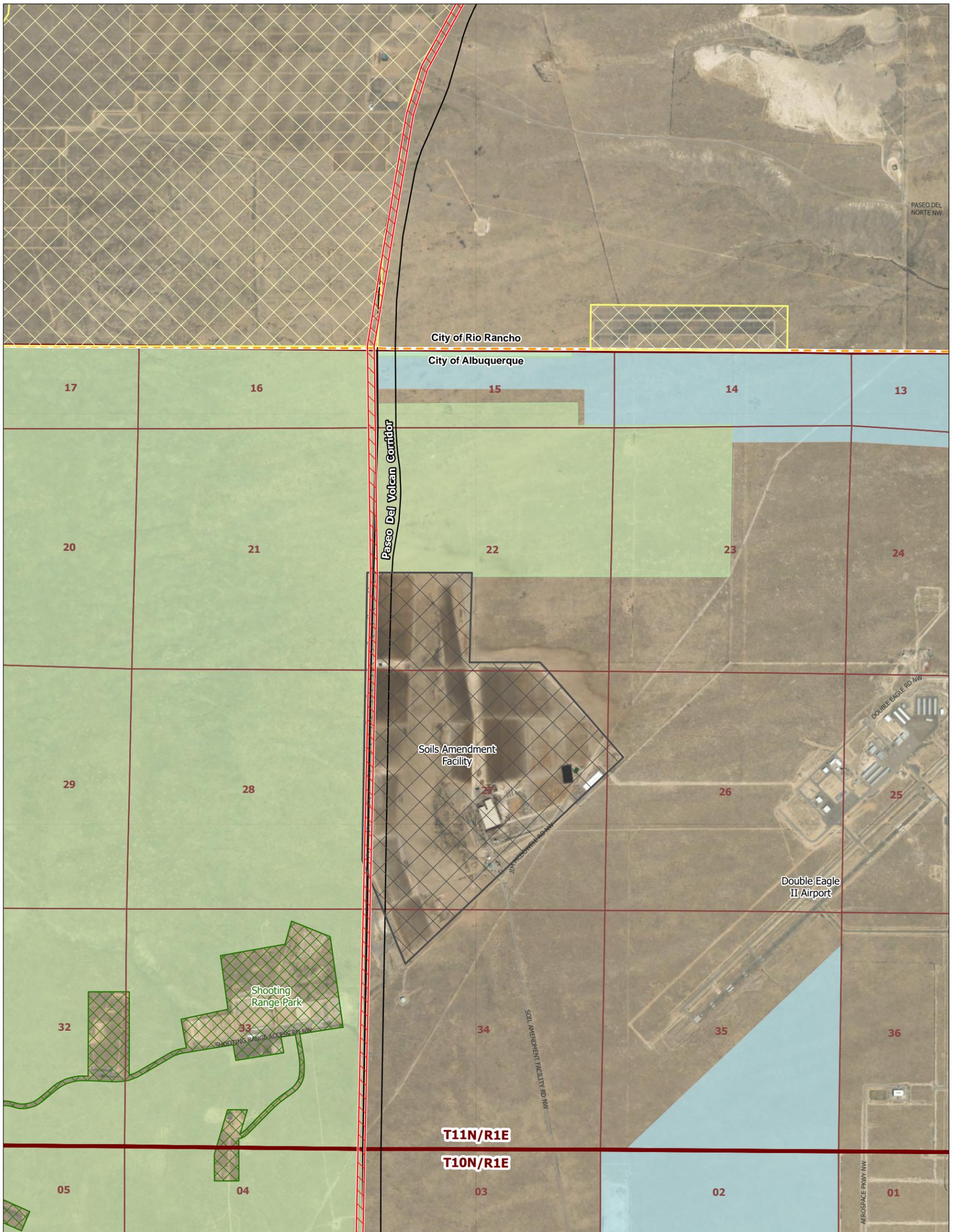


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Alternative A - Map Book

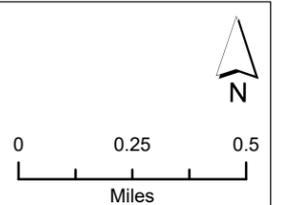
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Legend	
Alternative A ROW	Solar Facility
Soils Amendment Facility	DOT ROW
Open Space	Incorporated Places
Open To Public	Private
Closed To Public	State
NM County	PLSS Township
	PLSS Section

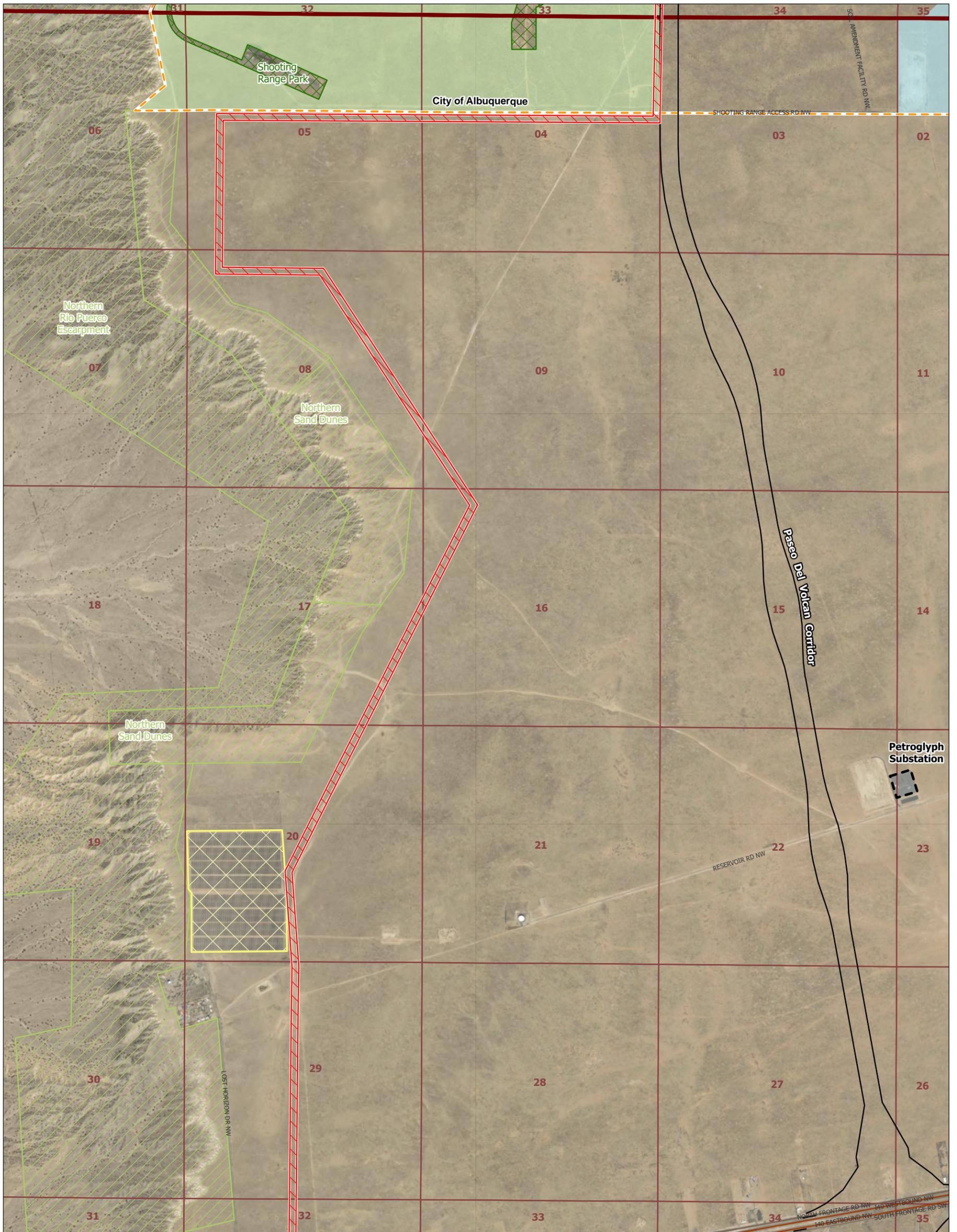


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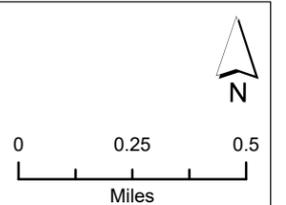
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Legend	
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	Alternative A ROW
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	Open Space
	Open To Public
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	Priority Acquisitions
	Interstates
	Other Roads
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	NM County
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	State
	PLSS Township
	PLSS Section

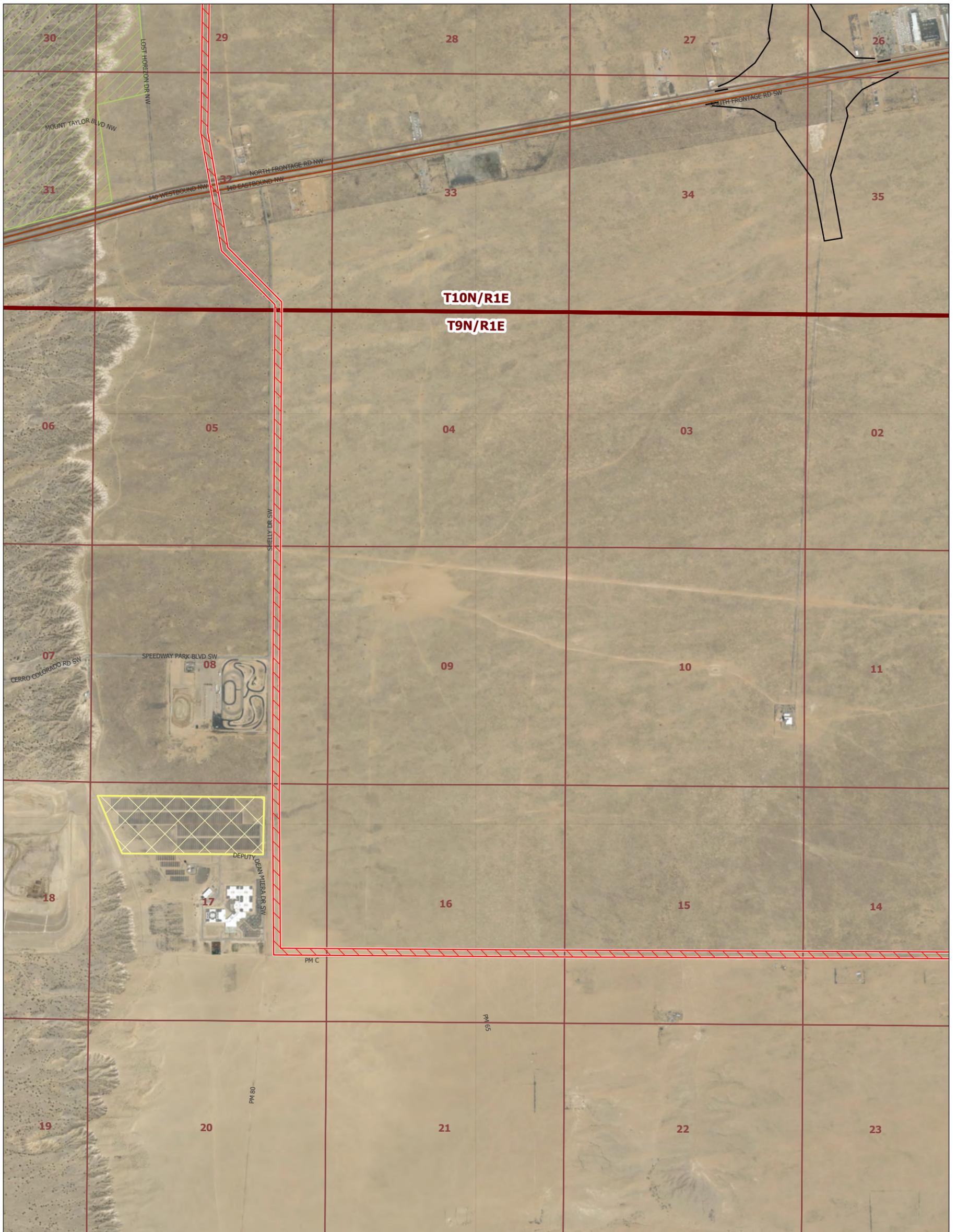


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

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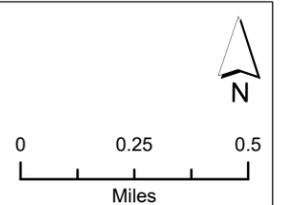
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 - Solar Facility
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 - Private
 - PLSS Township
 - Priority Acquisitions
 - Other Roads
 - PLSS Section
 - DOT ROW
 - NM County

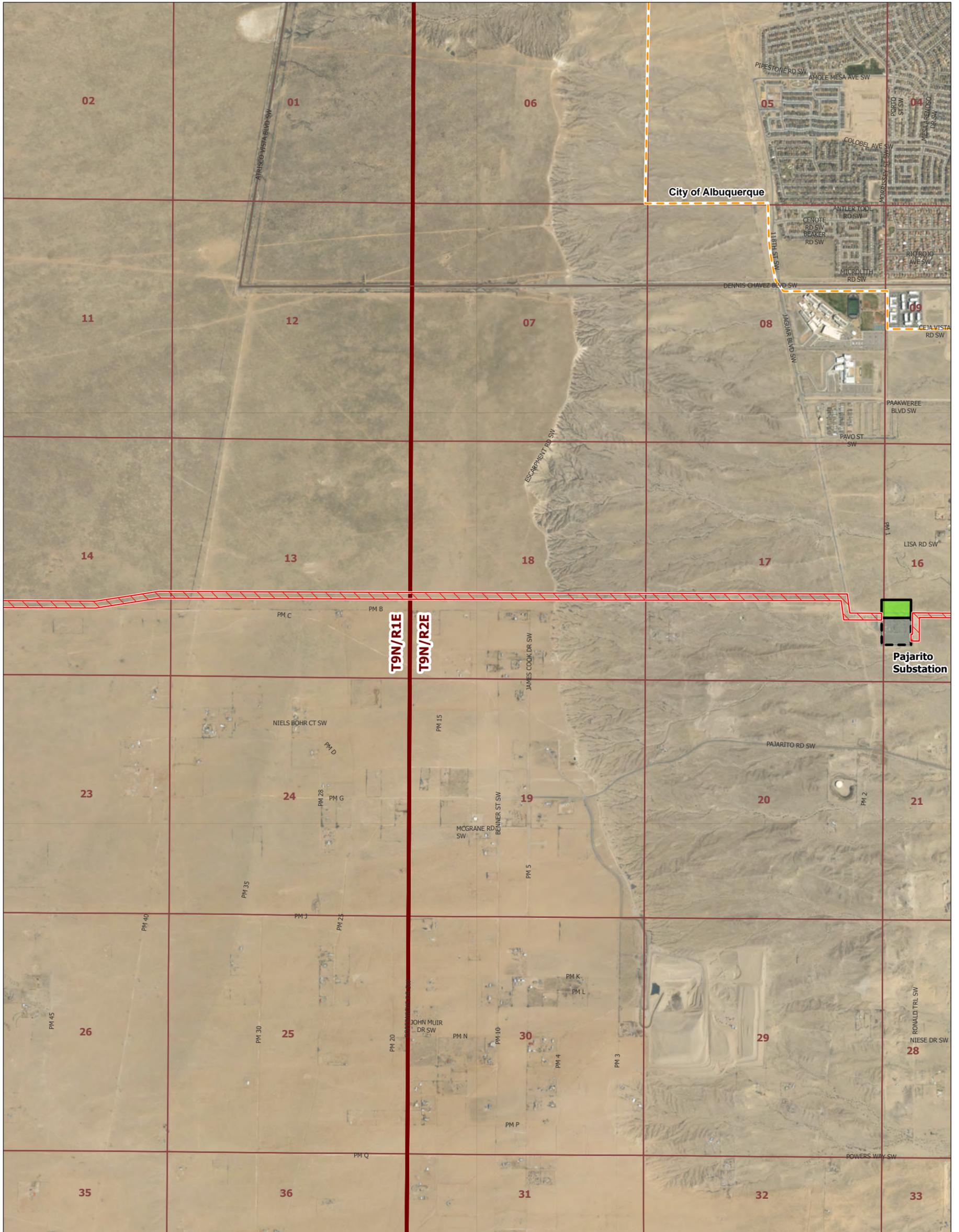


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

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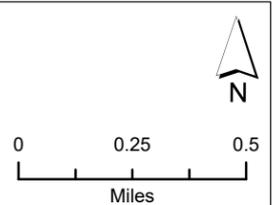
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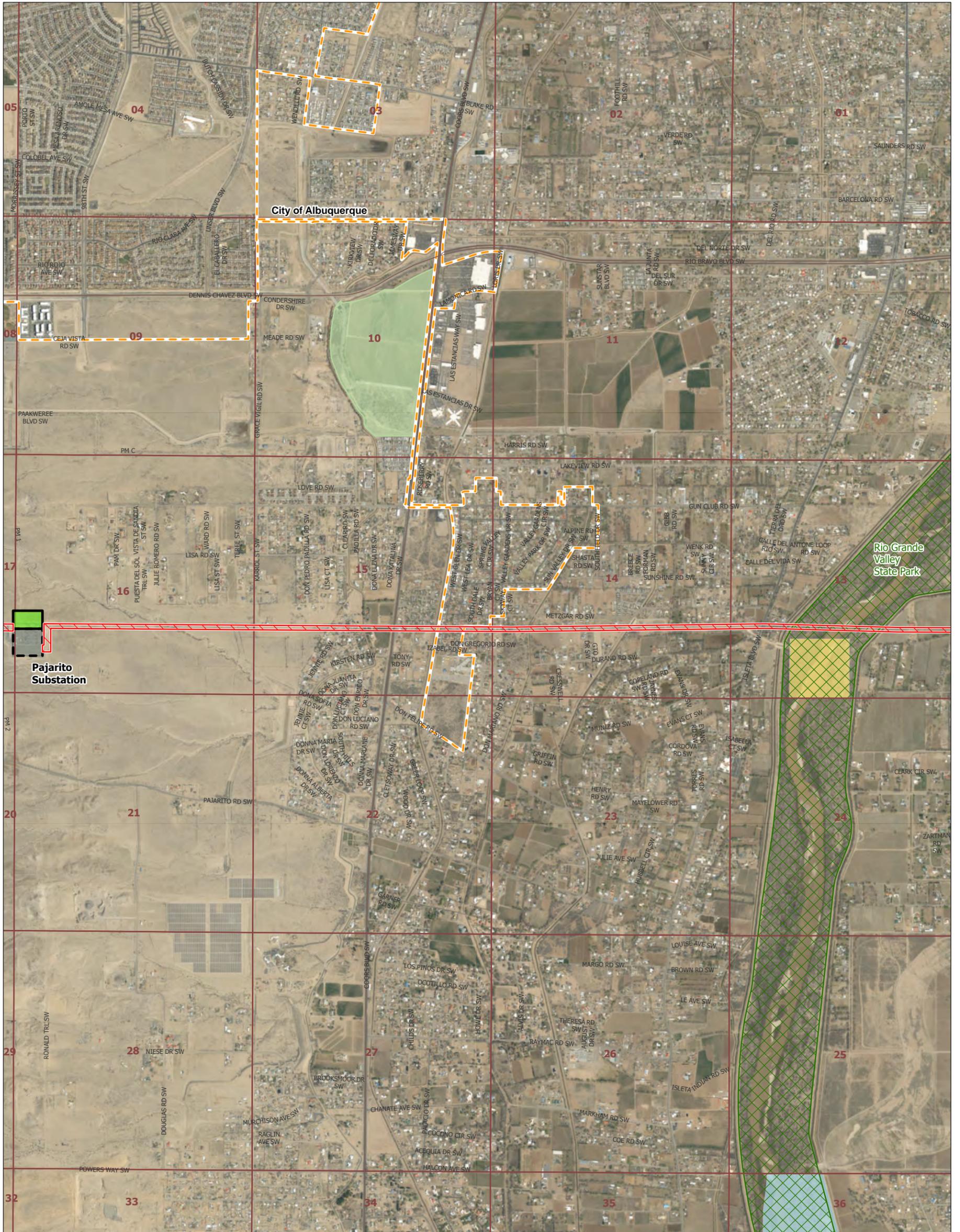


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative A - Map Book

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Legend	
	PNM Station (fenceline)
	Substation Expansion
	Alternative A ROW
	Open Space
	Open To Public
	Closed To Public
	Other Roads
	NM County
	Private
	State
	Incorporated Places
	Bureau of Land Management
	Private
	PLSS Township
	PLSS Section

N

0 0.25 0.5
Miles

Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative A - Map Book

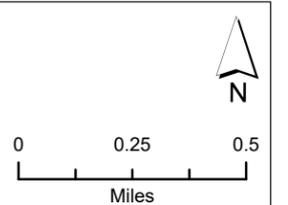
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Legend	
	PNM Station (fenceline)
	Substation Expansion
	Alternative A ROW
	Open Space
	Open To Public
	Interstates
	Other Roads
	NM County
	Incorporated Places
	Dept. of Defense
	Private
	State
	PLSS Township
	PLSS Section

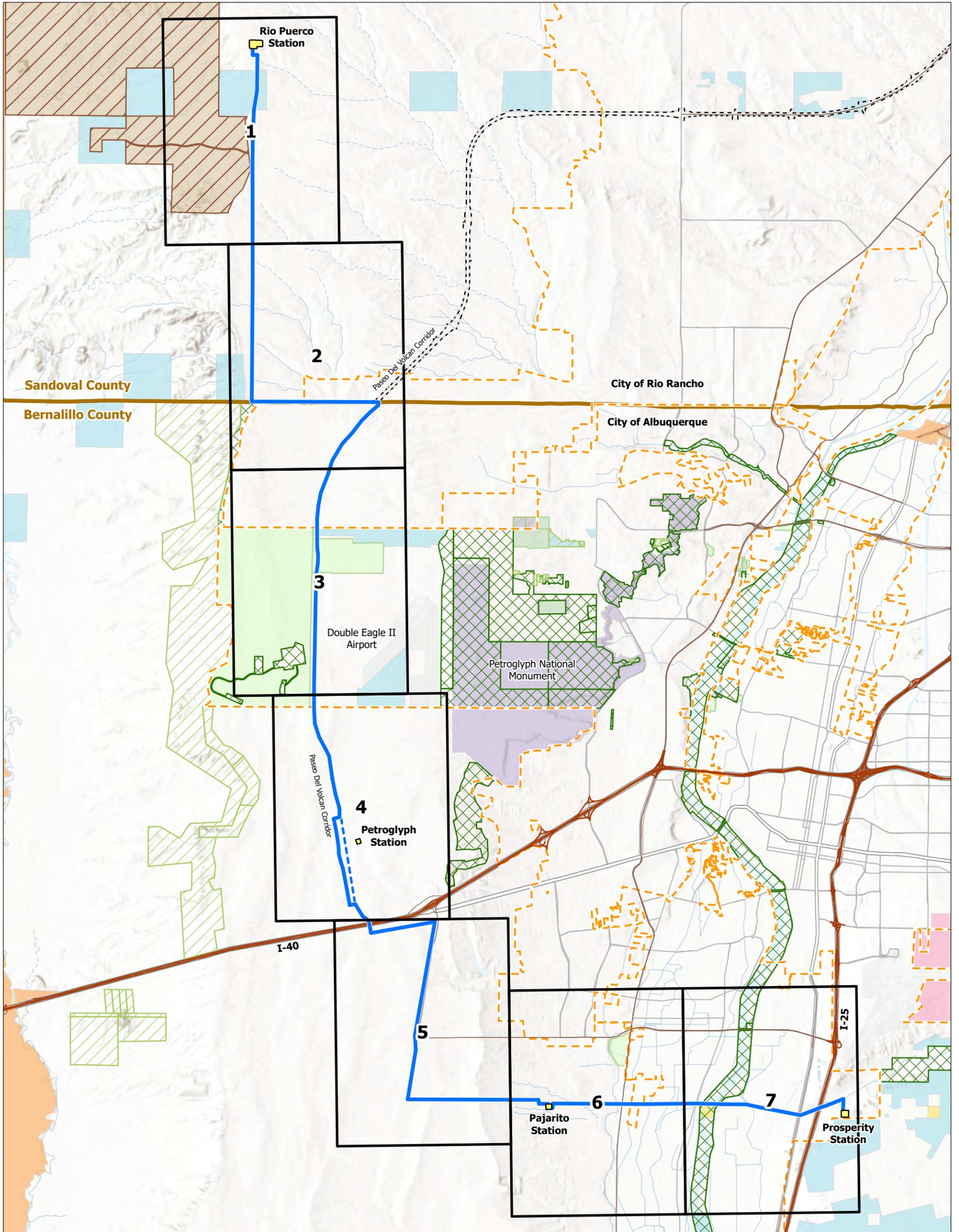


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative A - Map Book

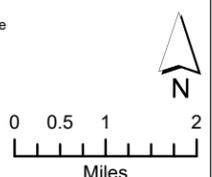
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Legend		
PNM Station	Open Space	Interstates
Alternative B.1	Open To Public	Other Roads
Alternative B.2	Closed To Public	DOT ROW
Priority Acquisitions	Future DOT ROW	Future DOT ROW
	Incorporated Places	National Park Service
	Santa Ana Pueblo	Private
	Bureau of Land Management	State
	Dept. of Defense	Tribal
		NM County

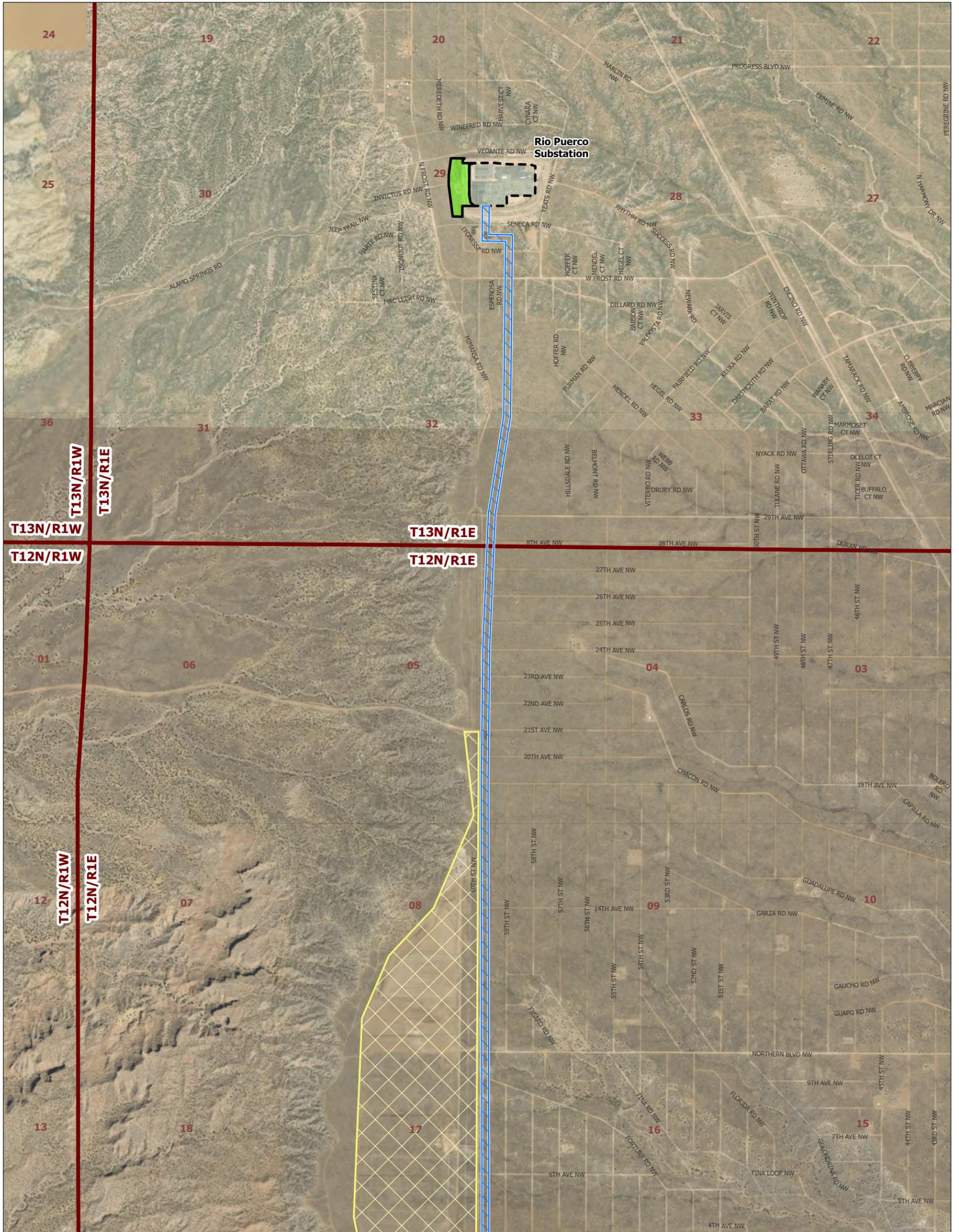


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative B.1 - Alternative B.2 - Index Map

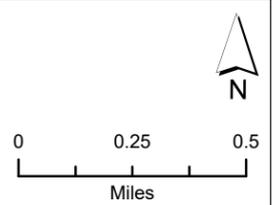
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- | | | | |
|-------------------------|---------------------|------------------|---------------|
| PNM Station (fenceline) | NM County | Santa Ana Pueblo | PLSS Township |
| Substation Expansion | Alternative B.1 ROW | PLSS Section | |
| Solar Facility | | | |

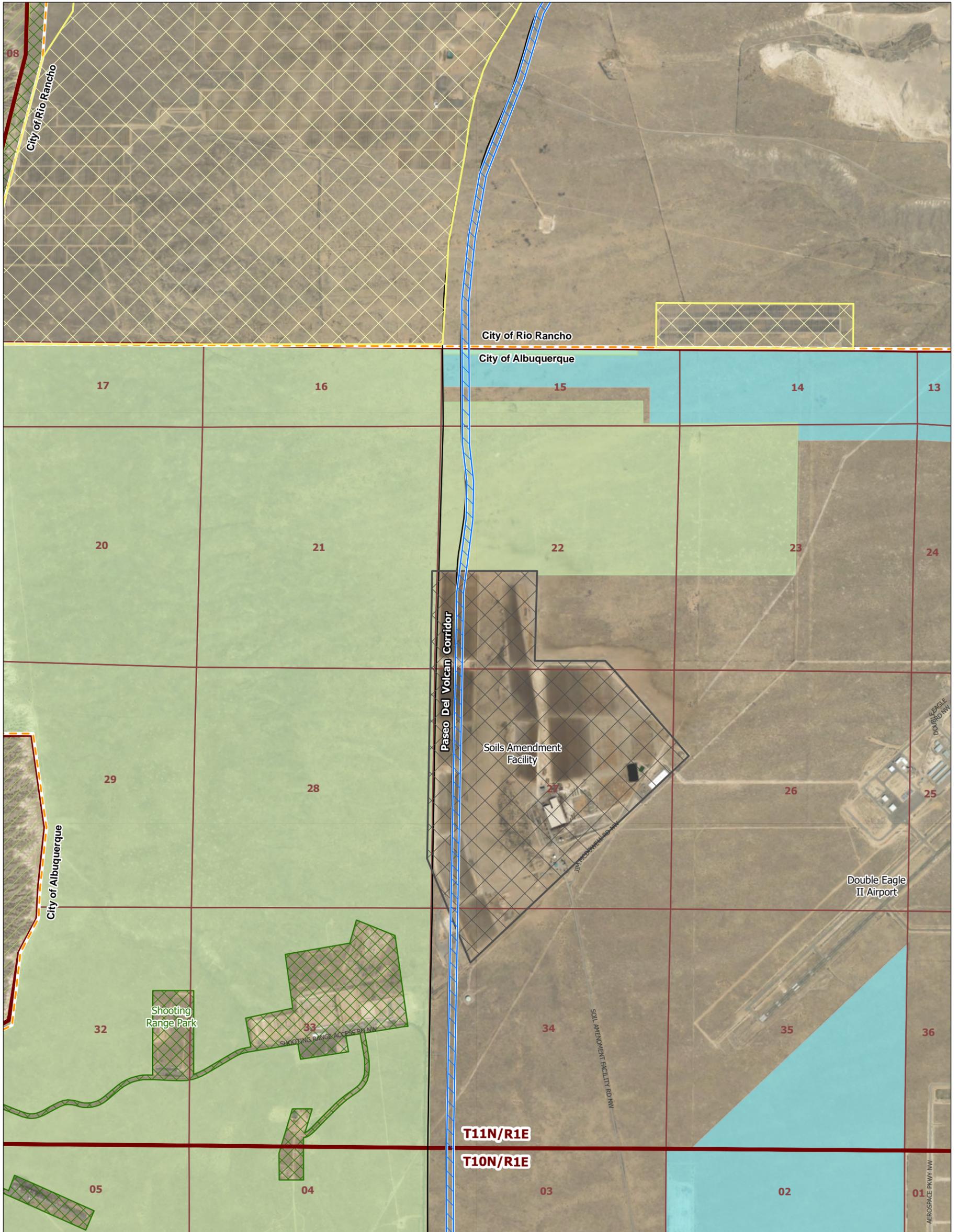


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative B.1 - Alternative B.2 - Map Book

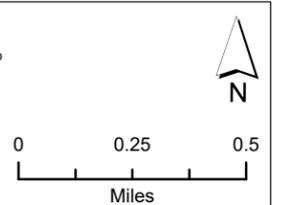
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Legend	
Alternative B.1 ROW	Soils Amendment Facility
Solar Facility	Open Space
Open To Public	DOT ROW
Closed To Public	NM County
Priority Acquisitions	State
Incorporated Places	Private
PLSS Township	PLSS Section



Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative B.1 - Alternative B.2 - Map Book

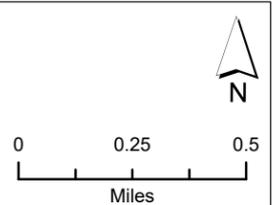
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Legend	
PNM Station (fenceline)	Open Space
Alternative B.1 ROW	Open To Public
Alternative B.2 ROW	Closed To Public
Interstates	Incorporated Places
Other Roads	National Park Service
DOT ROW	Private
NM County	State
PLSS Township	PLSS Section

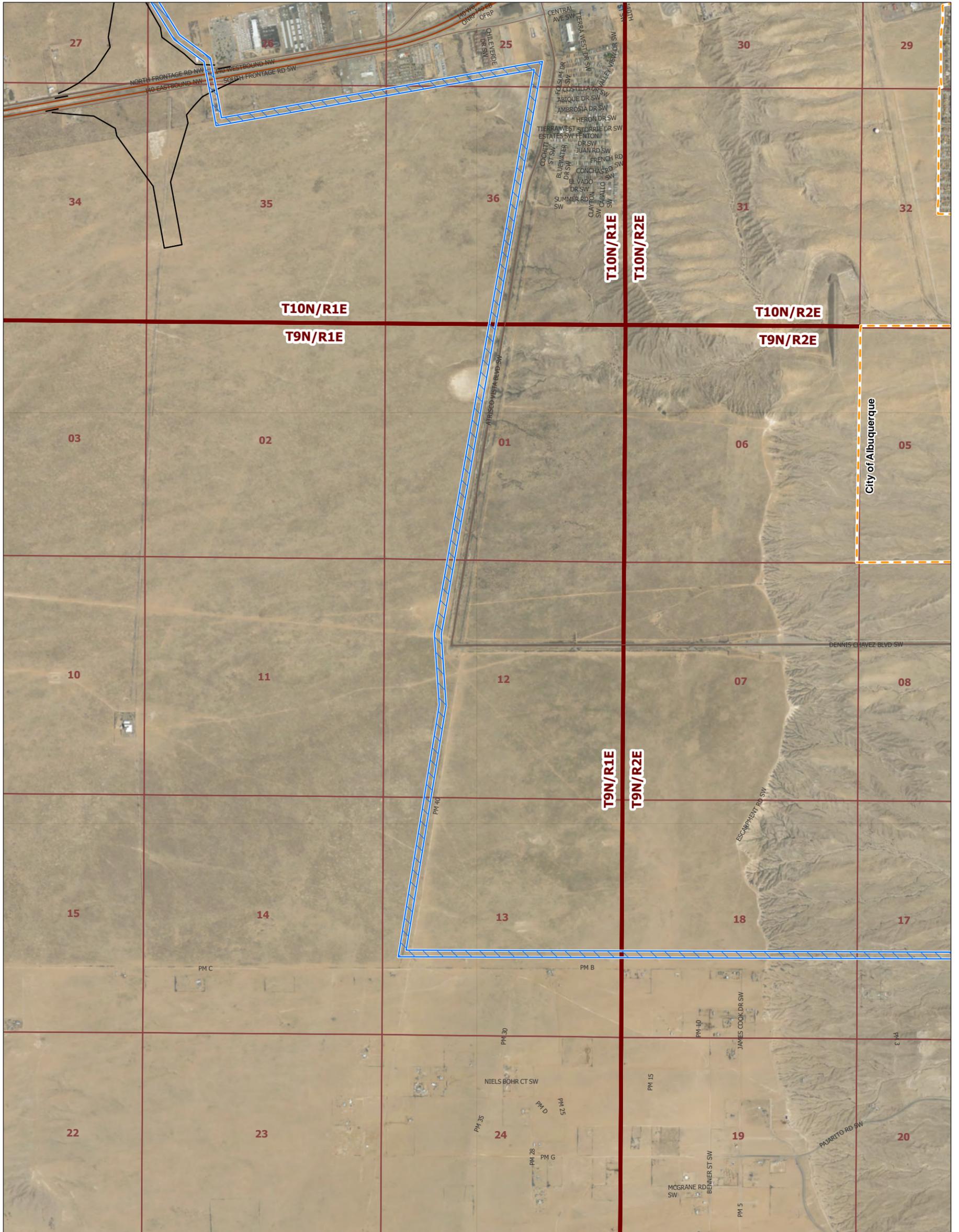


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative B.1 - Alternative B.2 - Map Book

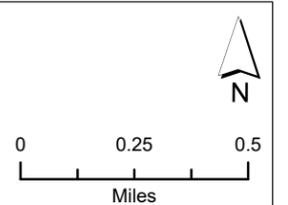
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- Legend**
- Alternative B.1 ROW
 - Interstates
 - Incorporated Places
 - PLSS Township
 - Other Roads
 - Private
 - PLSS Section
 - DOT ROW
 - NM County

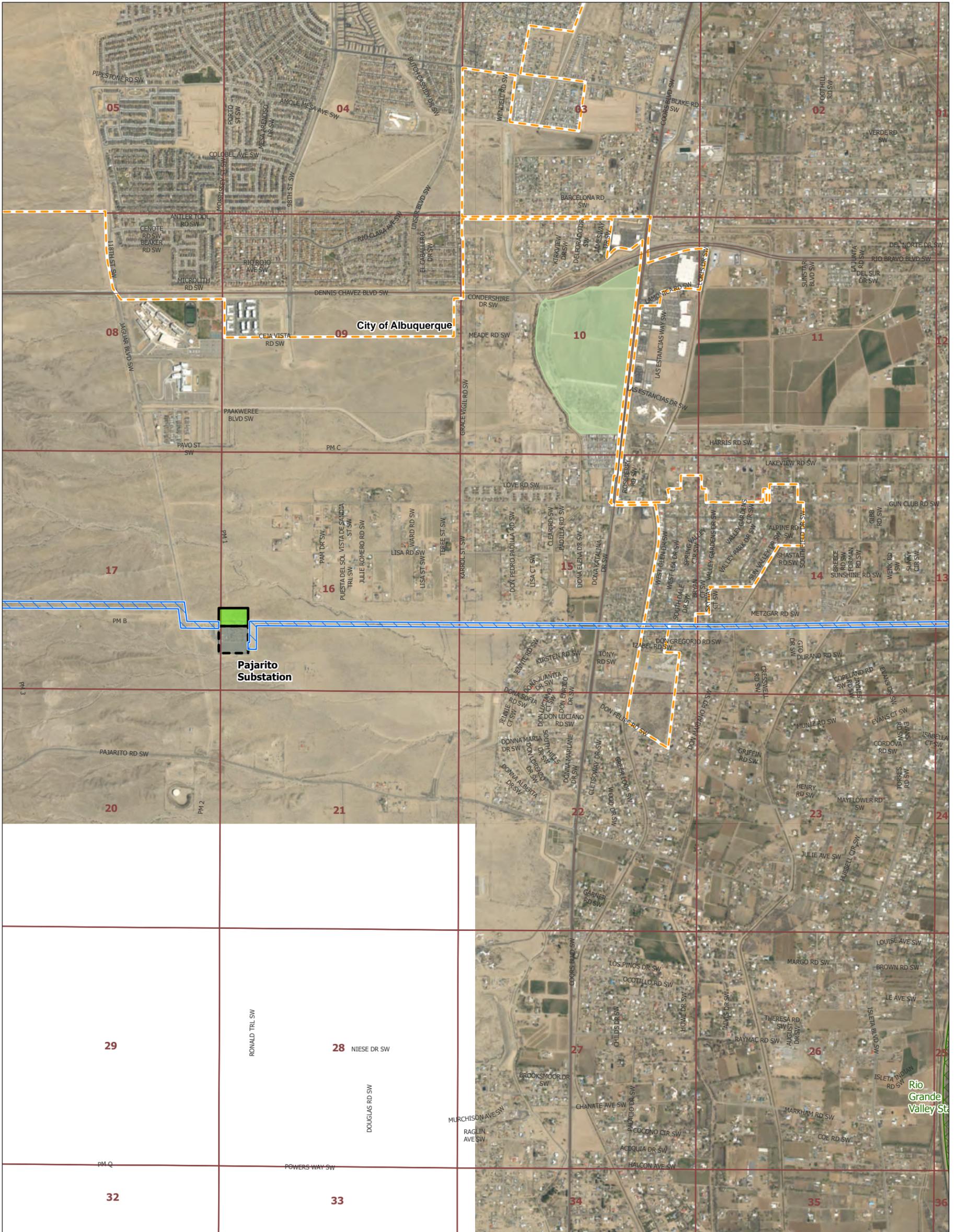


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative B.1 - Alternative B.2 - Map Book

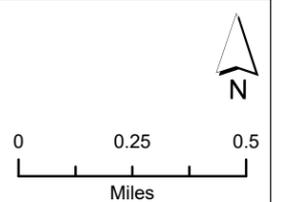
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- | | | | | |
|-------------------------|------------------|-------------|---------------------|---------------|
| PNM Station (fenceline) | Open Space | Other Roads | Incorporated Places | PLSS Township |
| Substation Expansion | Open To Public | NM County | Private | PLSS Section |
| Alternative B.1 ROW | Closed To Public | | | |

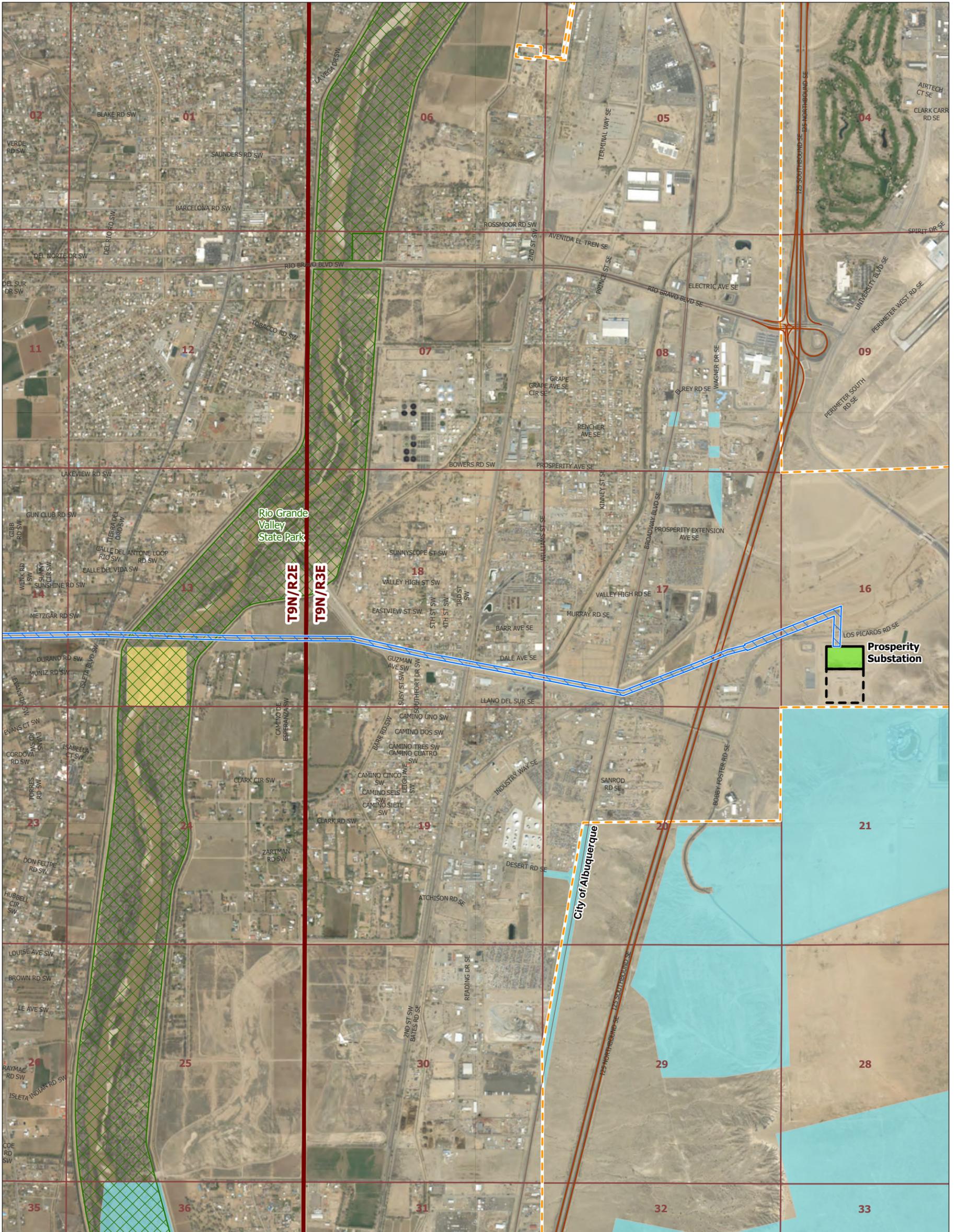


Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative B.1 - Alternative B.2 - Map Book

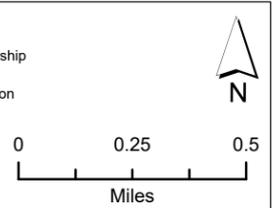
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- | | | | | |
|-------------------------|----------------|-------------|---------------------------|---------------|
| PNM Station (fenceline) | Open Space | Interstates | Incorporated Places | PLSS Township |
| Substation Expansion | Open To Public | Other Roads | Bureau of Land Management | PLSS Section |
| Alternative B.1 ROW | | NM County | Private | |
| | | State | | |



Rio Puerco-Pajarito-Prosperity 345kV Transmission Line

Alternative B.1 - Alternative B.2 - Map Book

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Appendix B – Best Management Practices



Environmental Protection Measures

PNM is committed to implementing the environmental protection measures listed in this section, which are divided into 11 categories:

1. General Measures
2. Air Quality
3. Soil Disturbance
4. Stormwater Management
5. Water Features
6. Vegetation
7. Noxious Weeds
8. Wildlife and Sensitive Species
9. Cultural and Paleontological Resources
10. Hazardous Materials and Waste
11. Fire Prevention and Response

General Measures

The limits of the temporary work areas will be marked with staking and/or flagging. All environmentally sensitive areas, if any, will be fenced for avoidance.

The Project work areas and staging areas will be regularly patrolled and maintained in compliance with applicable safety codes.

Prior to construction, all construction personnel will be instructed on the protection of sensitive biological, cultural, and paleontological resources that have the potential to occur on-site.

All construction vehicle movement outside the ROW will be restricted to predesignated access, contractor-acquired access, or public roads.

All existing roads will be left in a condition equal to or better than their pre-construction condition.

Fences and gates would be replaced, repaired, or restored to their original condition as required by the landowner or state if they are removed or damaged by construction activities. Fences would be braced before cutting. Temporary gates or enclosures would be installed only with the permission of the landowner or state agency and would be removed/restored following construction. Cattle guards would be installed where new permanent access roads cut through fences.

PNM will limit construction in residential areas to between daylight and dusk, six days a week, subject to county and municipal requirements.

Prior to construction, utility locating service will be used to identify buried utilities that must be avoided during construction, including pipelines and any associated distribution lines. If any disruptions to the electrical system are required during construction, PNM or the contractor will contact the appropriate utility or electric cooperative to schedule planned disruptions.

PNM or their contractors would work with state and local officials to coordinate and minimize traffic impacts during construction and operation of the Project. This includes developing a Traffic Control Plan and meeting the NMDOT occupancy permit requirements. PNM or their contractors would coordinate and provide the necessary requirements for traffic controls with the appropriate authority, including emergency services.

As construction progresses, information would be provided to local emergency services to inform personnel of upcoming activity and impacts of the work as well as to plan for emergency situations on the construction site, should they occur.

Air Quality

Driving speeds will be limited to 25 miles per hour on unpaved roads and 15 miles per hour within the ROW.

All areas subject to ground disturbance will be watered and/or treated with an authorized dust palliative as needed to control dust.

Public, paved streets and highways will be swept if visible soil material is tracked onto them by construction vehicles.

Excavation and grading activities will be suspended when winds (instantaneous gusts) exceed 50 miles per hour, and visible dust persists that creates a health hazard to neighboring property owners and/or visibility impacts to vehicular traffic.

Soil Disturbance

In areas where significant grading will be required for temporary construction, topsoil (where present) will be stockpiled and segregated for later reapplication.

Construction will be prohibited when the soil is too wet to adequately support construction equipment unless a soil stabilizer or matting is used.

In disturbed work areas, the soil will be salvaged, if possible, and will be distributed and contoured evenly over the surface of the disturbed area after construction completion. The soil surface will be left rough to help reduce potential wind erosion.

In construction areas (e.g., staging areas, structure sites) where ground disturbance is significant or where recontouring is required, surface restoration will occur as required by the landowner or the state. The method of reclamation will normally consist of, but is not limited to, returning disturbed areas back to their natural contour, reseeding installing cross drains for erosion control, placing water bars in the road, and filling ditches.

Areas that are disturbed as a part of the construction and/or maintenance of the Project will be drill seeded where practical with a seed mixture appropriate for those areas unless an alternative method (e.g., broadcast seeding) is required due to slope or terrain.

Stormwater Management

PNM will apply for a Stormwater Permit. PNM's construction contractor will develop a Stormwater Pollution Prevention Plan that incorporates Best Management Practices.

Water Features

All construction vehicles and equipment staging, or storage and all construction activities will be located at least 100 feet away from any arroyos, streams, wetlands, and other water features unless such features are adequately protected.

Vegetation

Wherever possible, vegetation will be left in place. Where vegetation must be removed, it will be cut at ground level to preserve the root structure and allow for potential resprouting. In construction areas where recontouring is not required, vegetation will be left in place wherever possible, and original contour will be maintained to avoid excessive root damage and allow for resprouting. Vegetation that is not consistent with line safety and operation will be removed.

All temporary construction areas, including stringing sites and structure pads that have been disturbed, will be recontoured and restored as required by the landowner or land management agency. The method of restoration typically will consist of seeding or revegetating with native plants (if required), installing cross drains for erosion control, and placing water bars in the road.

Seed will be certified as weed-free and will consist of a seed mix approved by the state and local agencies, as applicable.

Noxious Weeds

Prior to pre-construction activities, PNM or their contractor will identify all noxious weeds present. PNM will treat the noxious weeds as required by New Mexico regulations.

The control of noxious weed species can be achieved through proper revegetation using appropriate management practices during transmission line construction as well as reclamation of the disturbed areas. Measures associated with limiting the impact of noxious weed species are provided as follows:

Construction supervisors and managers will be aware of the importance of controlling and preventing the spread of noxious weed species infestations.

- Disturbed construction areas will be reclaimed as soon as possible after construction in the area that is completed.
- All gravel and/or fill material will be certified as weed-free.
- Disturbances to areas infested with noxious weeds will be avoided to the extent possible.
- Any equipment or vehicles used in an area infested with noxious weeds will be thoroughly cleaned before they are moved to a new location.

- Before beginning reclamation activities, previously identified noxious weed infestations will be controlled through acceptable mechanical (e.g., topsoil excavation and removal) and/or herbicide applications.
- All off-road equipment will be cleaned (power or high-pressure cleaning) of all mud, dirt, and plant parts prior to initially moving equipment onto staging areas or work areas. Equipment will be cleaned again if it leaves the Project site prior to reentry. Equipment will have the tires, axles, frames, running boards, under carriages, and soil holding areas washed and cleaned to prevent the transport of noxious weeds to unaffected areas

As soon as work is completed, temporary disturbance areas will be seeded with an appropriate seed mix, as applicable, to establish ground cover by native species.

The Project area will be monitored annually for three years to identify new infestations of noxious weeds within the ROW. Any new infestations will be treated using methods approved by the NMSLO (or other land managing agencies, as applicable).

Wildlife and Sensitive Species

Prior to construction (inclusive of ROW clearing and access road construction), biological surveys of the ROW and the access roads will be conducted. Potential habitat for federal and state listed species identified during the pre-construction survey will be flagged for avoidance during construction and include an appropriate buffer for the species. The project will be designed to place structures to allow spanning and avoidance of sensitive habitats within the limits of standard structure design. If avoidance is infeasible, consultation with appropriate jurisdictional agencies will be conducted prior to work in the area(s).

Breeding bird surveys will also be completed prior to, and sensitive species will be monitored during construction. During operation and maintenance, active nests on structures would be avoided and monitored by a qualified biologist until determined inactive, prior to replacing H-frame structures or other maintenance activities to prevent disturbance that could result in migratory bird species mortality.

If a sensitive plant or animal species is encountered during construction, work near the sensitive species will be halted, and a qualified biologist familiar with the species will be consulted to determine an appropriate buffer and other protective measures. The appropriate resource agencies will be notified of the discovery within 24 hours. If avoidance is infeasible, consultation with the jurisdictional resource agency will be conducted prior to continuing work in the immediate area of the species. Any federally or state-listed species discovered on public land will also be reported to the NMDGF.

Excavations left open overnight will be covered or fenced to prevent livestock or wildlife from falling in. All covers will be secured in place and strong enough to prevent livestock or wildlife from falling in.

The 2006 manual developed by the Avian Power Line Interaction Committee (APLIC) identified best industry practices for reducing avian electrocutions; poles and equipment providing adequate spacing and insulation are described as “avian-friendly.” Avian-friendly structures have been designed to provide adequate distances between energized and/or grounded components allowing birds to perch without risk of electrocution. Transmission structures generally have sufficient separation between phases, such that large birds cannot bridge the distance between energized and grounded components. The industry standard for avian protection on power lines, which is adhered to by PNM, is 60 inches of horizontal separation and 40 inches of vertical separation. PNM’s Avian Protection Plan recommends the following equipment should be bird guarded:

- Transformers – cap bushings and arresters. Cover stinger wire.
- Lightning arresters - cap arrester. Cover stinger wire.
- Cut-outs – cover with cut-out cover.
- Risers – cap arrester and tape over exposed fittings on lead wires. Cover lead wires.
- Regulators – cap all exposed bushings and cover lead wires.
- Reclosers – cap bushing. Cover stinger wire.
- Capacitor banks - For 300 and 600kVAR capacitors banks, cover bushings and lead wires. For 1200/1800kVAR capacitors, cover bushings and lead wires and wrap bus bars with medium voltage fusion tape.
- Gang Operated Load Break (GOLB) – Place Bus Insulator Wildlife Guard on all the insulators, staggering as needed to fit the insulator skirt. Wrap Medium Voltage Fusion Tape (MVFT) around exposed energized metal or moving parts.
- Radial Disconnect Switch (RDS) Switch – Cover potheads, arresters, cut outs, stingers and conductors.
- Conductor covers should be used to ensure 60-inch horizontal and 40-inch vertical separation between energized phases and ground.

Structures will be constructed to conform to those practices described in the Suggested Practices for Raptor Protection on Power Lines Manual developed by the Edison Electric Institute (APLIC 2006) and the Reduced Avian Collisions with Power Lines (APLIC 2012).

Excavations left open overnight will be covered or fenced to prevent livestock or wildlife from falling in. All covers will be secured in place and strong enough to prevent livestock or wildlife from falling in.

Cultural and Paleontological Resources

Wherever possible, PNM will avoid cultural sites identified as eligible for inclusion on the National Register of Historic Places. Where avoidance is not possible, a treatment plan will be developed through consultation between the New Mexico State Historic Preservation Office (“SHPO”), and applicable Tribal Historic Preservation Offices (THPO).

Prior to construction, PNM and/or its contractors will train workers and individuals involved with the Project regarding the potential to encounter historic or prehistoric sites and objects, proper

procedures if cultural items or human remains are encountered, prohibitions on artifact collection, and respect for Native American religious concerns. As part of this training, all construction personnel will be instructed to inspect for paleontological and cultural objects when excavating or conducting other ground-disturbing activities.

If potential resources are found, work will be halted immediately within a minimum distance of 300 feet from the discovery, and a professional archaeologist (holding a valid Cultural Resources Permit) will be mobilized to the site to evaluate the find. Any potential resources will not be handled or moved. The professional archaeologist will then determine whether the find needs to be evaluated by a paleontologist or Native American representative. The appropriate specialist(s) will then decide on the significance of the find and the steps to be followed before proceeding with the activity. Any cultural and/or paleontological resource discovered during construction on NMSLO will be reported immediately to the SHPO and THPOs

NRHP-eligible properties that ground-disturbing activities could not avoid would be monitored during construction activities and/or subject to mitigation prior to construction. During construction, all NRHP-eligible properties would be flagged with. Any activities occurring within the flagged boundary would be monitored by a professional archaeologist to ensure construction crews stay on approved roads; eligible components of the site, including surface artifacts and features, would not be disturbed by construction; and construction crews stop work in the event of an unanticipated discovery. In some instances, monitoring of construction activities could be all that is needed to avoid or minimize adverse effects on sites, particularly in places where ground-disturbing activities would not affect the eligible portions of sites

Hazardous Materials and Waste

All construction vehicles will be maintained in accordance with the manufacturers' recommendations. All vehicles will be inspected for leaks prior to entering the jobsite. All discovered leaks will be contained with a bucket or absorbent materials until repairs can be made.

Totally enclosed containment will be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials will be removed to a disposal facility authorized to accept such materials consistent with a Spill Response Plan.

All hazardous materials will be properly labeled in accordance with 40 C.F.R. Part 262. A list of hazardous materials expected to be used during construction of the Project will be included in the final POD.

Hazardous material storage, equipment refueling, and equipment repair will be conducted at least 100 feet away from streams or other water features.

Spilled materials of any type will be cleaned up immediately. A shovel and spill kit will be always maintained on-site to respond to spills.

All sanitary waste will be collected in portable, self-contained toilets at all construction staging areas and other construction operation areas and managed in accordance with local requirements.

Fire Prevention and Response

All applicable fire laws and regulations will be observed during the operation and maintenance period. All personnel will be advised of their responsibilities under the applicable fire laws and regulations, including taking practical measures to report and suppress fires. State fire safety standards will be followed. Requirements for fire tool availability, spark arresters/mufflers on equipment, and construction activities will be conducted consistent with fire conditions. Coordination with the fire marshals will occur during construction.

PNM and/or its construction contractor will designate a Fire Marshal who will be responsible for the following tasks:

- Conducting regular inspections of tools, equipment, and first aid kits for completeness.
- Conducting regular inspections of storage areas and practices for handling flammable fuels to confirm compliance with applicable laws and regulations.
- Posting smoking and fire rules at centrally visible locations on-site.
- Coordinating initial response to contractor-caused fires within the ROW.
- Conducting fire inspections along the ROW corridor, work areas, and staging areas.
- Ensuring that all construction workers and subcontractors are aware of all fire protection measures.
- Remaining on duty and on-site when construction activities are in progress and during any additional periods when fire safety is an issue or designating another individual to serve in this capacity when absent.
- Reporting all wildfires in accordance with the notification procedures described below.
- Initiating and implementing fire suppression activities until relieved by agency or local firefighting services in the event of a Project-related fire. Project fire suppression personnel and equipment, including water tenders, will be dispatched within 15 minutes from the time that a fire is reported.
- Coordinating with the PNM Project Manager regarding current fire conditions potential and fire safety warnings and communicating these to the contractor's crews.

PNM's Construction Foreman or the Fire Marshal will immediately notify firefighting services of any fires on-site.

Contractors will be notified to stop or reduce construction activities that pose a significant fire hazard until appropriate safeguards are taken.

If an accidental fire occurs during construction, immediate steps to extinguish the fire (if it is manageable and safe to do so) will be taken using available fire suppression equipment and techniques. Fire suppression activities will be initiated by PNM and/or its contractor until relieved

by agency or local firefighting services.

Fire suppression equipment will be present in areas where construction tools or equipment have the potential to spark a fire.

All field personnel will be instructed regarding emergency fire response. The contractors will receive training on the following:

- Initial fire suppression techniques.
- Fire event reporting requirements.
- Methods to determine if a fire is manageable.
- Fire control measures to be implemented by field crews on-site.
- When the worksite should be evacuated.
- How to respond to wildfires in the vicinity.
- How to maintain knowledge of and plans for evacuation routes.

All flammable material, including dead vegetation or dry grasses will be cleared from areas where equipment operation that may generate sparks or flames.

All welding or cutting of power line structures or their component parts will be approved by PNM's Construction Foreman or Administrator. Approved welding or cutting activities will only be performed in areas cleared of vegetation. Welding or cutting activities will cease one hour before all fire response personnel leave a construction area to reduce the possibility of welding activities smoldering and starting a fire. Welder vehicles will be equipped with fire suppression equipment.

All internal combustion engines, both stationary and mobile, will be equipped with approved spark arresters that have been maintained in good working condition. Light trucks and cars with factory-installed (type) mufflers in good condition may be used on roads cleared of all vegetation with no additional equipment required. Vehicles equipped with catalytic converters are potential fire hazards and will be parked on cleared areas only.

The use of torches, fuses, highway flares, or other warning devices with open flames will be prohibited. PNM and its contractors will only use electric or battery-operated warning devices on-site.

Equipment parking areas, small stationary engine sites, and gas and oil storage areas will be cleared of all extraneous flammable materials. "NO SMOKING" signs will be always posted in these areas.

Fuel tanks will be grounded.

PNM and its contractors will provide continuous access to roads for emergency vehicles during construction.

All motorized vehicles and equipment will be equipped with an ABC Dry Chemical Fire Extinguisher.

Project construction worksites will include the following equipment:

- Power saws, if required for construction, must be equipped with an approved spark arrester and accompanied by one 5-pound ABC Dry Chemical Fire Extinguisher and a long-handled, round-point shovel.
- Fuel service trucks with one 35-pound capacity fire extinguisher charged with the necessary chemicals to control electrical and fuel fires.
- At least two long-handled, round-point shovels and two 5-pound ABC Dry Chemical Fire Extinguishers at wood cutting, welding, or other construction work sites that have a high risk of starting fires.
- At least one radio and/or cellular telephone to contact fire suppression agencies or the Project management team.

During periods of increased fire danger, a fire suppression vehicle will be available in the construction area or stationed near high-risk construction work sites. The truck will be equipped with the following items:

- Water tank with a minimum capacity of 200 gallons.
- 250 feet of 0.75-inch heavy-duty rubber hosing.
- Pump with a discharge capacity of at least 20 gallons per minute. (The pump will have fuel capacity to operate for at least a 2-hour period).
- Tool cache containing long-handled round-point shovels axes or Pulaski fire tools.

Periods of increased fire danger are defined as those periods where the National Weather Service has issued a Red Flag Warning, or the New Mexico identifies the fire threat level as high.

If a fire is unmanageable, field crews will evacuate and call 911 or the district dispatch for the area. All fires will be reported to the jurisdictional fire agency, regardless of size and action taken.



