

A stronger, smarter grid will support the community's growing energy needs and maintain reliable service.

Need and Benefits

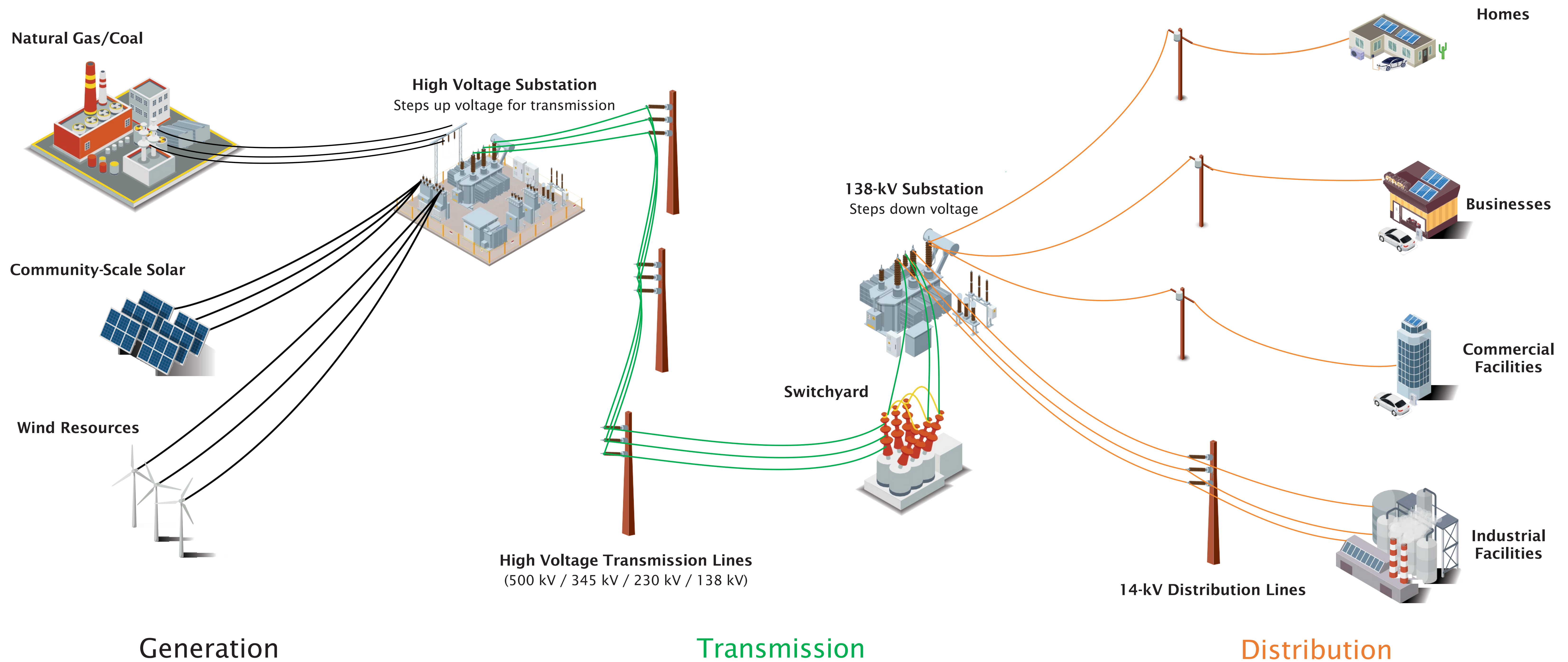
Need

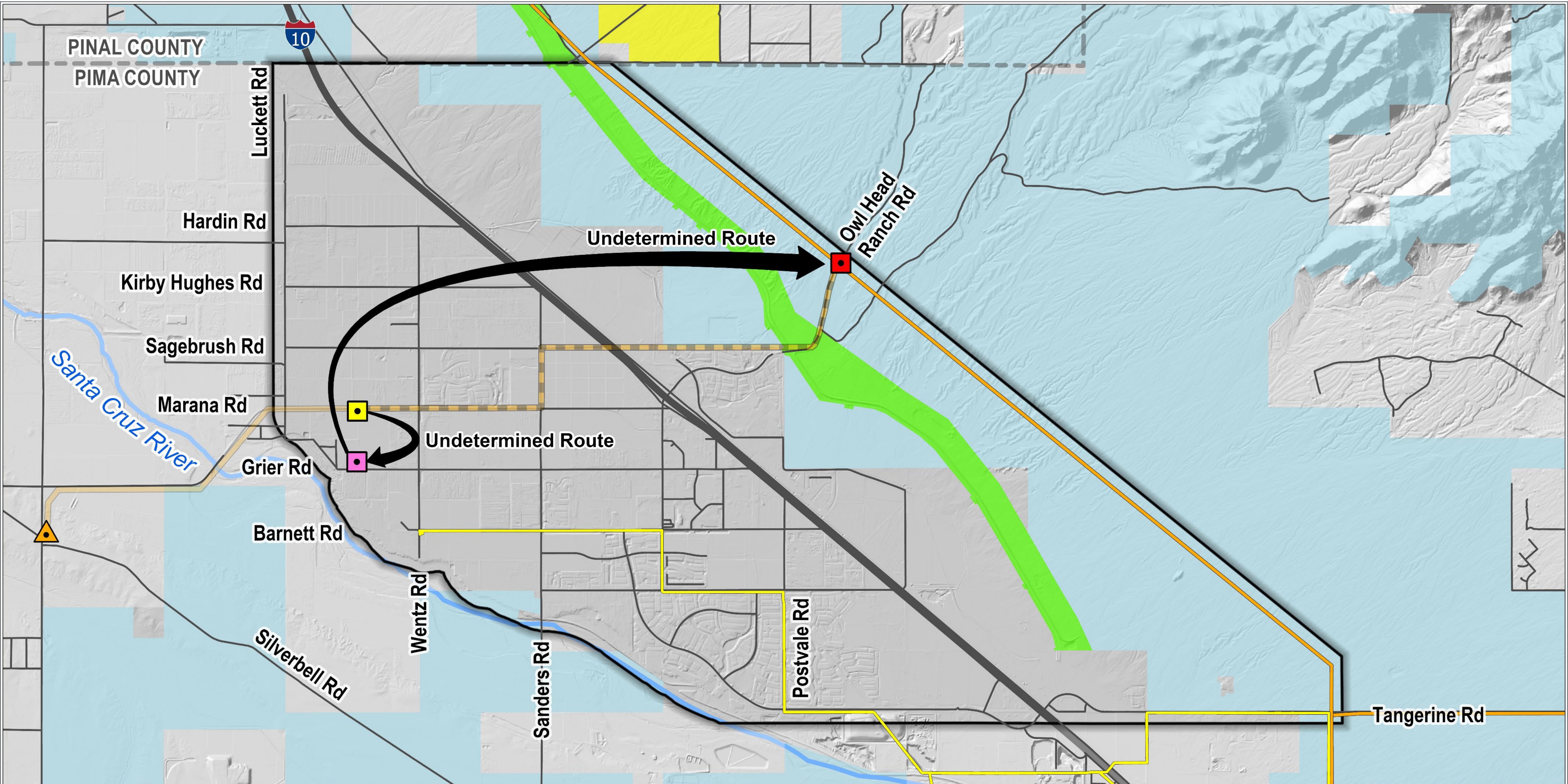
- Peak power demand in the area has nearly reached the capacity of lower-voltage systems.

Benefits

- Better electric reliability through a looped system that will help reduce the frequency and duration of outages.
- Greater transmission capacity to meet the area's growing energy needs.
- Improved grid capacity to support economic growth and prosperity.

Our Energy Grid: How we deliver electric service to you





NORTHWEST MARANA RELIABILITY PROJECT Study Area

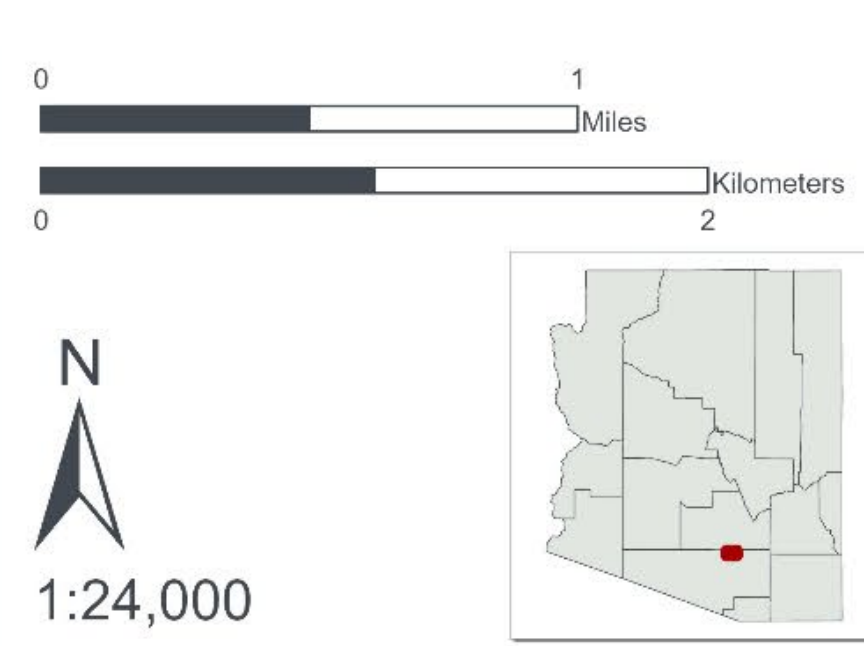
- Project Features**
- Study Area
 - Circuit Tie
 - Proposed Owl Head Ranch Switchyard
 - Approved Grier Substation
 - Approved Saguaro to Marana 115/138 kV Transmission Line

- Reference Features**
- Approved Saguaro to Marana 115 kV Transmission Line
 - Existing 46 kV Line
 - Existing 138 kV Line
 - Existing AEPCO Substation
 - Road
 - Interstate
 - County Boundary

- Land Ownership**
- Bureau of Land Management
 - Bureau of Reclamation
 - Private
 - State Trust

Pima County, AZ
 NAD 1983 UTM Zone 12N
 32.4622°N 111.2°W

Base Map: Esri ArcGIS Online, accessed January 2025
 Updated: 1/27/2025
 Project No. 84883
 Layout: Poster - Study Area
 Aprx: 84883_Marana_Siting_posters

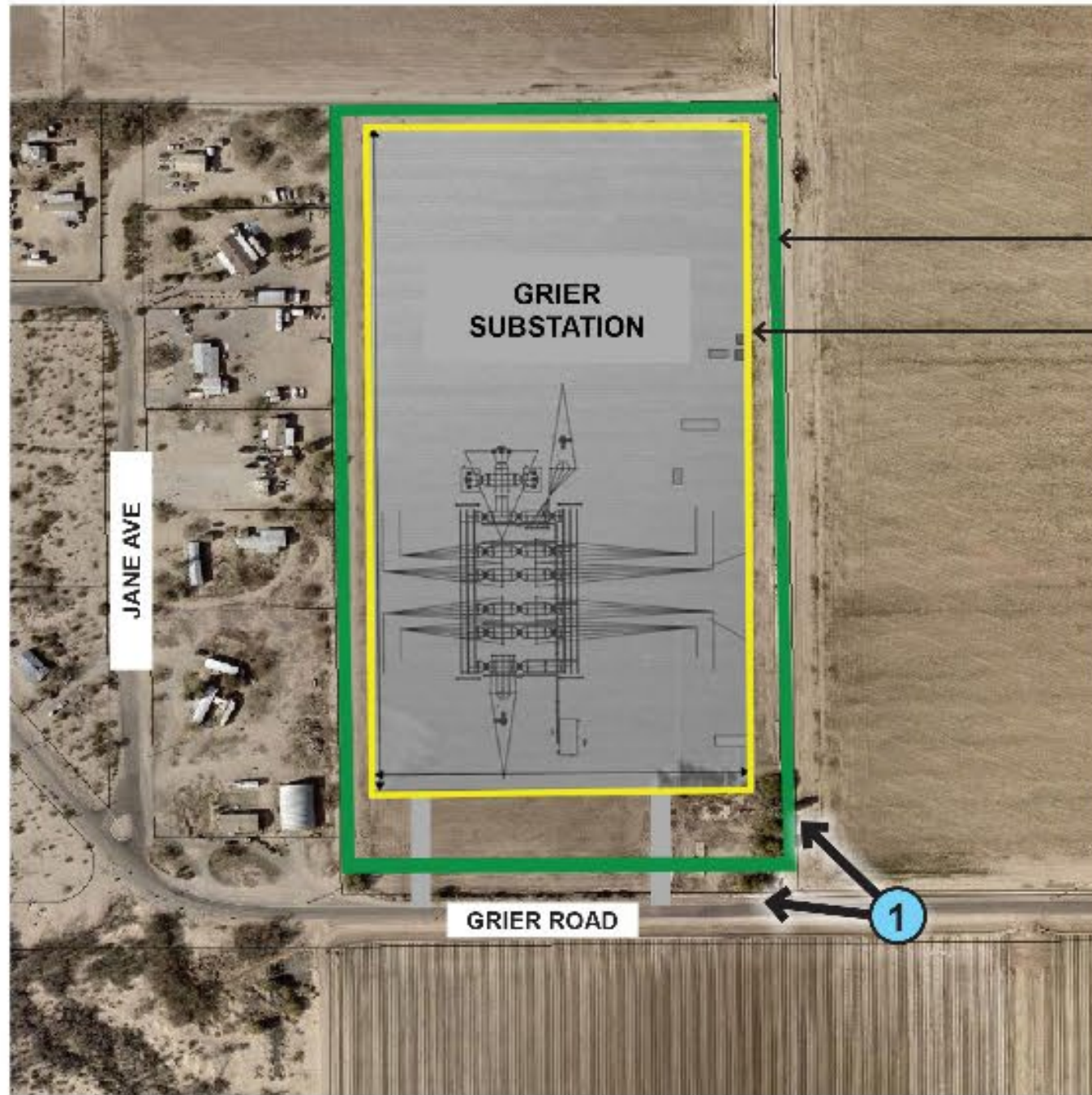


Pole Structure: Tubular, Weathering Steel Monopoles



Typical structure, approximately 74 feet in height, located at 967 S Pantano Rd in Tucson.

VIEW POINT



LANDSCAPE BUFFER / SCREEN

12' DECORATIVE MASONRY WALL

GRIER SUBSTATION PHOTO SIMULATION #1

EXISTING CONDITIONS

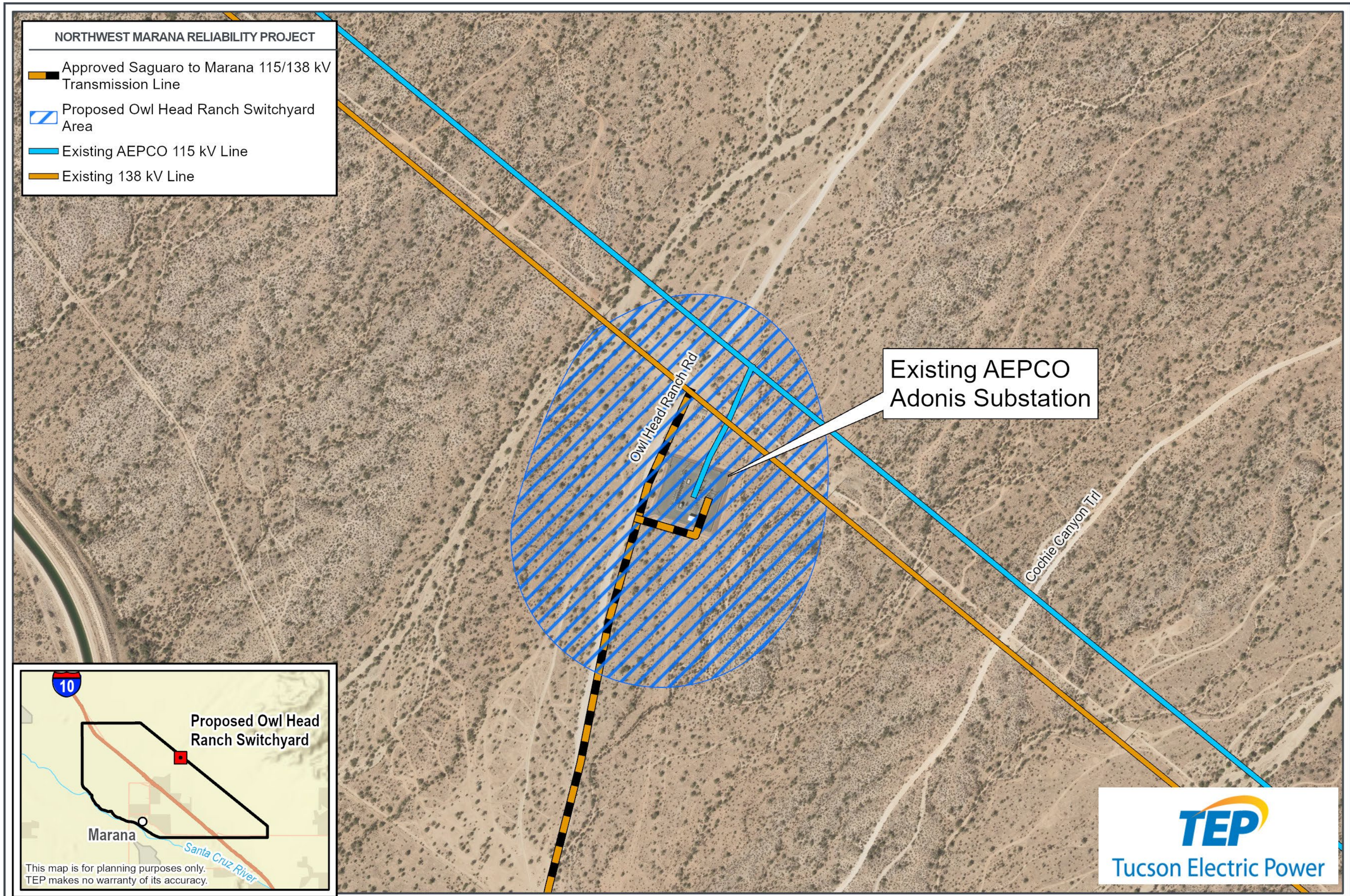


PHOTO SIMULATION



Note: This exhibit is for visual purposes only and subject to change pending final engineered plans. Transmission Structure locations are subject to ACC CEC approval. Locations shown are estimates.

Owl Head Ranch Switchyard



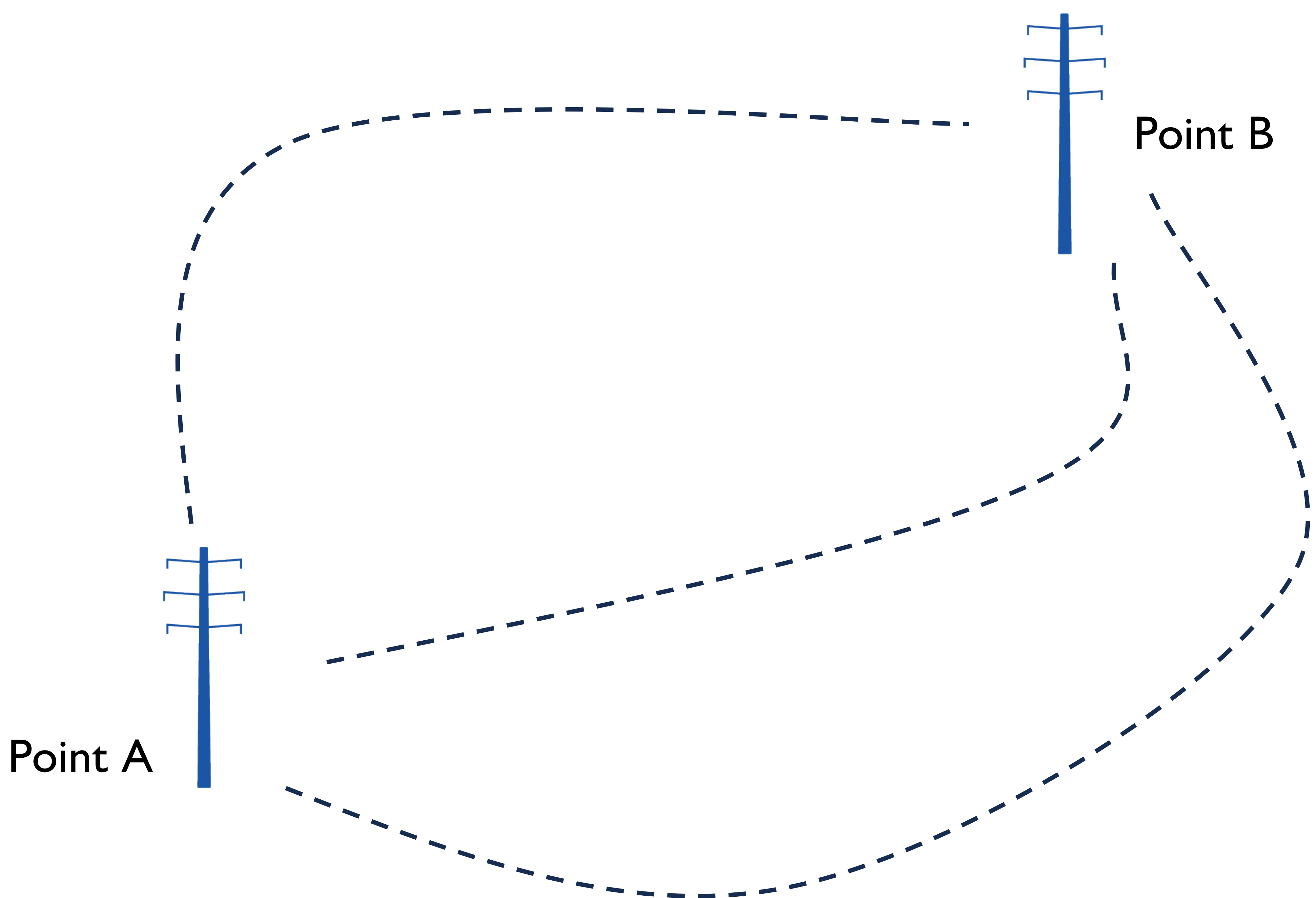
The proposed Owl Head Ranch Switchyard will be built near the existing Arizona Electric Power Cooperative's (AEPCO's) Adonis Substation.



Existing Sonoran Substation

What is Siting?

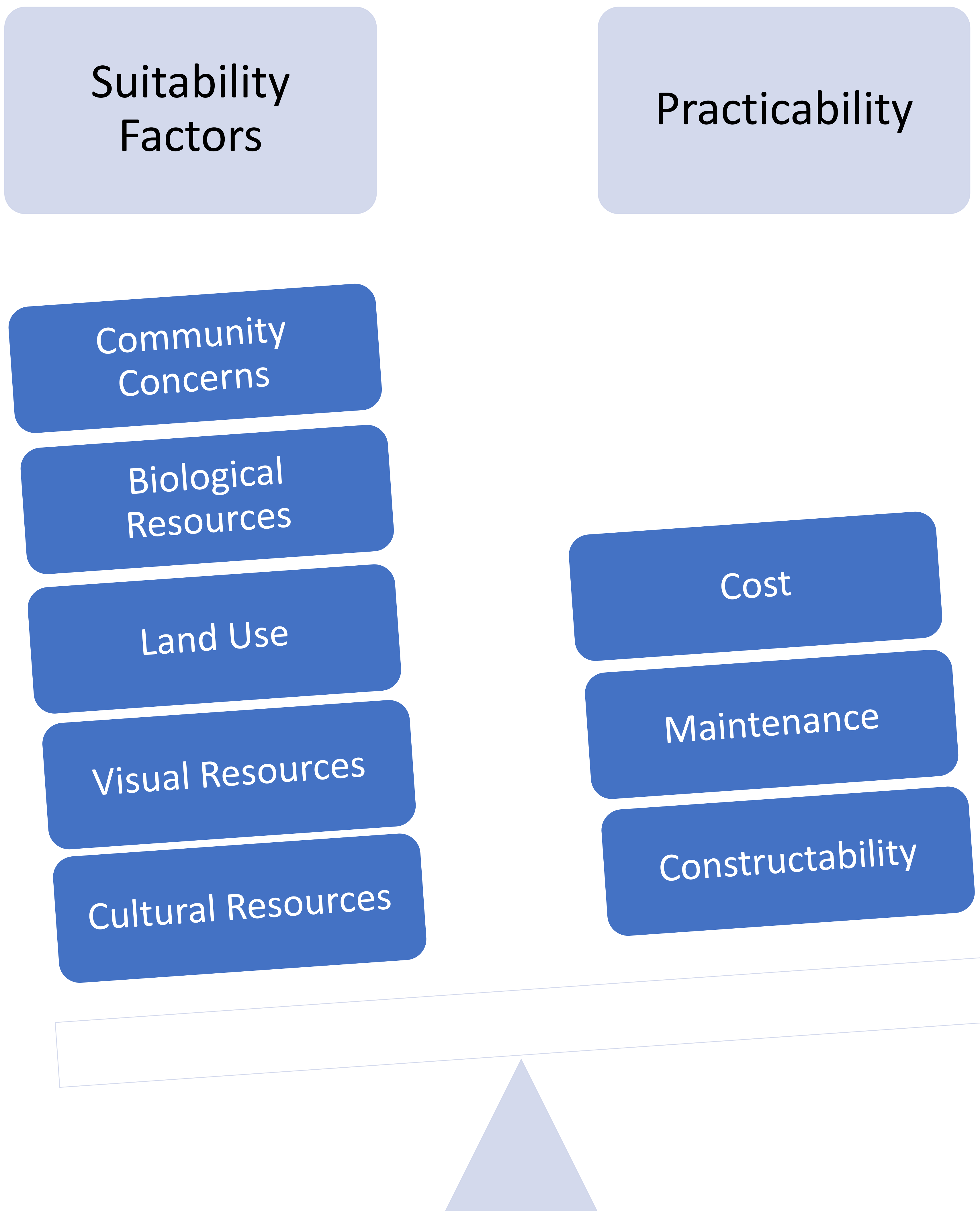
The process of determining the exact route or location where a high-voltage transmission line will be built between two or more points. These points could be new or existing substations, switchyards or energy resources.



A component of siting is permitting. Under state law in Arizona (A.R.S. § 40-360), a Certificate of Environmental Compatibility (CEC) must be approved before a transmission line can be built along an approved route.

What is Siting?

Siting considers factors important to the community and environment, and balances them with constructability, maintenance, and cost to find the most suitable path for the transmission line.



Why Not Install Transmission Lines Underground?



Cost

- Underground transmission lines cost significantly more to build and maintain.
 - The difference escalates with voltage. Higher voltages = higher underground costs.
 - 5-10x more expensive – or more. Costs vary for each project.
- Higher costs lead to higher electric rates.
- Arizona Corporation Commission has not allowed rate recovery of unnecessary costs.
- Interested parties can create improvement district to fund undergrounding in their area.



Efficiency, Consistency

- No engineering or safety justification.
- Every other TEP transmission line is installed overhead.
- Majority of transmission lines in the United States are installed overhead.
- Underground construction disturbs more land, existing facilities and archaeological resources.



Reliability

- Comparable to overhead construction, with higher maintenance costs.
- Fewer outages but longer repair times.
- Life expectancy of underground equipment is shorter.
- 138-kV transmission poles withstand extreme weather, traffic impacts.

Siting Process

Phase 1: Pre-Analysis

- Conduct Field Visits
- Develop Study Area
- Identify Opportunities and Constraints
- Conduct Public Outreach
- Develop Preliminary Segments

Phase 2: Data Inventory

- Conduct Research and Collect Data

Phase 3: Suitability Assessment

- Develop Suitability Models
- Conduct Suitability Assessment
- Field Review
- Conduct Public Outreach**
- Refine Segments

We are
here

Phase 4: Compatibility Analysis

- Conduct Compatibility Analysis
- Develop Route Alternatives
- Conduct Public Outreach
- Identify Preferred Route

Phase 5: Concept Evaluation

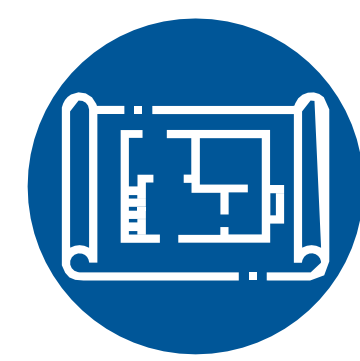
- Field Review
- Submit CEC Application
- Public Notification and Hearing

Siting Considerations

Tucson Electric Power (TEP) will consider several factors before applying for a Certificate of Environmental Compatibility. These factors, used by TEP to analyze potential line routes, include the following:



Wildlife and plant life



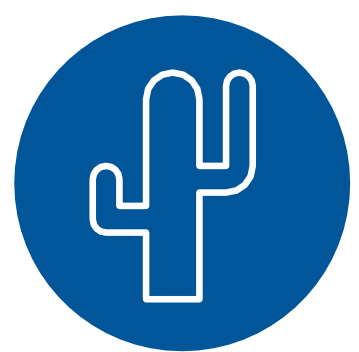
Existing development plans



Scenic areas, historic sites and archaeological sites and structures



Engineering feasibility and challenges



Environment



Project costs and potential impacts on customer rates



Noise emission levels and interference with communication signals



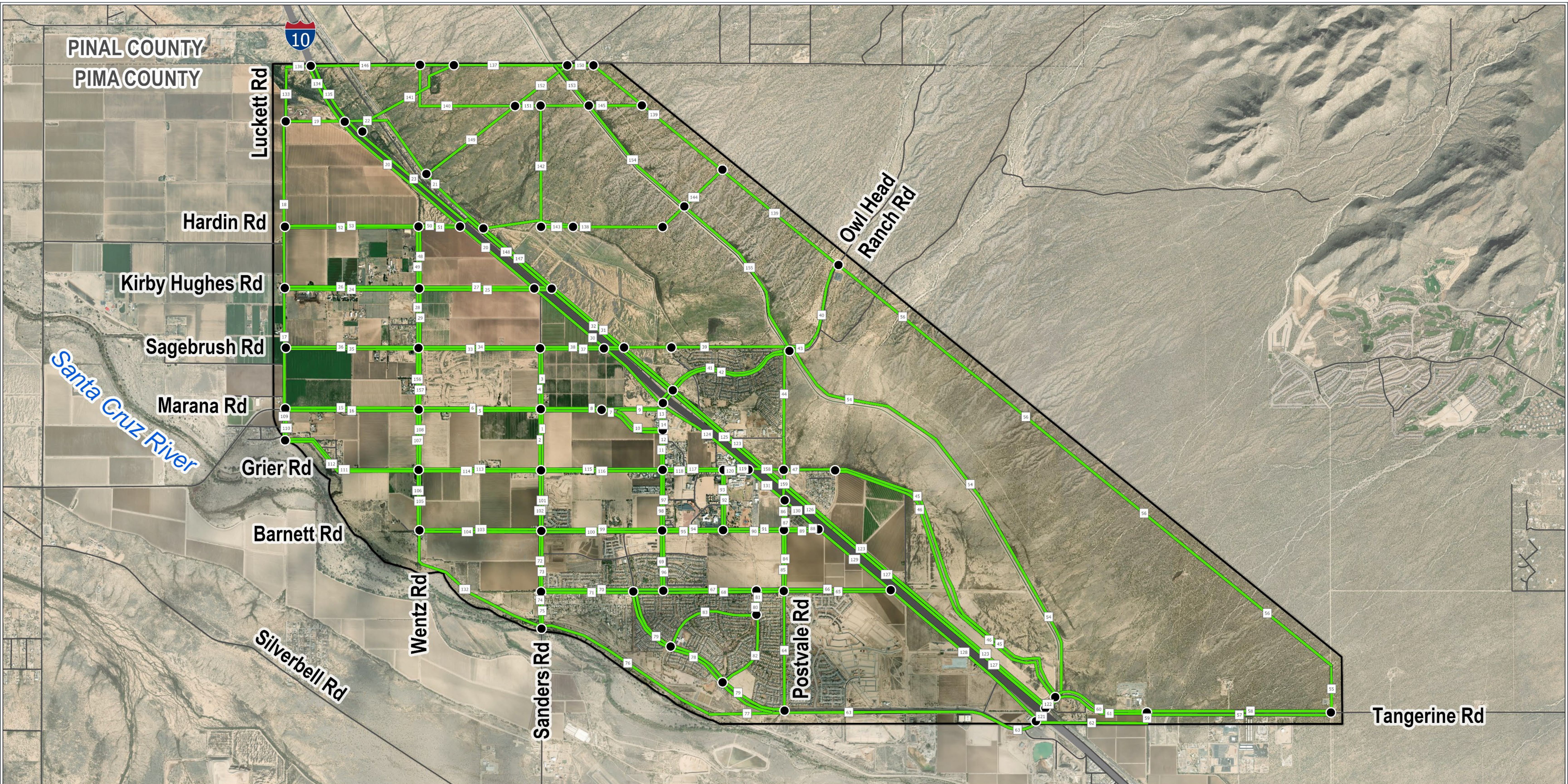
Public input



Potential public recreational uses



Interested in shaping the evaluation of transmission line routes? Scan the QR code and complete an online comment form to share your perspective on the values that matter most to you in this assessment.



PINAL COUNTY
PIMA COUNTY

Lockett Rd

Hardin Rd

Kirby Hughes Rd

Sagebrush Rd

Marana Rd

Grier Rd

Barnett Rd

Wentz Rd

Sanders Rd

Postvale Rd

Owl Head
Ranch Rd

Silverbell Rd

Tangerine Rd



Santa Cruz River

**NORTHWEST MARANA
RELIABILITY PROJECT
Preliminary
Segments**



Project Features

- Study Area
- Preliminary Link Segment
- Segment End Point

Reference Features

- Road
- Interstate
- County Boundary

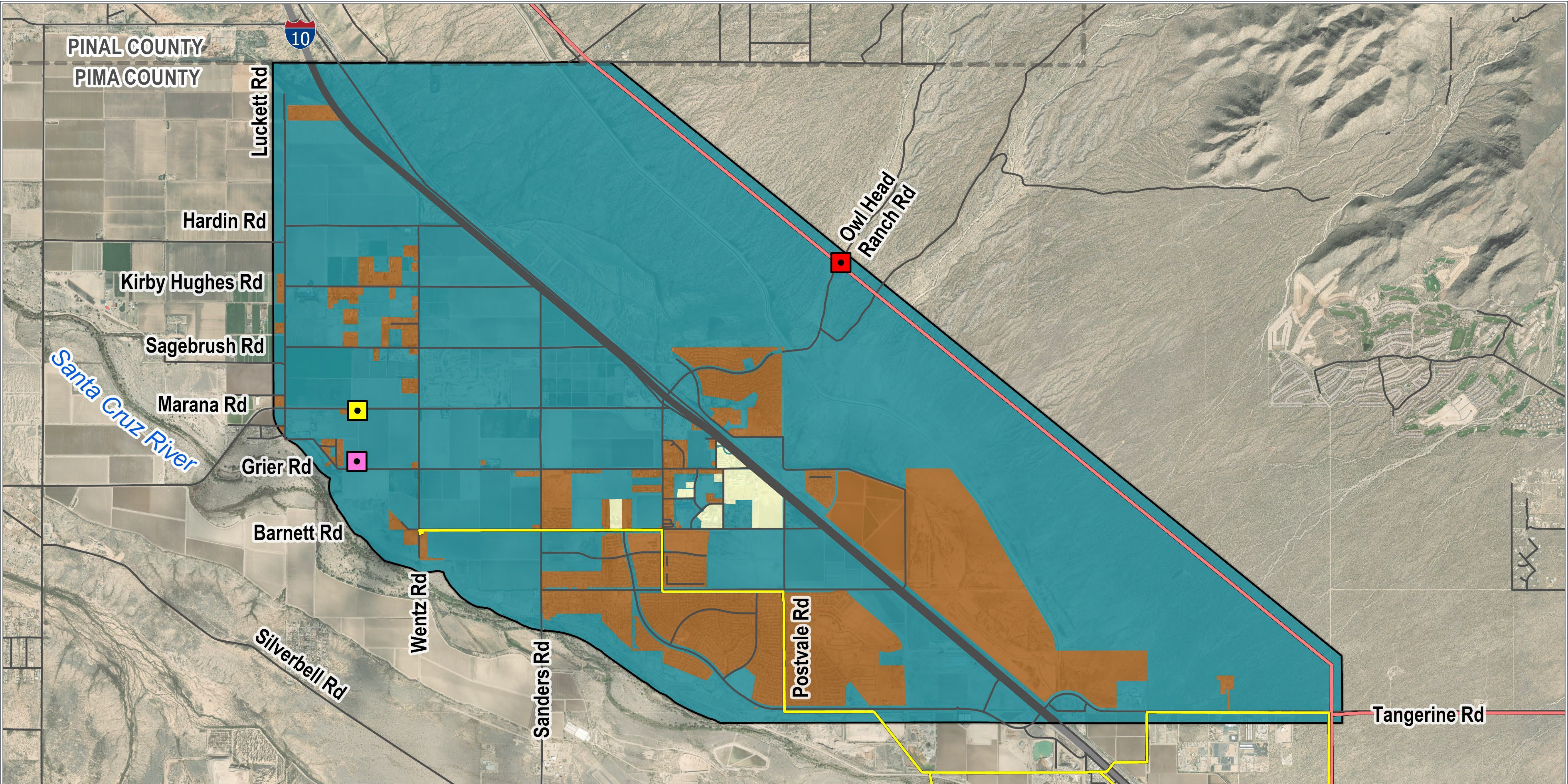
Pima County, AZ
NAD 1983 UTM Zone 12N
32.4622°N 111.2°W



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Base Map: Esri ArcGIS Online,
accessed January 2025
Updated: 1/27/2025
Project No. 84883
Layout: Poster - Link Segments
Aprx: 84883_Marana_Siting_posters



NORTHWEST MARANA RELIABILITY PROJECT
Existing Land Use Suitability

- Project Features**
- Study Area
 - Circuit Tie
 - Proposed Owl Head Ranch Switchyard
 - Proposed Grier Substation

- Reference Features**
- Existing 46 kV Line
 - Existing 138 kV Line
 - Road
 - Interstate
 - County Boundary

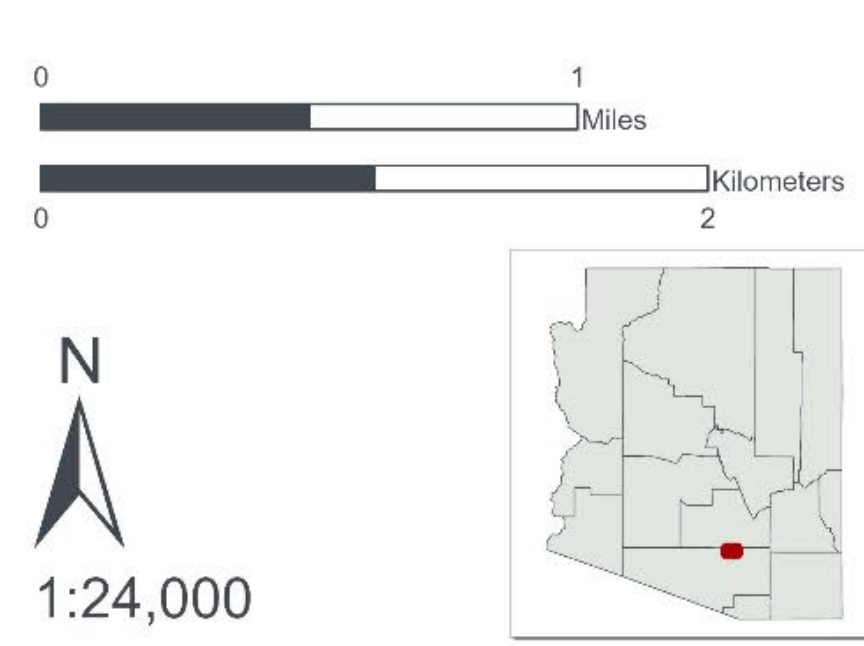
Suitability Analysis

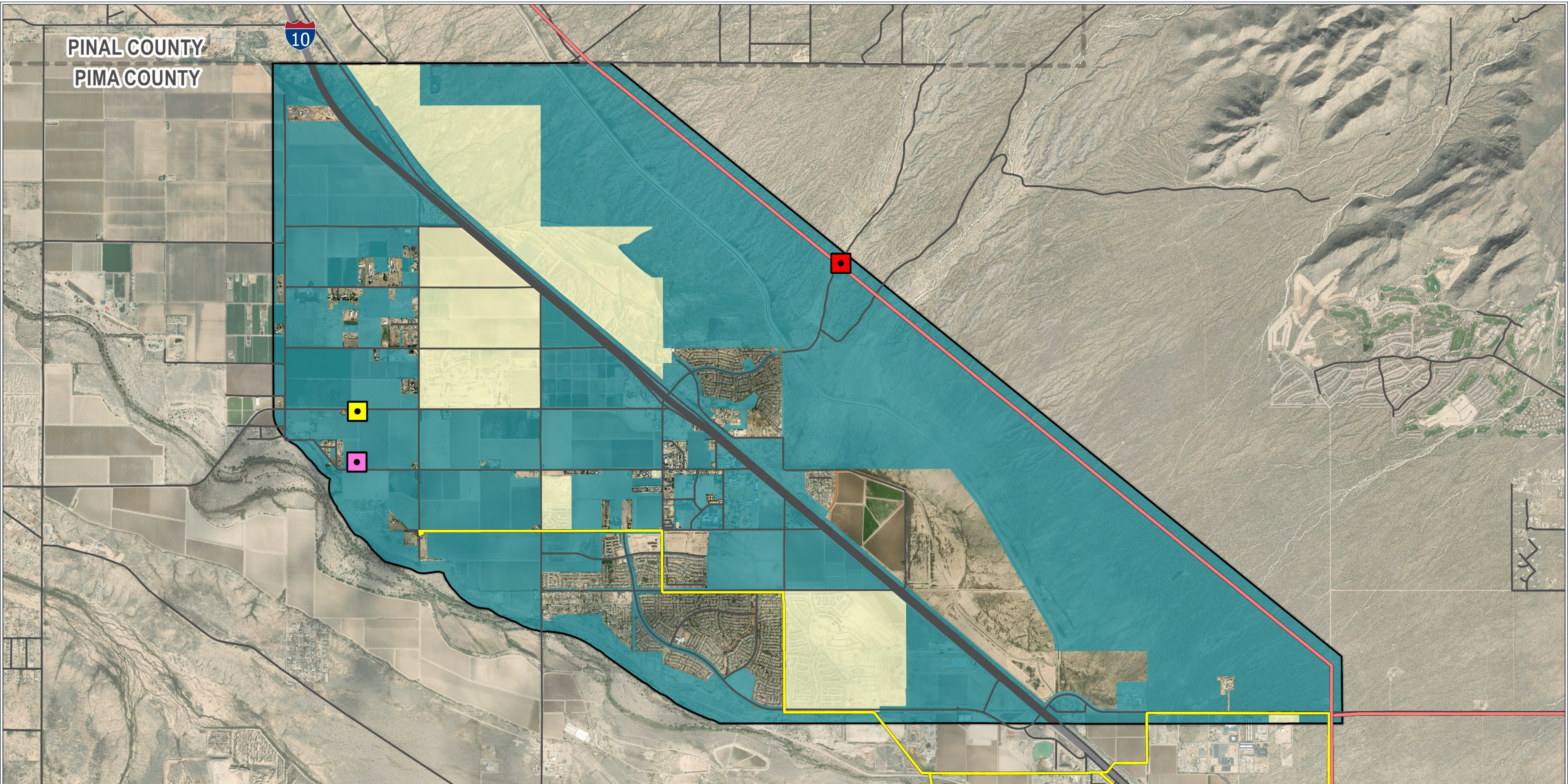
More Suitable

Less Suitable

Pima County, AZ
 NAD 1983 UTM Zone 12N
 32.4622°N 111.2°W

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 Layout: Poster - Existing Land Use Suitability





PINAL COUNTY
PIMA COUNTY



NORTHWEST MARANA RELIABILITY PROJECT
Planned Land Use Suitability

Project Features

- Study Area
- Circuit Tie
- Proposed Owl Head Ranch Switchyard
- Proposed Grier Substation

Reference Features

- Existing 46 kV Line
- Existing 138 kV Line
- Road
- Interstate
- County Boundary

Suitability Analysis

More Suitable

Less Suitable

Pima County, AZ
NAD 1983 UTM Zone 12N
32.4622°N 111.2°W

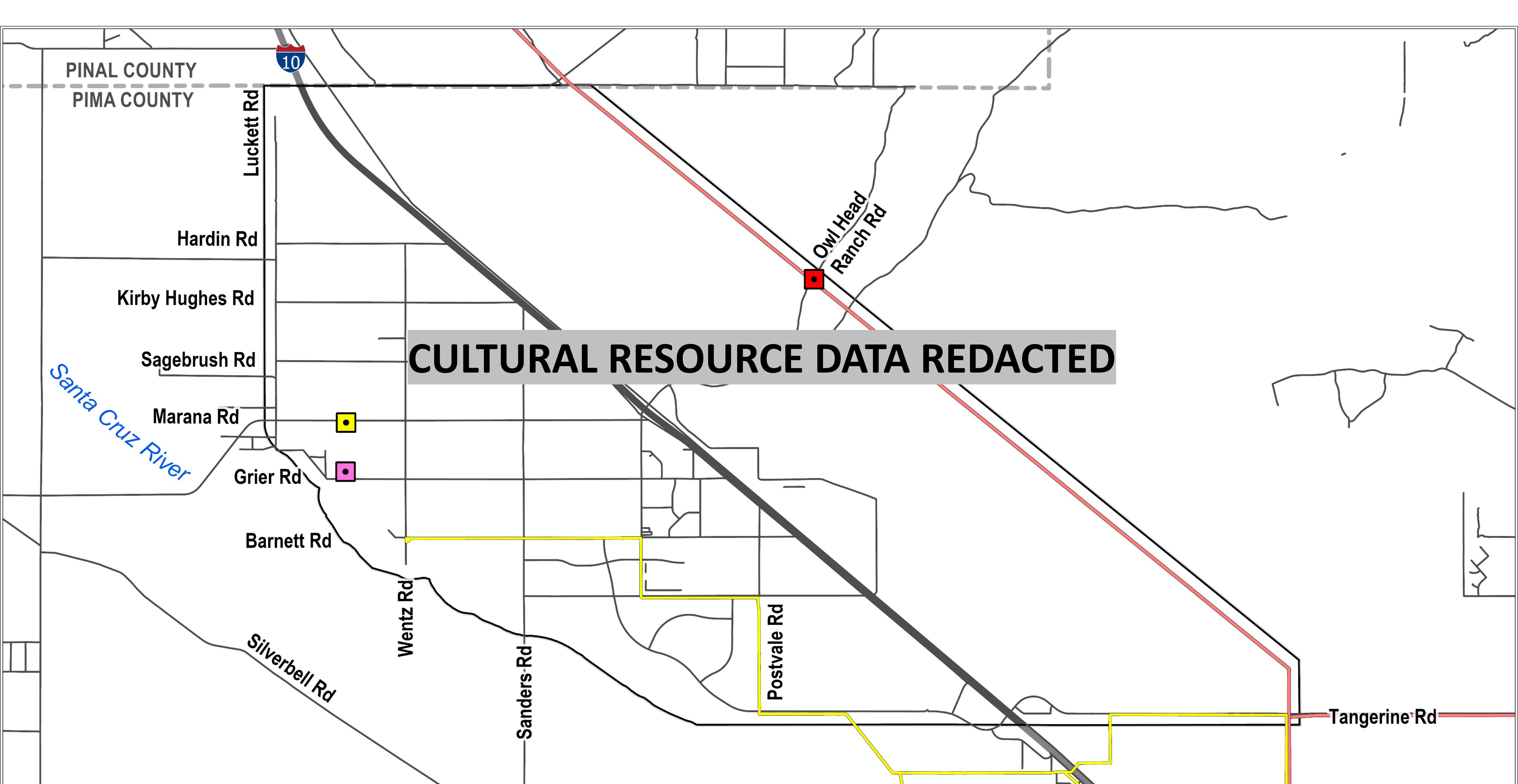
Base Map: Esri ArcGIS Online,
accessed January 2025
Updated: 1/22/2025
Project No. 84883
Layout: Poster - Planned Land Use
Suitability

0 1 Miles

0 2 Kilometers

N

1:24,000



CULTURAL RESOURCE DATA REDACTED

NORTHWEST MARANA RELIABILITY PROJECT
Cultural Resource Suitability

- Project Features**
- Study Area
 - Circuit Tie
 - Proposed Owl Head Ranch Switchyard
 - Proposed Grier Substation

- Reference Features**
- Existing 46 kV Line
 - Existing 138 kV Line
 - Road
 - Interstate
 - County Boundary

Suitability Analysis

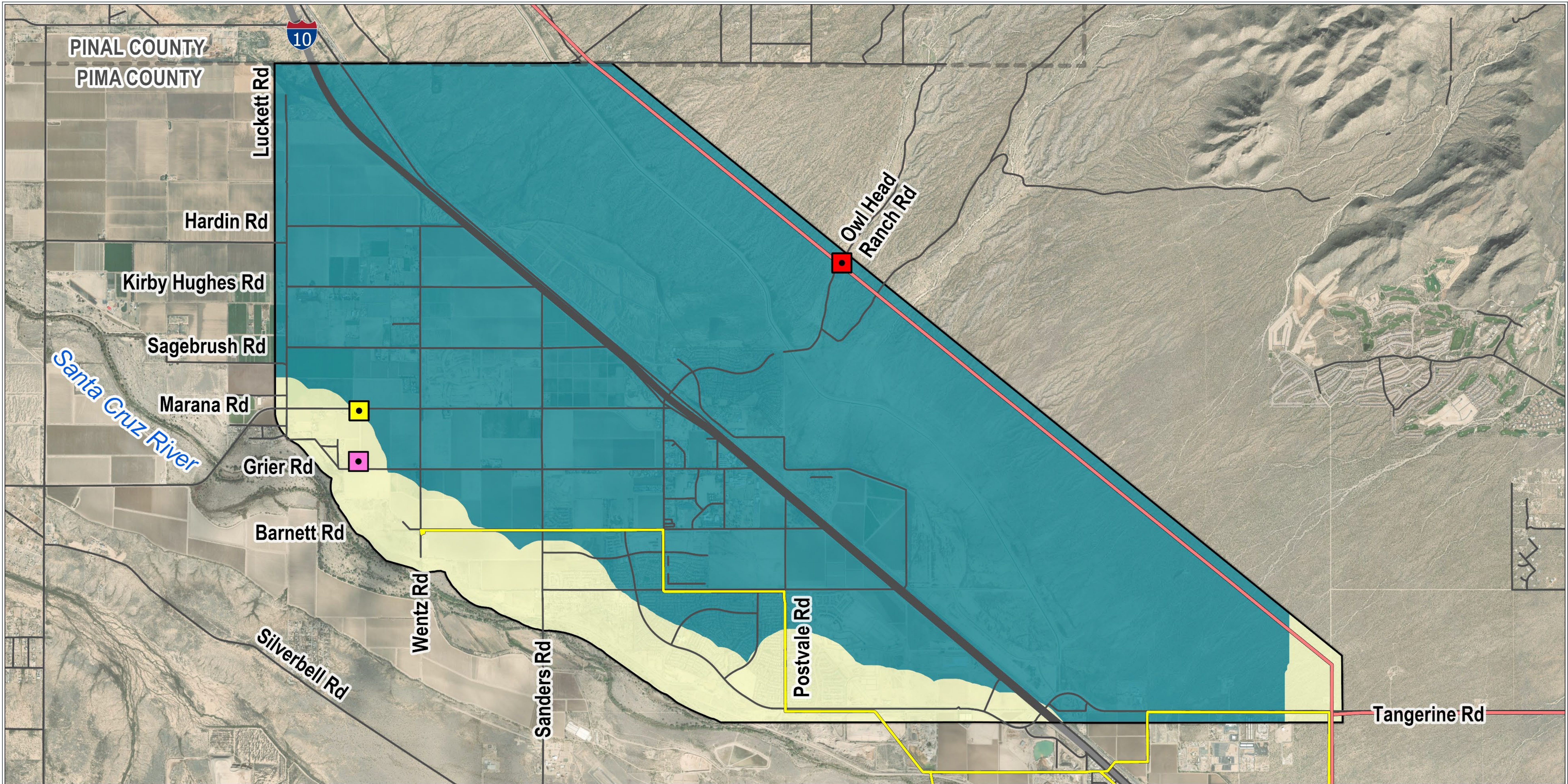
More Suitable
Less Suitable

Pima County, AZ
 NAD 1983 UTM Zone 12N
 32.4622°N 111.2°W

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 accessed January 2025
 Updated: 1/22/2025
 Project No. 84883
 Layout: Poster - Cultural Resource
 Aprx: 84883_Marana_Siting_posters

0 1 Miles
 0 2 Kilometers

N
 1:24,000



PINAL COUNTY
PIMA COUNTY

Lockett Rd

Hardin Rd

Kirby Hughes Rd

Sagebrush Rd

Marana Rd

Grier Rd

Barnett Rd

Silverbell Rd

Wentz Rd

Sanders Rd

Postvale Rd

Owl Head
Ranch Rd

Tangerine Rd

Santa Cruz River



**NORTHWEST MARANA
RELIABILITY PROJECT
Natural Resource
Suitability**



Project Features

- Study Area
- Circuit Tie
- Proposed Owl Head Ranch Switchyard
- Proposed Grier Substation

Reference Features

- Existing 46 kV Line
- Existing 138 kV Line
- Road
- Interstate
- County Boundary

Suitability Analysis



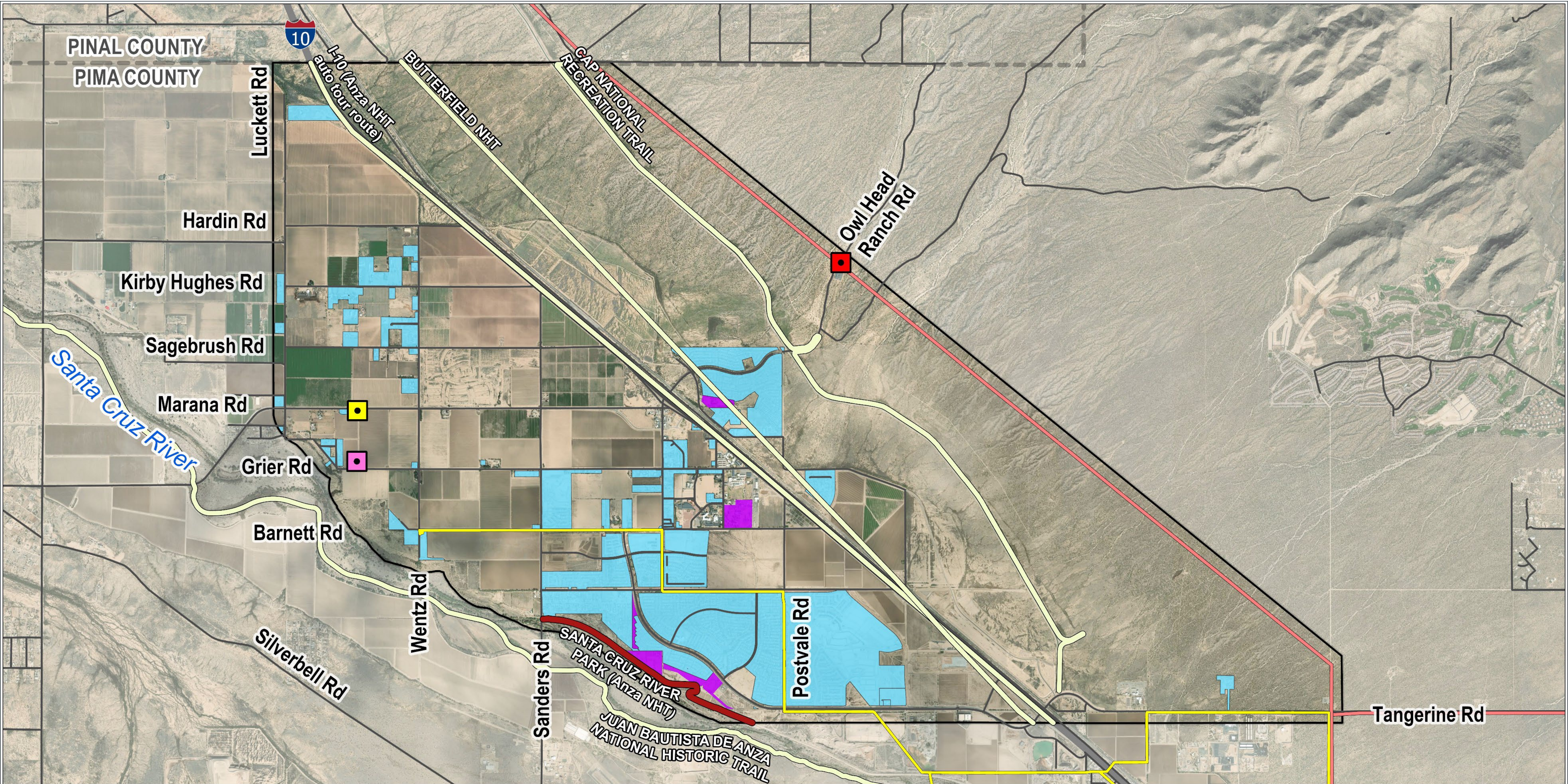
Pima County, AZ
NAD 1983 UTM Zone 12N
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Base Map: Esri ArcGIS Online,
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Updated: 1/22/2025
Project No. 84883
Layout: Poster - Natural Resource Suitability
Aprx: 84883_Marana_Siting_posters



NORTHWEST MARANA RELIABILITY PROJECT
Visual Resource Considerations

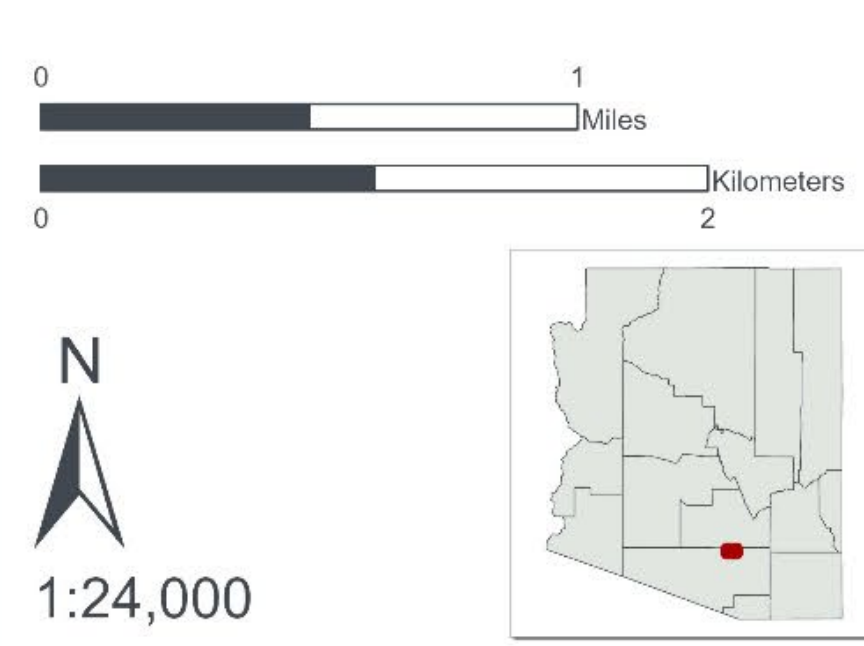
- Project Features**
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 - Proposed Grier Substation

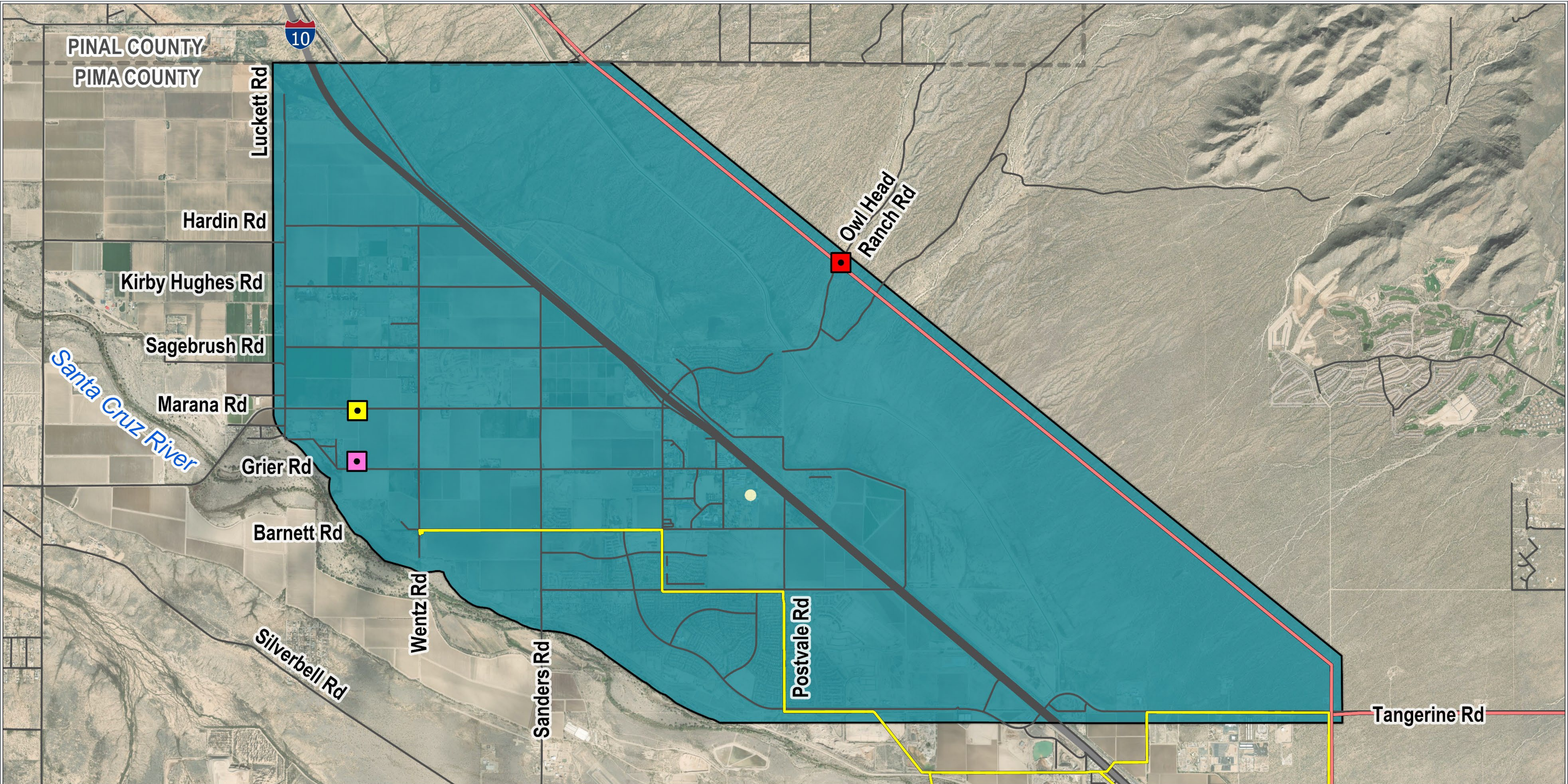
- Reference Features**
- Existing 46 kV Line
 - Existing 138 kV Line
 - Road
 - Interstate
 - County Boundary

- Viewing Locations**
- High Sensitivity Linear Viewer
 - Moderate Sensitivity Linear Viewer
 - High Sensitivity Viewer
 - Moderate Sensitivity Viewer

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 Layout: Poster - Visual Suitability
 Aprx: 84883_Marana_Siting_posters

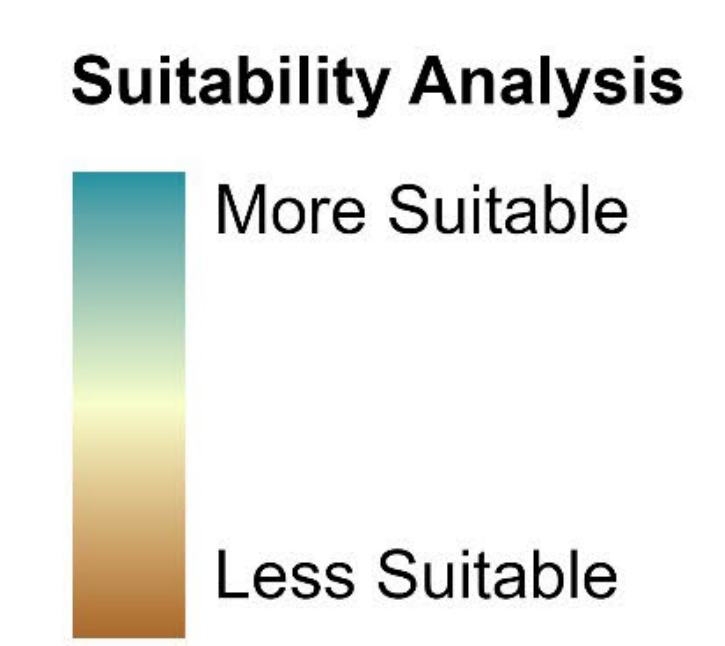




NORTHWEST MARANA RELIABILITY PROJECT
Communications Suitability

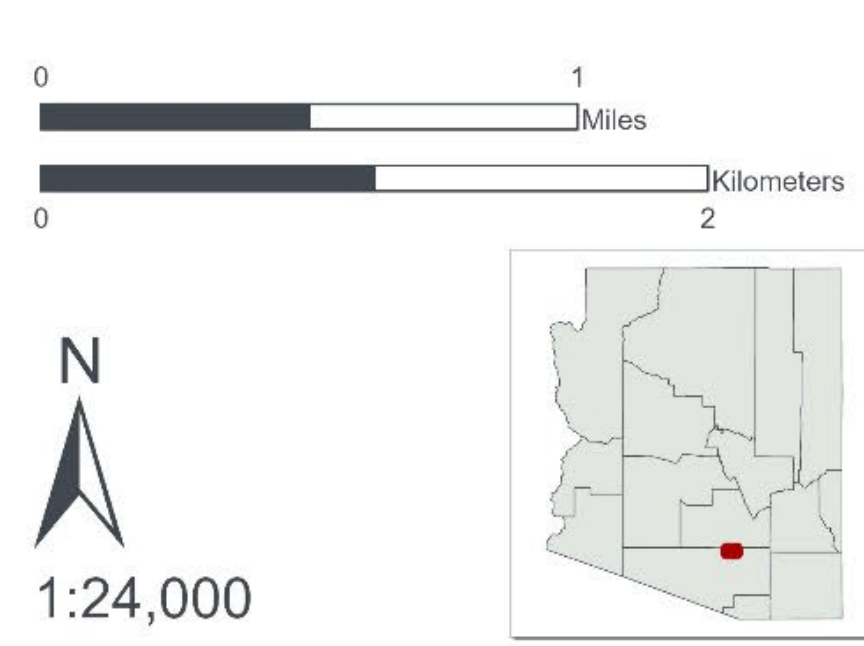
- Project Features**
- Study Area
 - Circuit Tie
 - Proposed Owl Head Ranch Switchyard
 - Proposed Grier Substation

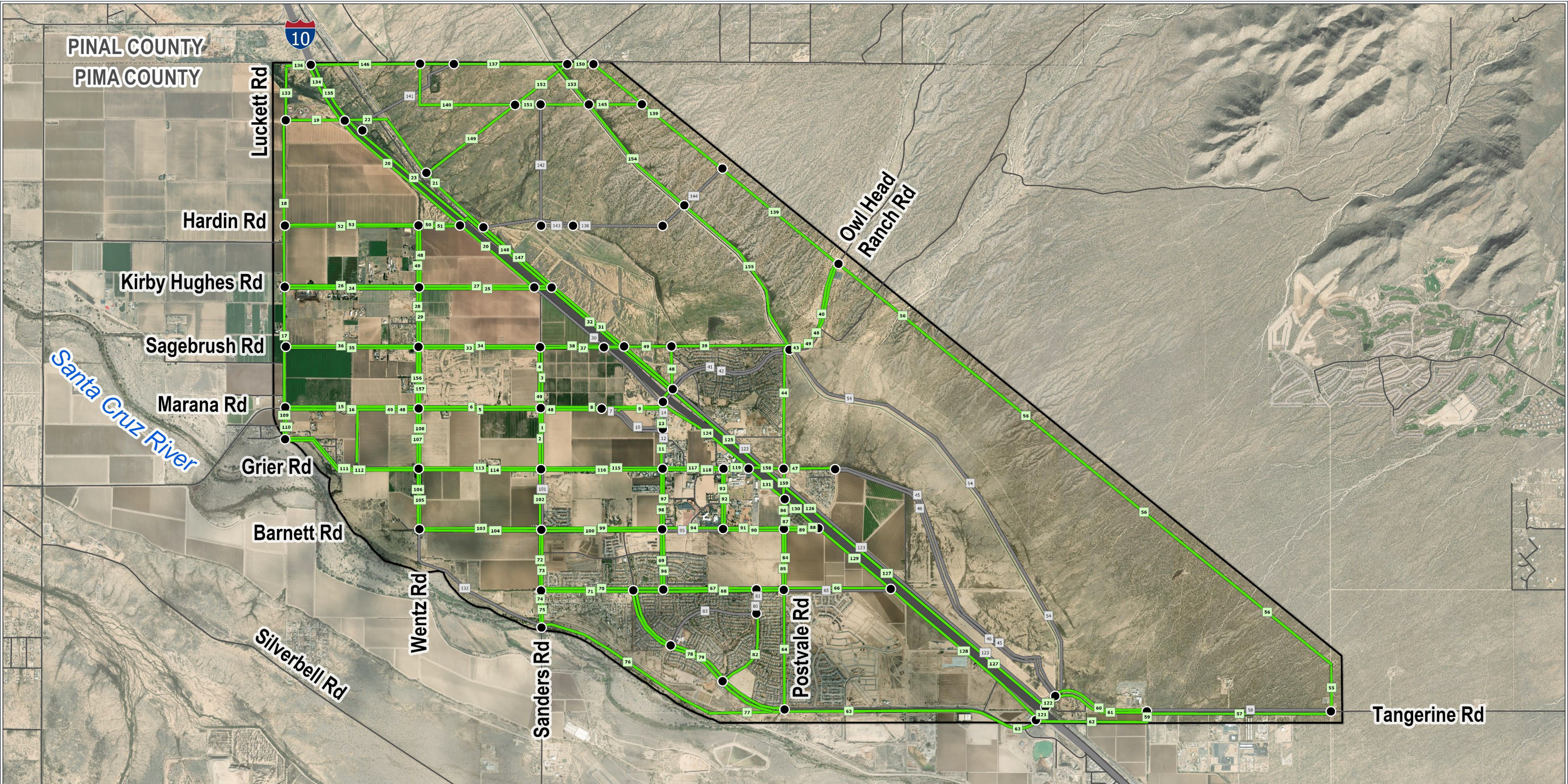
- Reference Features**
- Existing 46 kV Line
 - Existing 138 kV Line
 - Road
 - Interstate
 - County Boundary



Pima County, AZ
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 Project No. 84883
 Layout: Poster - Communications
 Suitability





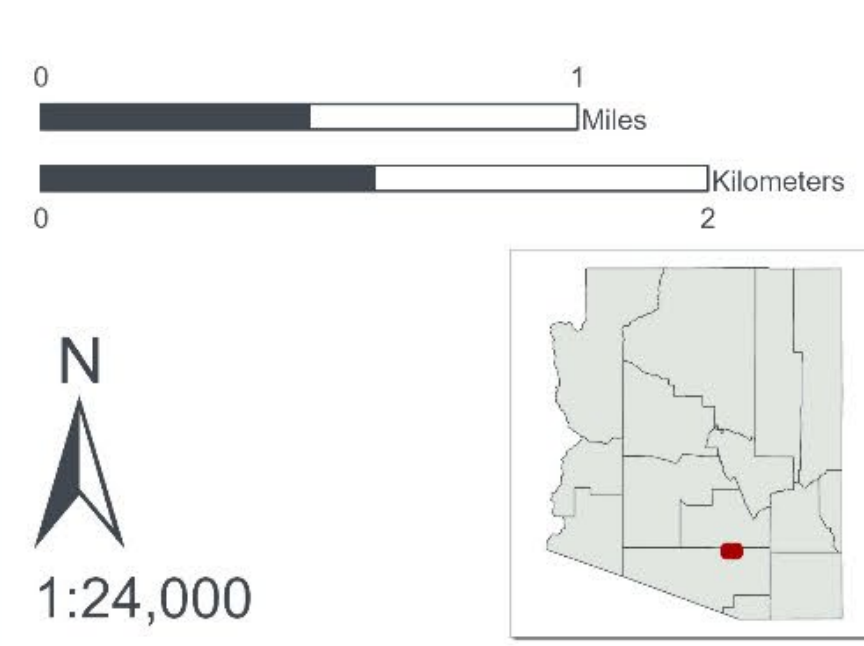
NORTHWEST MARANA RELIABILITY PROJECT
Refined Link Segments

- Project Features**
- Study Area
 - Retained Link Segment
 - Removed Link Segment
 - Segment End Point

- Reference Features**
- Road
 - Interstate
 - County Boundary

Pima County, AZ
 NAD 1983 UTM Zone 12N
 32.4622°N 111.2°W

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 Aprx: 84883_Marana_Siting_posters



Timeline



We Want to Hear from You

How to Provide Official Public Comment

Fill out an online comment form at:

tep.com/northwest-marana

Email comments to:

nwmarana@tep.com

Call:

1-833-655-0399 and leave a
voicemail message

Mail a letter with comments to:

Northwest Marana Reliability Project
ATTN: Theresa Knoblock
343 West Franklin Street
Tucson, Arizona 85701

An interactive map is posted on our
website.

More Information

tep.com/northwest-marana



Cómo proporcionar un comentario público oficial

Llenando un formulario de comentarios en línea:

tep.com/northwest-marana

Enviando comentarios por correo electrónico a:

nwmarana@tep.com

Llamando al:

1-833-655-0399 y dejar un
mensaje de correo de voz

Enviando una carta con comentarios a:

Northwest Marana Reliability
Project
ATTN: Theresa Knoblock
343 West Franklin Street
Tucson, Arizona 85701

Para ver un mapa interactivo,
visite la página web del proyecto.

Más información

tep.com/northwest-marana-espanol

