# Southwest Tucson Reliability Project

# Welcome

## Please Sign In

# Bienvenidos

## (Hablamos Español)

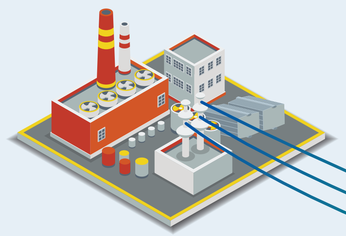
## Por Favor Regístrese

tep.com/southwest-tucson-reliability-project

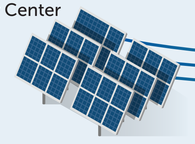
# Our Energy Grid
## How we deliver electric service to you

Tucson Electric Power

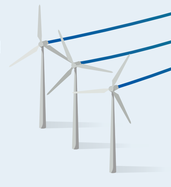
**Natural Gas**
Sundt Generating Station
in Tucson and others



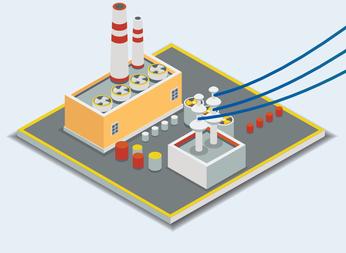
**Community Scale Solar**
Wilmot Energy Center
and others

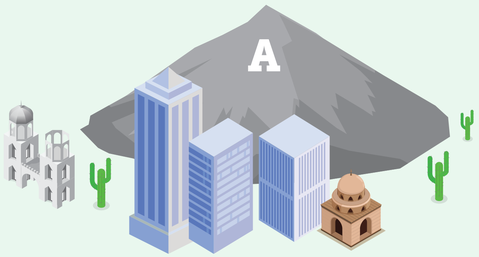


**Wind Resources**
Oso Grande Wind
and others

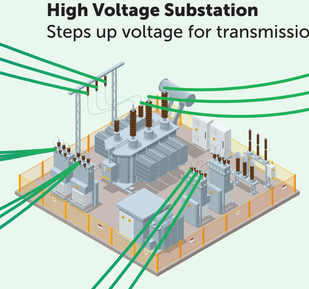


**Coal**
Springerville Generating Station
and others



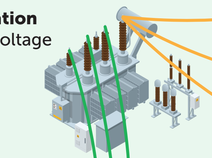



**High Voltage Substation**
Steps up voltage for transmission

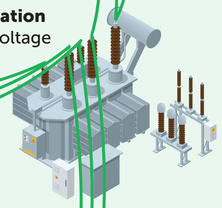


**High Voltage Transmission Lines**
(500 kV / 345 kV / 230 kV 138 kV)

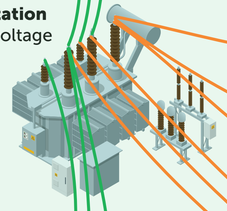
**46 kV Substation**
Steps down voltage



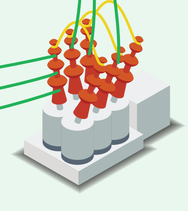
**138 kV Substation**
Steps down voltage



**138 kV Substation**
Steps down voltage



**Switchyard**



**Homes**

**Businesses**

**4 kV Distribution Lines**

**Commercial Facilities**

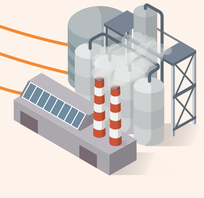
**Homes**

**Businesses**

**Commercial Facilities**

**14 kV Distribution Lines**

**Industrial Facilities**



Generation

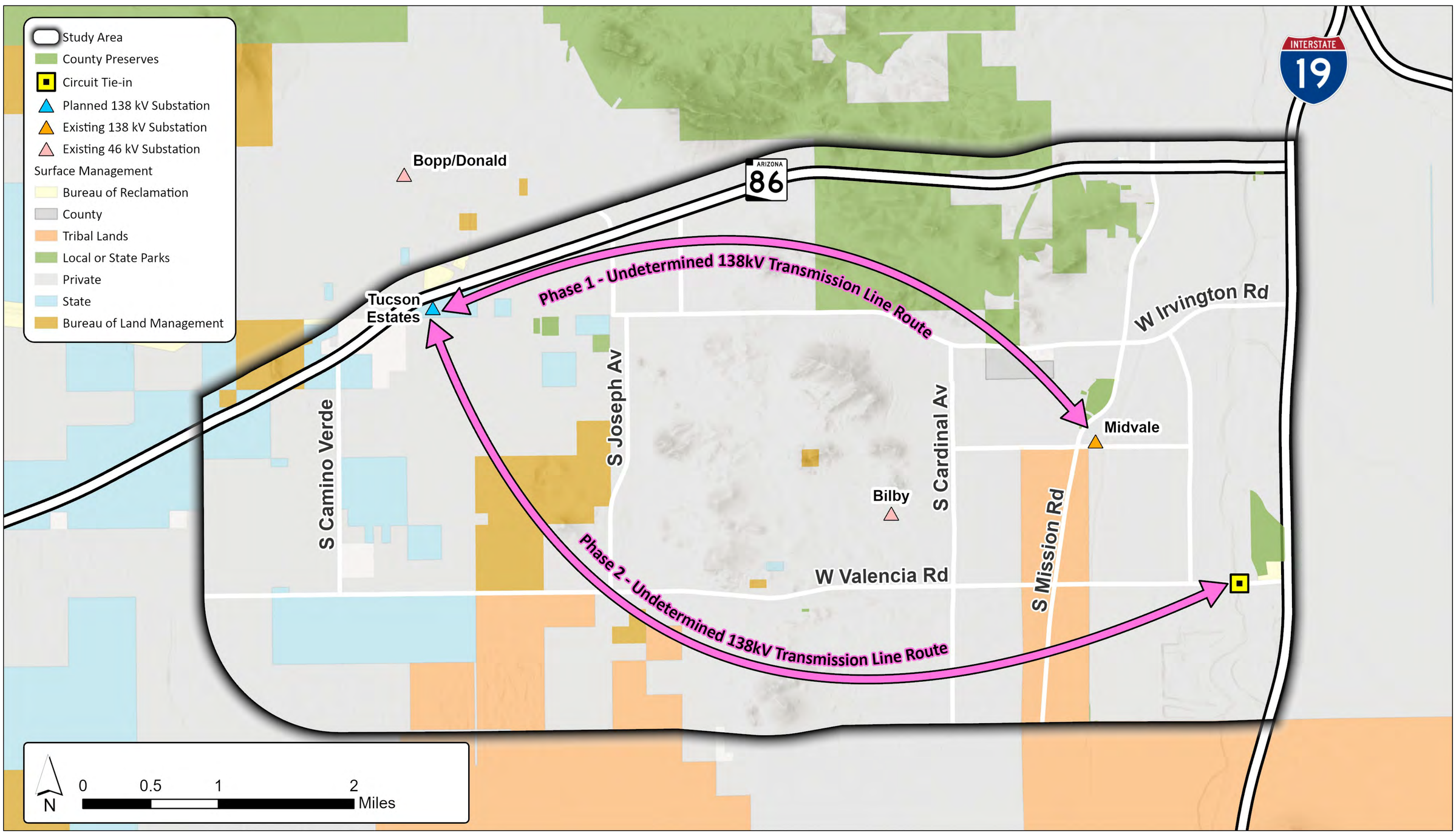
Transmission and Sub-Transmission

Distribution

# Southwest Tucson Reliability Project

## Purpose

- Replace the 46 kV system with a new looped 138 kV transmission line and substation to support long-term reliability.




**Project Map—Phase 1 and Phase 2 Conceptual Routes**

## Need

- Existing distribution system is supported by a radial 46 kV source.
- Existing system is at risk, with the potential for extended customer outages.

## Benefits

- Upgrade from older lower voltage system, to modern 138 kV standard.
- Reduce outages and improve system reliability.
- Increase capacity to provide electrical service to existing and new customers.

# Southwest Tucson Reliability Project

September 2026

CEC Application Submittal

Quarter 1 2027

ACC Open Meeting

2029

Construction of Phase 1:

Tucson Estates to Midvale Substation

2025 | 2026 | 2027 | 2028 | 2029 | 2030

October 2025 – September 2026

Transmission Line Planning and Siting

November 2026

Line Siting Public Hearing

2027—2028

Acquire Land Rights, Detailed Engineering, and Procure Materials

2030

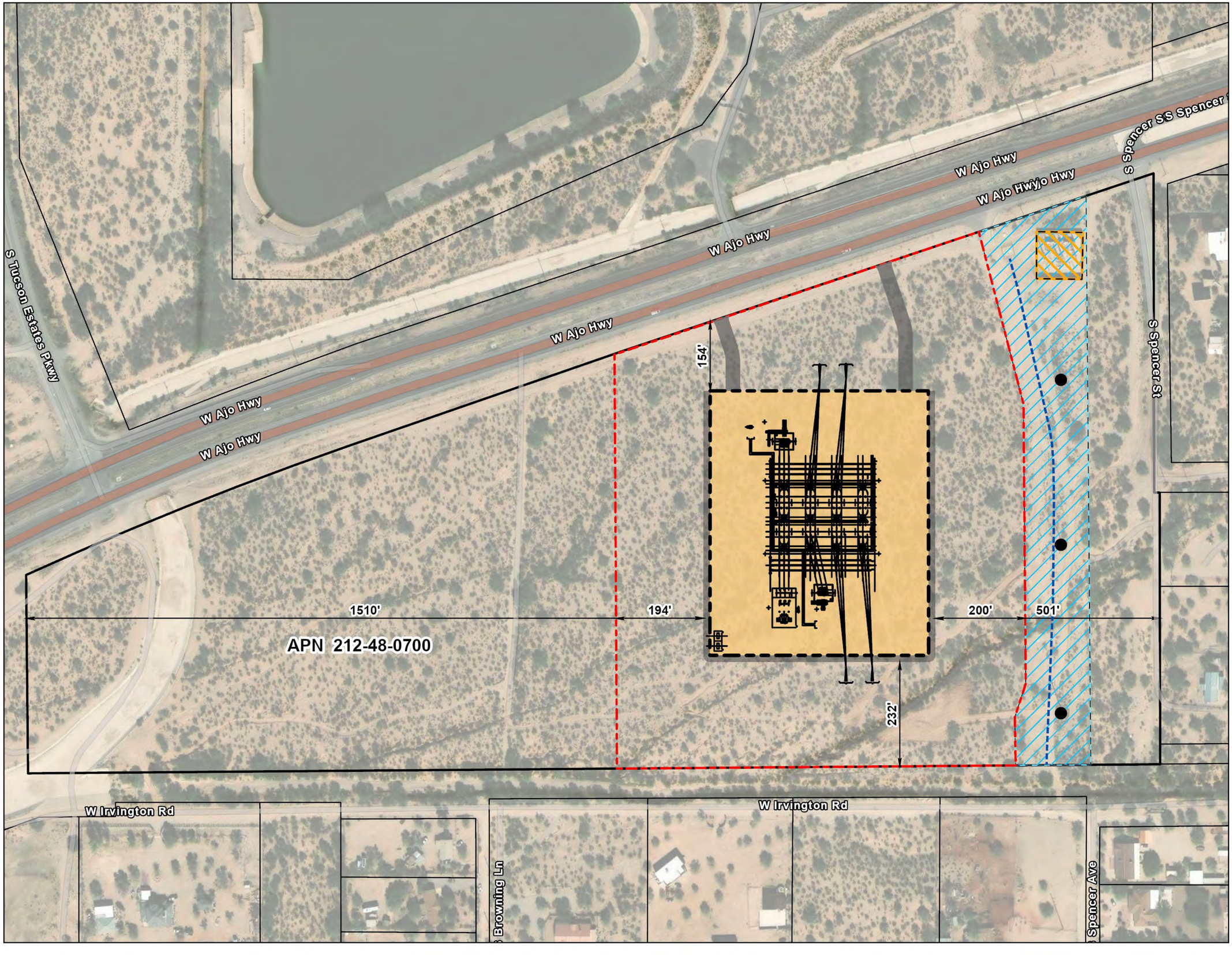
Construction of Phase 2:

Tucson Estates Substation to Circuit Tie

# Tucson Estates Substation

## Preliminary Design

### ASLD Lease
### KE 14-124573-00-100




- Transmission Structures
- BOR Aquaduct (Approx.)
- Equipment
- 15 Acre Lease Site
- Security Wall
- Security Road
- Subject Parcel
- Parcels
- BOR 4.19 A.c Permanent Easement
- WAPA Substation

Sonoran Land Resources

Sources: Pima County, TEP, ESRI
Projection: NAD 83 UTM Zone 12N
Basemap: ESRI World Imagery

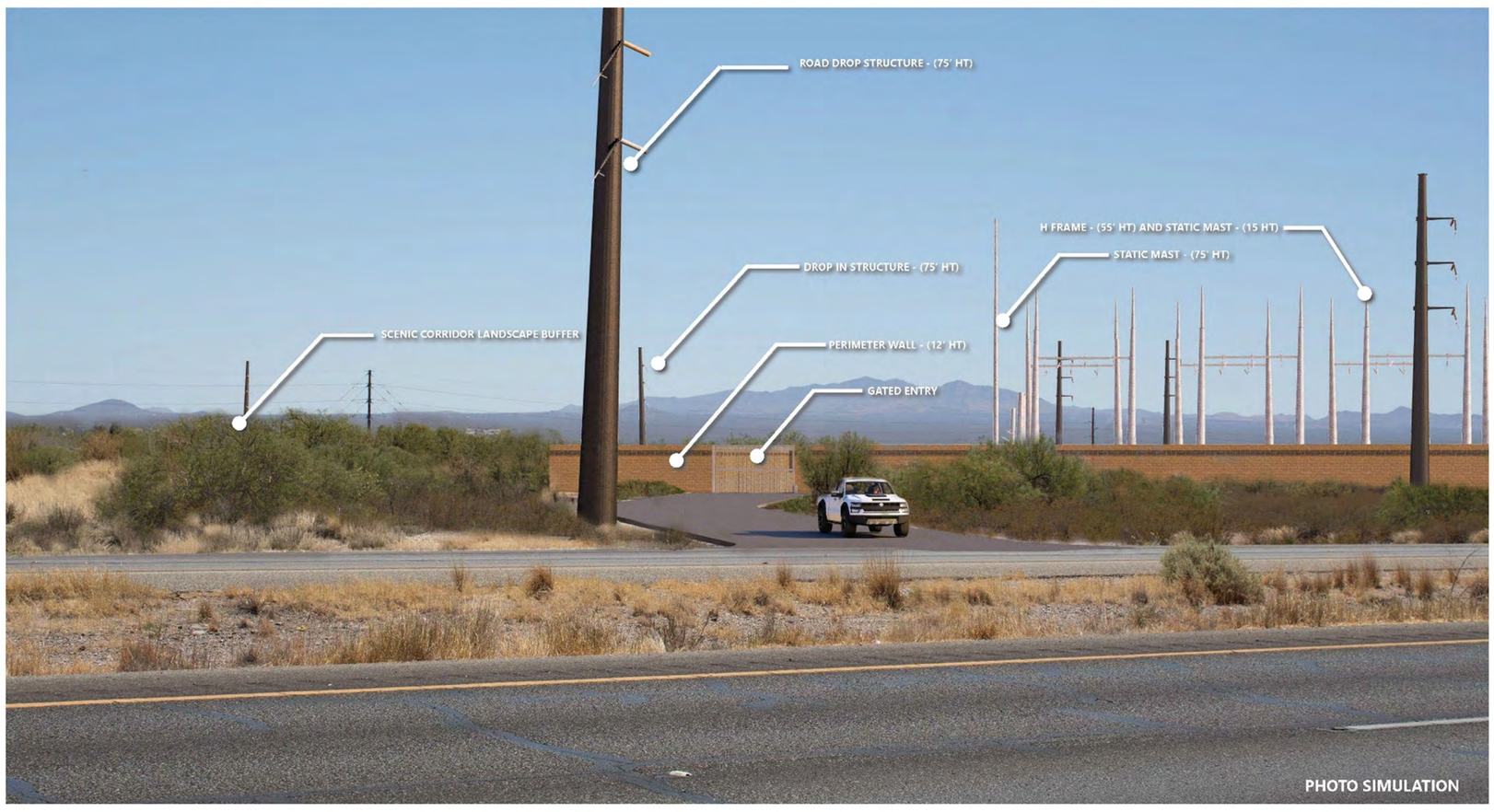
This map is for planning purposes only. TEP and Sonoran Land Resources makes no warranty of its accuracy.

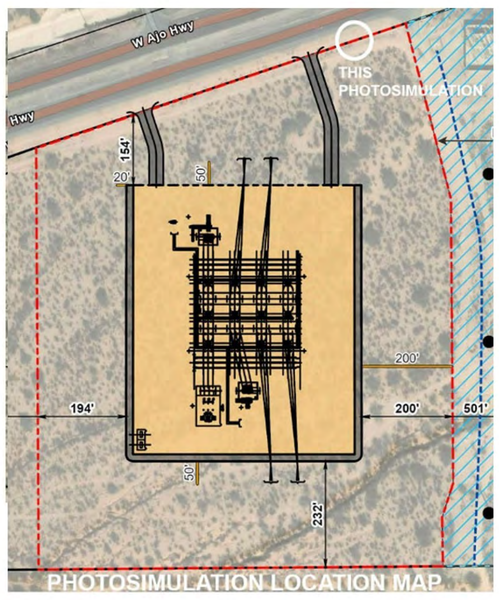
0 150 300 Feet

N

# Tucson Estates 138 kV Substation
# Photo Simulations

## PHOTO SIMULATION 1

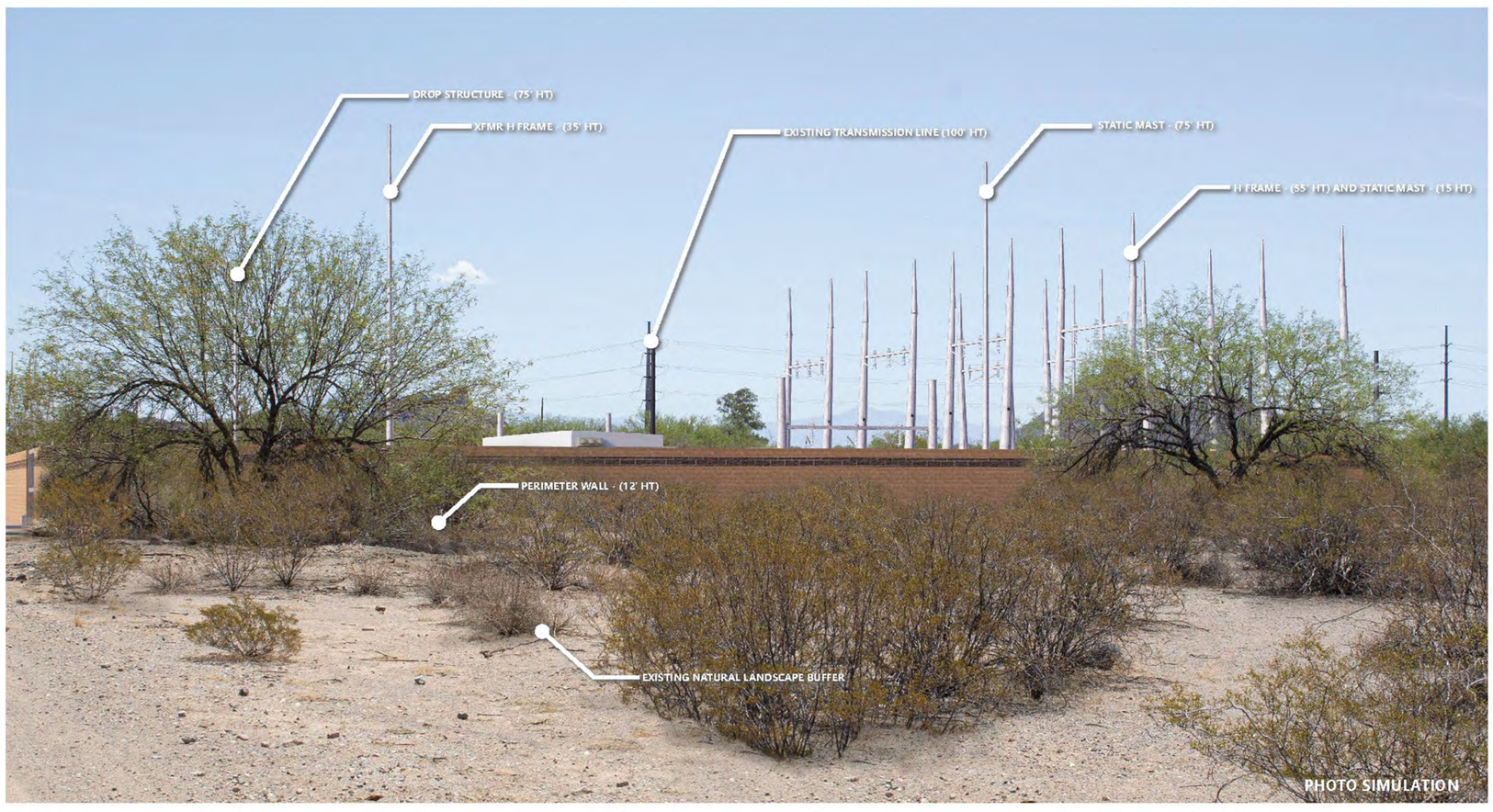


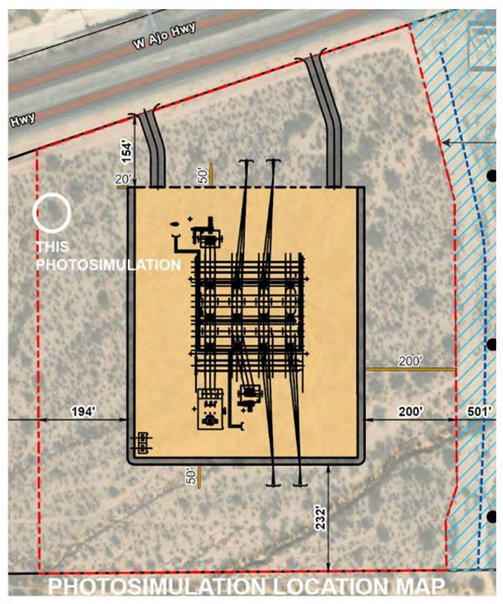







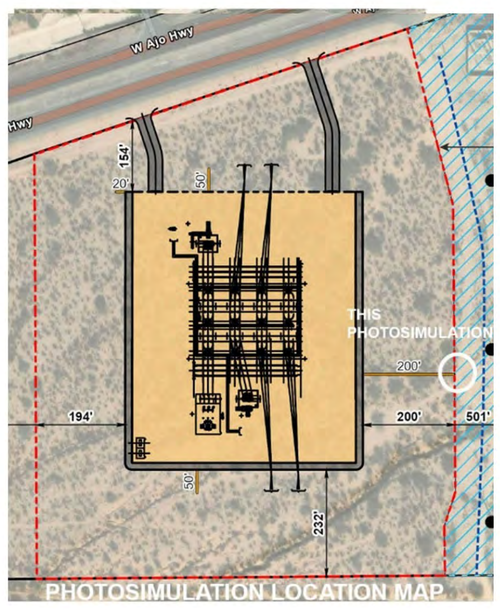
## PHOTO SIMULATION 2




# Tucson Estates 138 kV Substation
# Photo Simulations

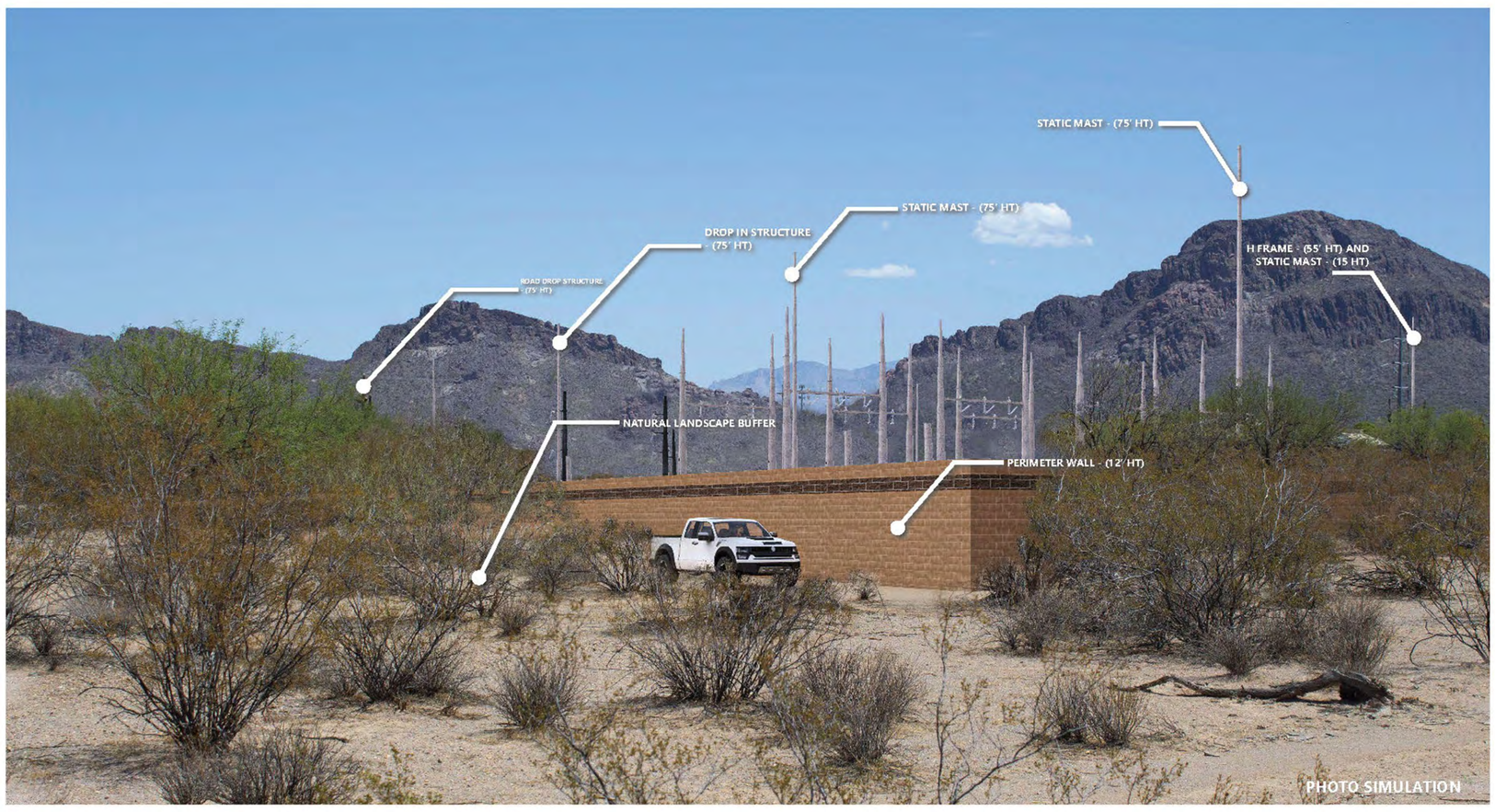
## PHOTO SIMULATION 3

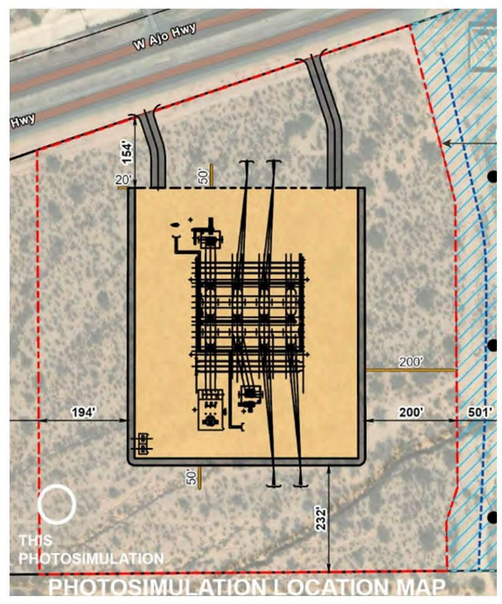







## PHOTO SIMULATION 4



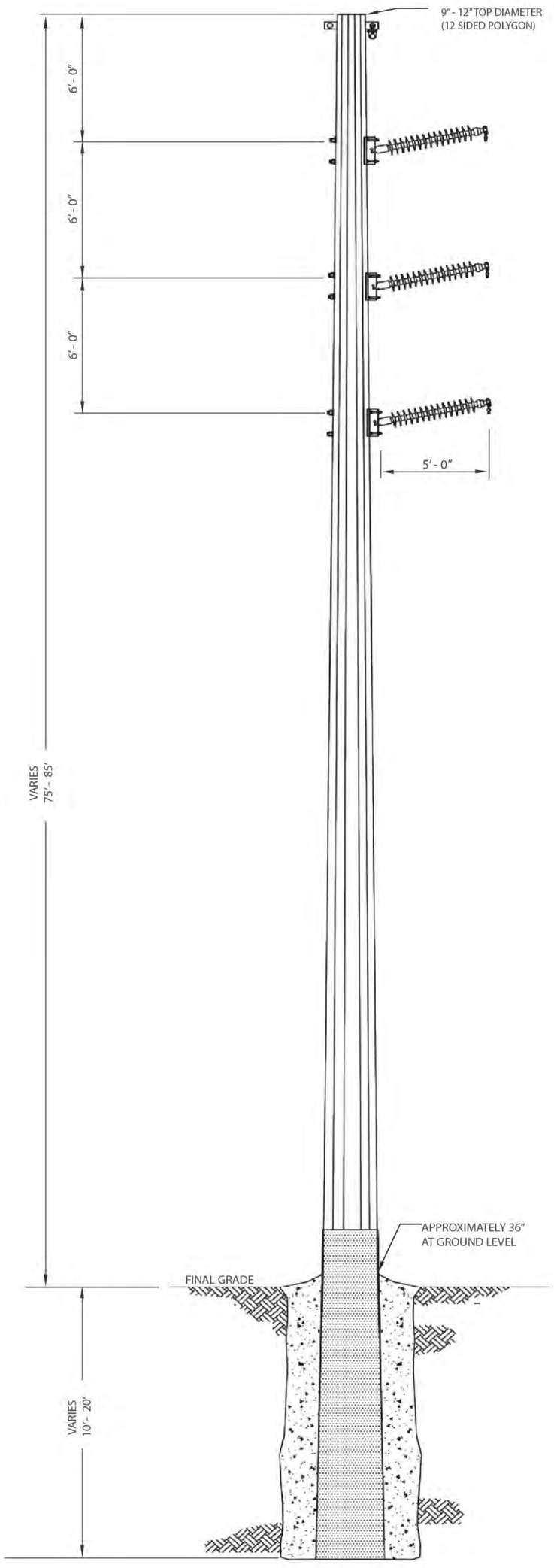




# Southwest Tucson Reliability Project

## Transmission Line Characteristics

## Single or Double-Circuit 138 Kilovolt

| | |
|---|---|
| **Structure Type** | Tubular, weathering steel monopoles |
| **Typical Structure Height** | 75-85 feet |
| **Typical Span Length** | 600-1,000 feet |
| **Typical Right-of-Way Width** | Up to 100 feet |

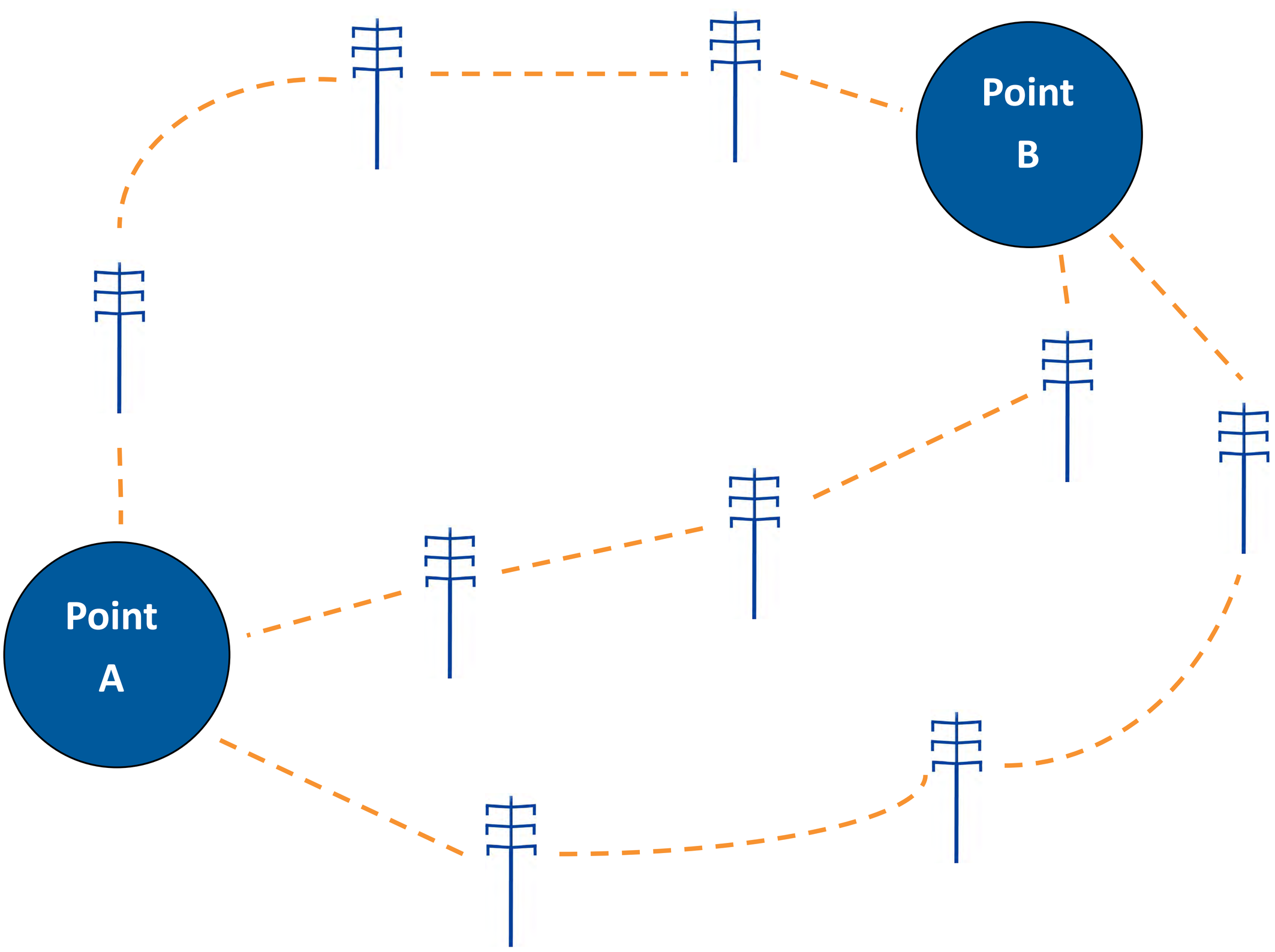




# Southwest Tucson Reliability Project

## 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.

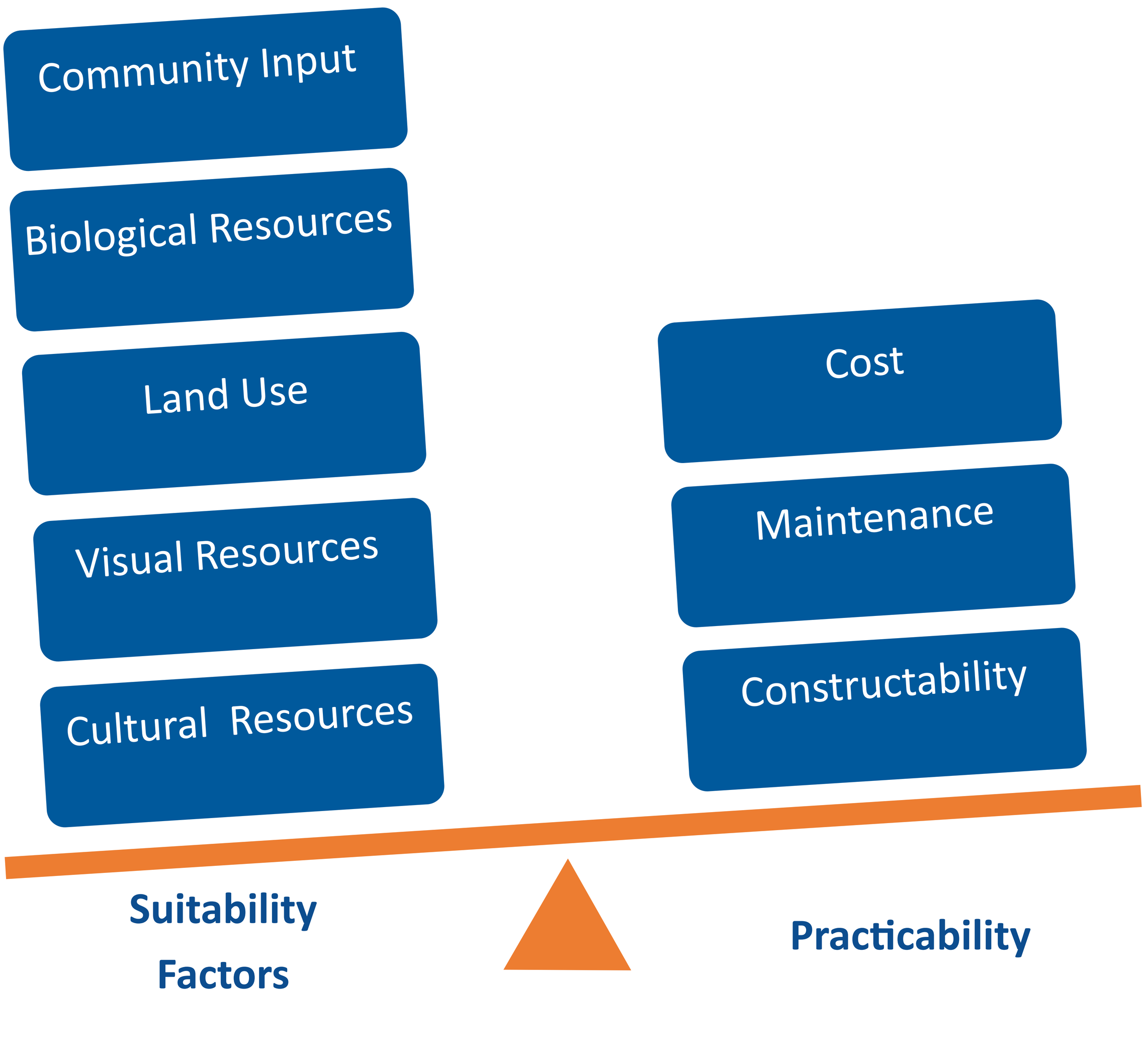



A component of siting is permitting. Under Arizona law (A.R.S. § 40-360 et seq.), certain transmission line configurations require a Certificate of Environmental Compatibility (CEC) before construction and operation along an approved route.

# Southwest Tucson Reliability Project

## Project Route Development and Evaluation

Tucson Electric Power 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 that satisfies the need for the project.



# Southwest Tucson Reliability Project

## Siting Process Flowchart

**Phase 1:**
Pre-Analysis

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

**Phase 2:**
Data Inventory

- Conduct Research & Collect Data

**Phase 3:**
Suitability Assessment

- Develop Suitability Models
- Conduct Suitability Assessment
- Field Review
- Engage with Public & Stakeholders
- Refine Segments

★ WE ARE HERE

**Phase 4:**
Compatibility Analysis

- Conduct Compatibility Analysis
- Develop Route Alternatives
- Field Review

**Phase 5:**
Concept Evaluation

- Engage with Public & Stakeholders
- Identify Preferred Route
- Submit CEC Application
- Public Notification and Hearing

# Southwest Tucson Reliability Project

## Siting Criteria

Tucson Electric Power (TEP) will be applying for a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission. Several criteria are considered under the Arizona Revised Statutes when making the decision to issue a CEC. TEP also considers additional factors identified through public engagement and feedback to evaluate route segments, and when selecting a preferred route.

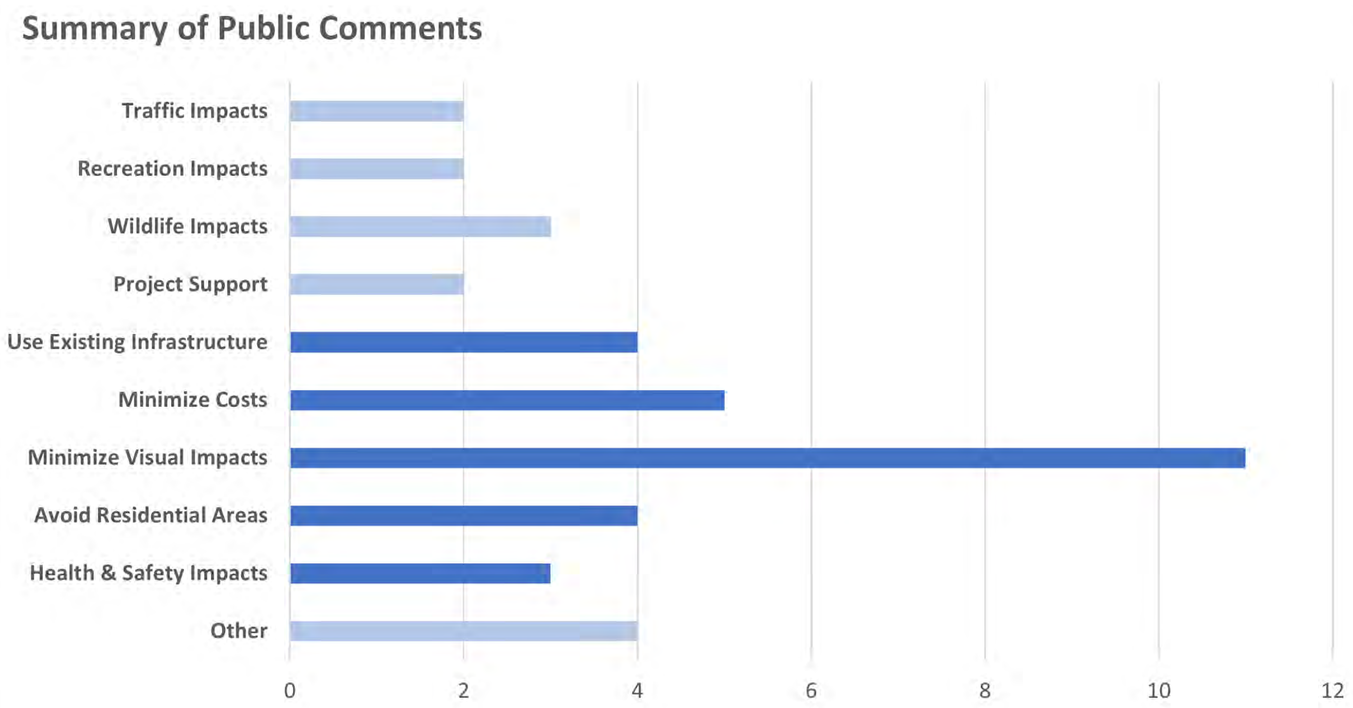
- Public input
- Wildlife & plants
- Existing & planned land use
- Overall environment
- Noise emission levels & interference with communication signals
- Scenic areas, historic & cultural sites
- Existing or potential recreation uses
- Engineering & construction feasibility
- Project costs & potential impact on customer rates

In your opinion, which criteria are most important in developing a route for the Project? Let us know what you think and if there are any other criteria we should consider.

# Southwest Tucson Reliability Project

# Your Input Matters!

## What we heard...





Irvington @ Avenida De Raspa

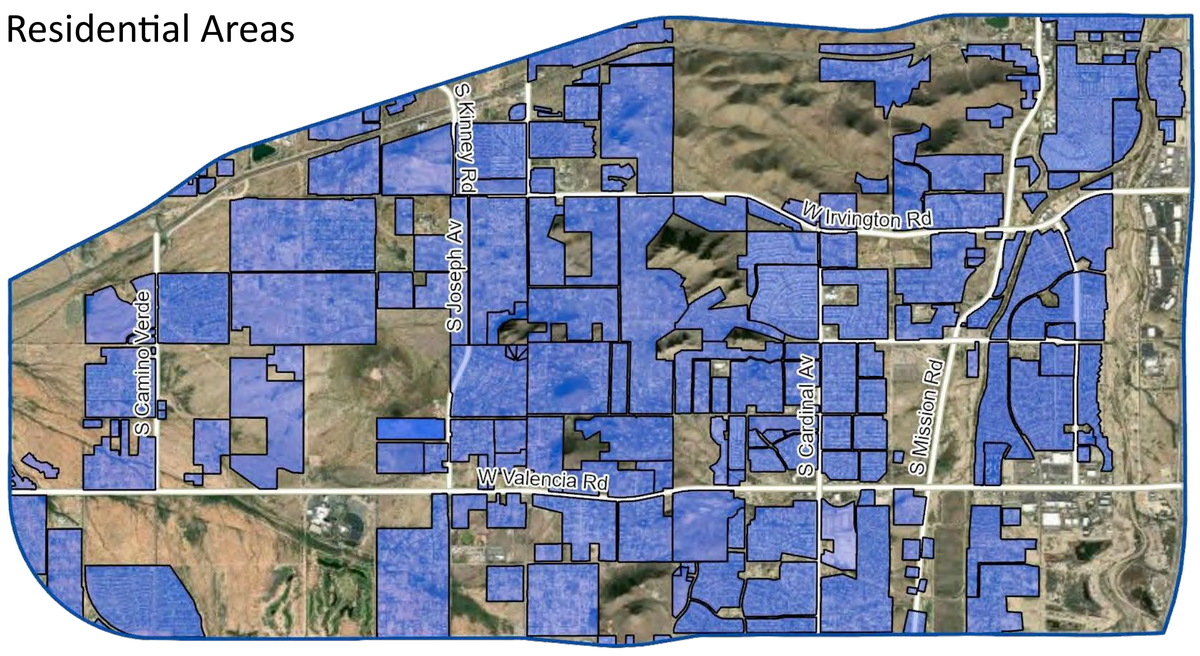
## What we did to address residential visual impacts...

- Identified Existing & Planned Residential Areas
- Identified Peaks & Ridges Visible from Residential Areas


Valencia @ Saguaro Haven


Cardinal @ Alvaro

Residential Areas

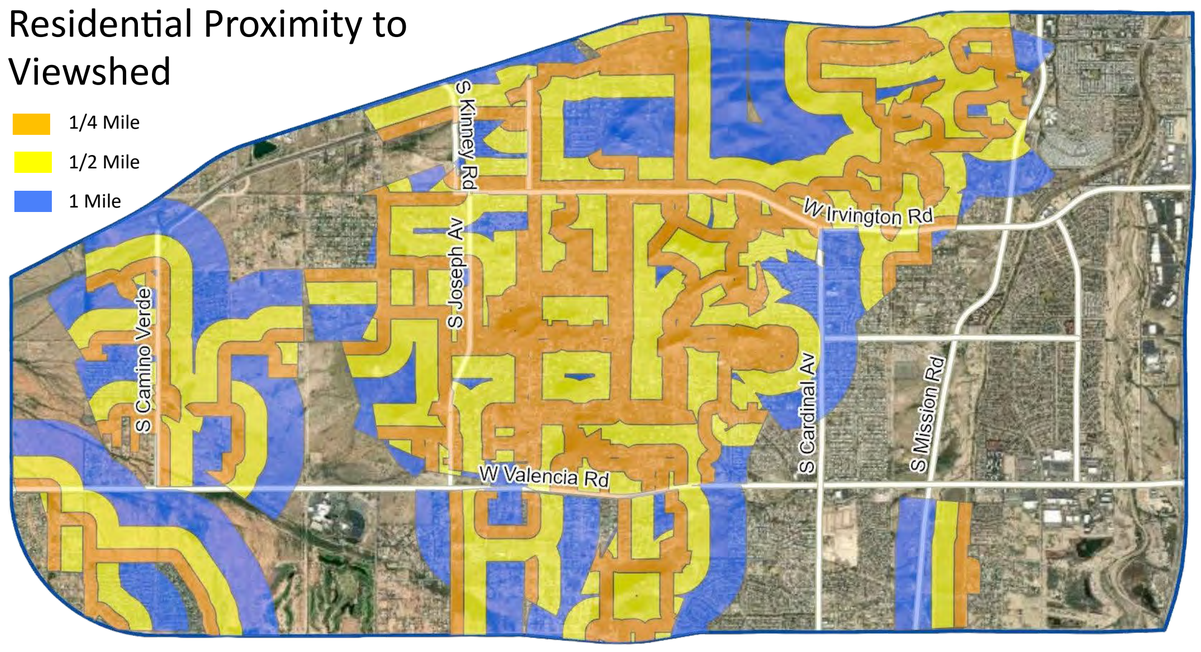



- Created a Residential Viewshed Layer
- Ranked/Scored the Residential Viewshed Areas Against Areas Outside of the Viewshed Areas


Valencia @ Saguaro Haven


Irvington @ Mission

Residential Proximity to Viewshed

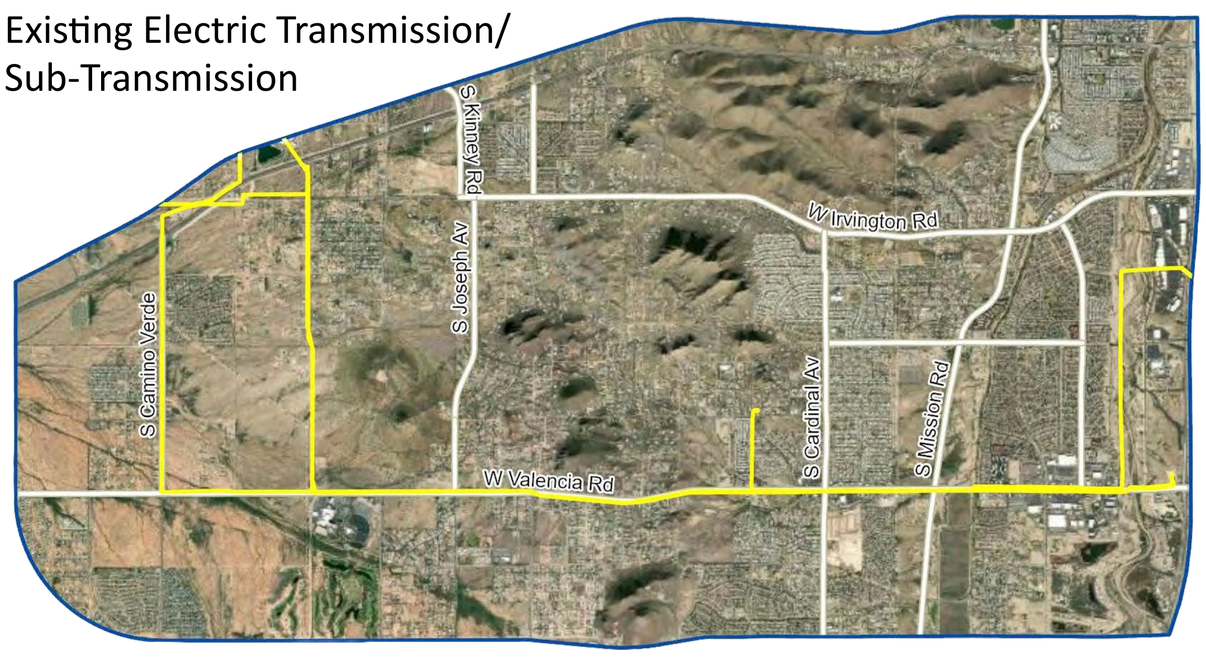



- Identified Existing Transmission/ Sub-Transmission Infrastructure that Could Potentially be Used


Valencia @ Oak Tree


Valencia @ Camino de Este

Existing Electric Transmission/ Sub-Transmission



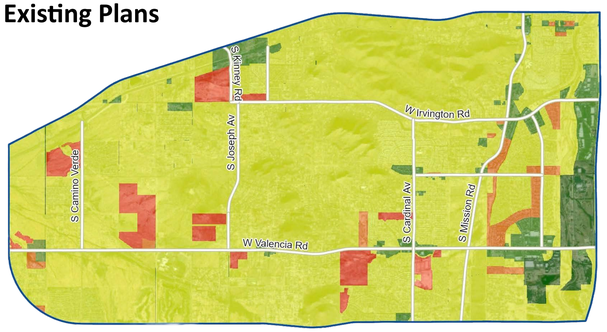
# Southwest Tucson Reliability Project

## Suitability Criteria Models

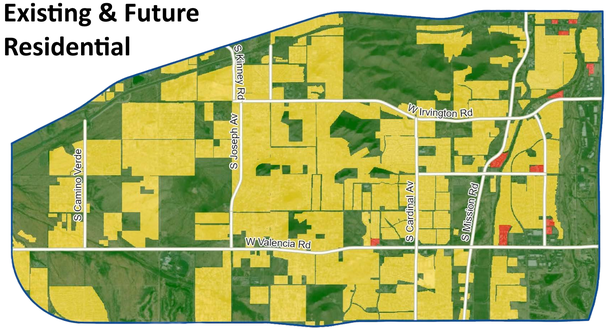
**Legend**

- StudyArea
- Low Compatibility
- High Compatibility

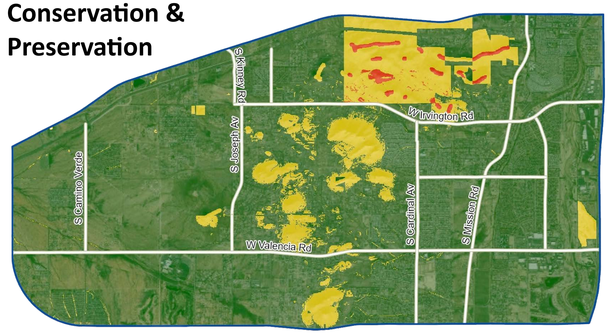
**Existing Plans**



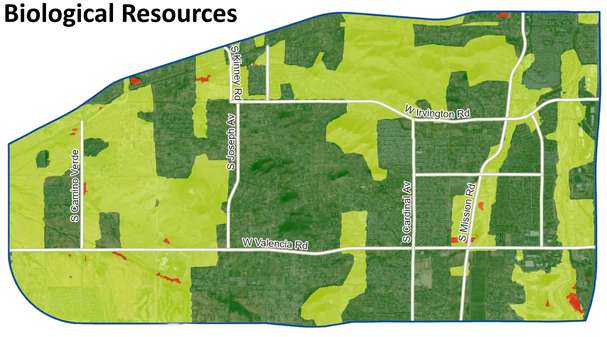

**Existing & Future Residential**



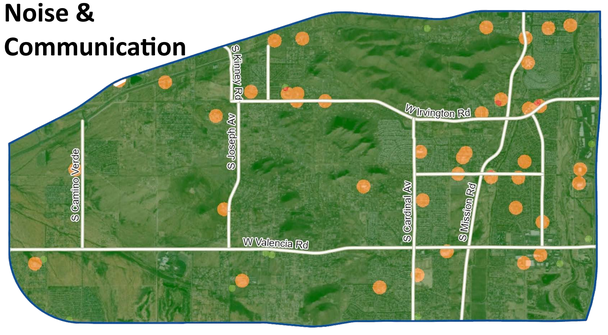

**Conservation & Preservation**




**Biological Resources**

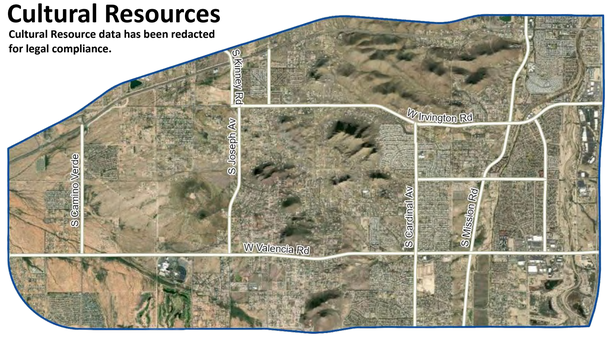



**Noise & Communication**

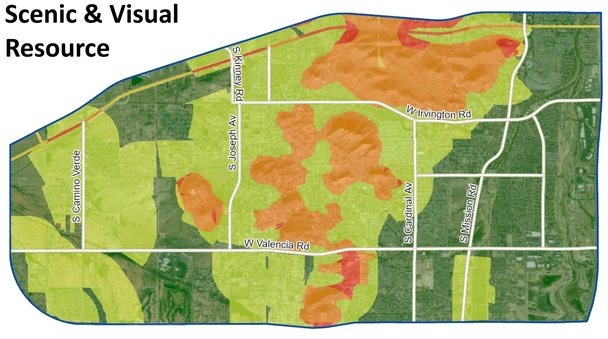



**Cultural Resources**

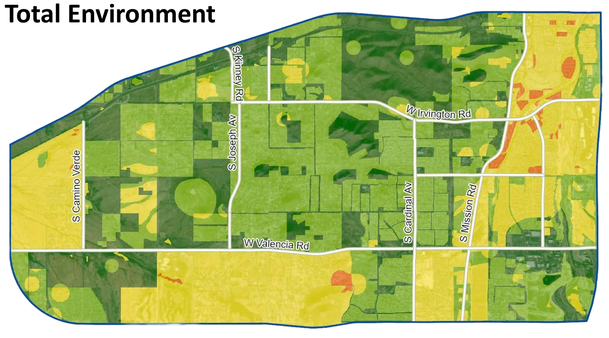
Cultural Resource data has been redacted for legal compliance.



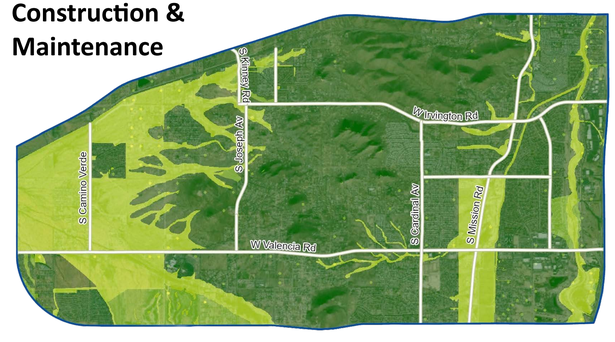

**Scenic & Visual Resource**




**Total Environment**

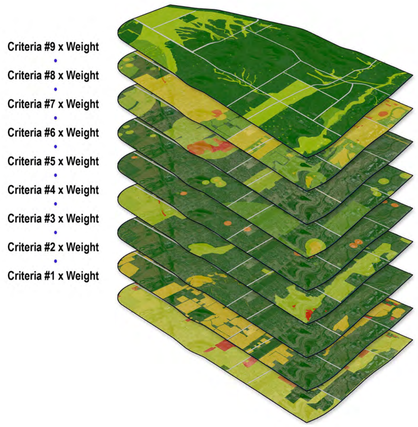



**Construction & Maintenance**



# Southwest Tucson Reliability Project

## Balanced Composite Suitability Model

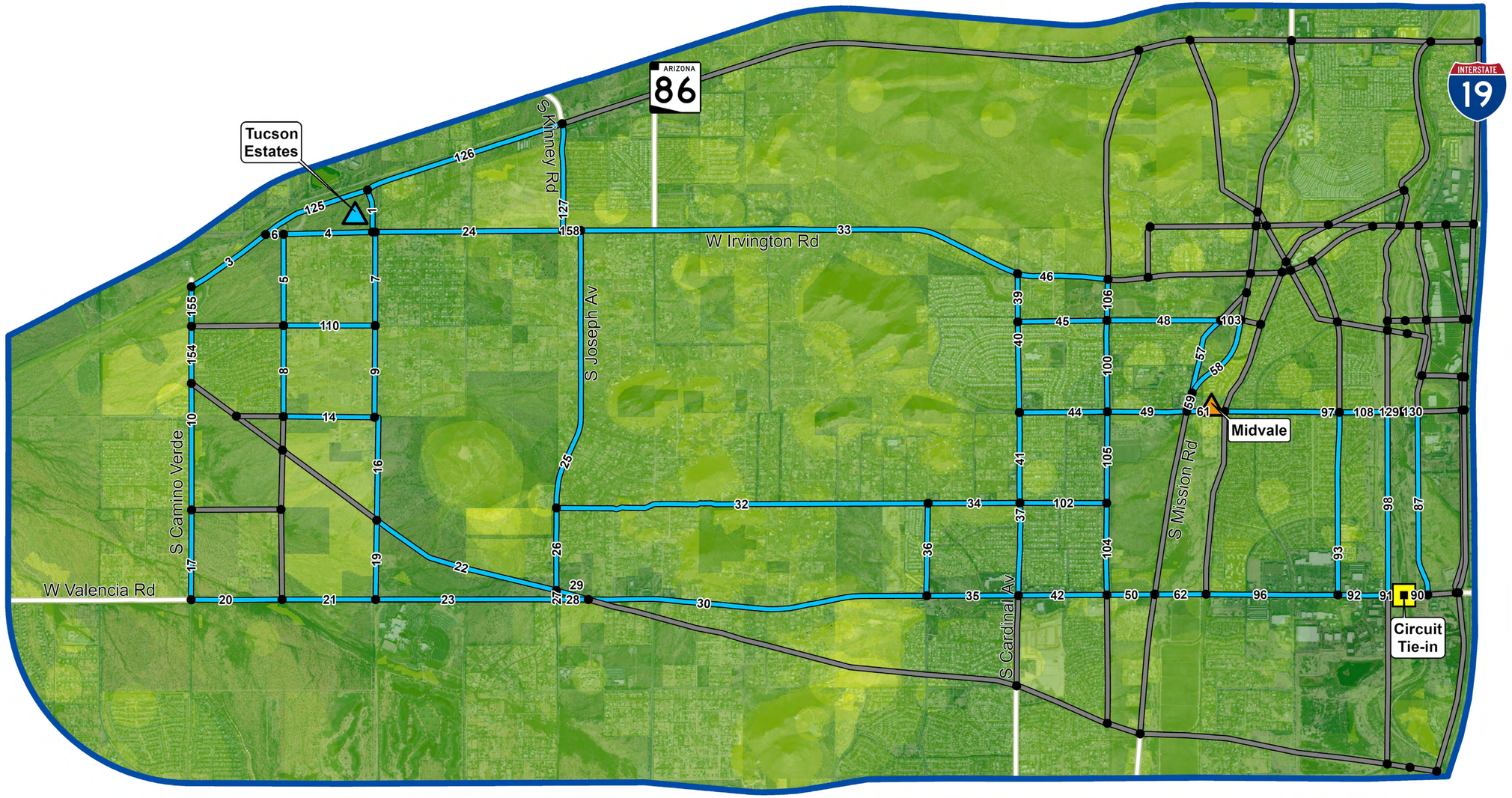



### Legend

- Circuit-Tie In
- Existing 138kV Sub
- Planned 138kV Sub
- Refined Segments
- Removed Segments
- StudyArea

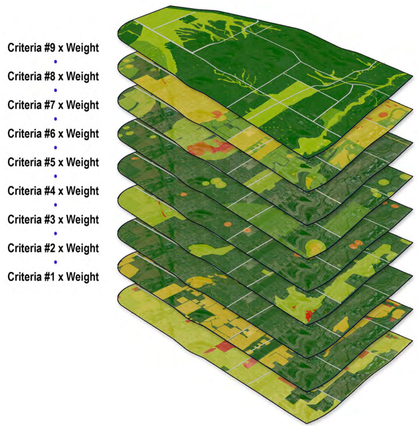
Value
- Low Compatibility
- High Compatibility

N 0 ¼ ½ 1 Miles



# Southwest Tucson Reliability Project

## Environmental Composite Suitability Model




### Legend

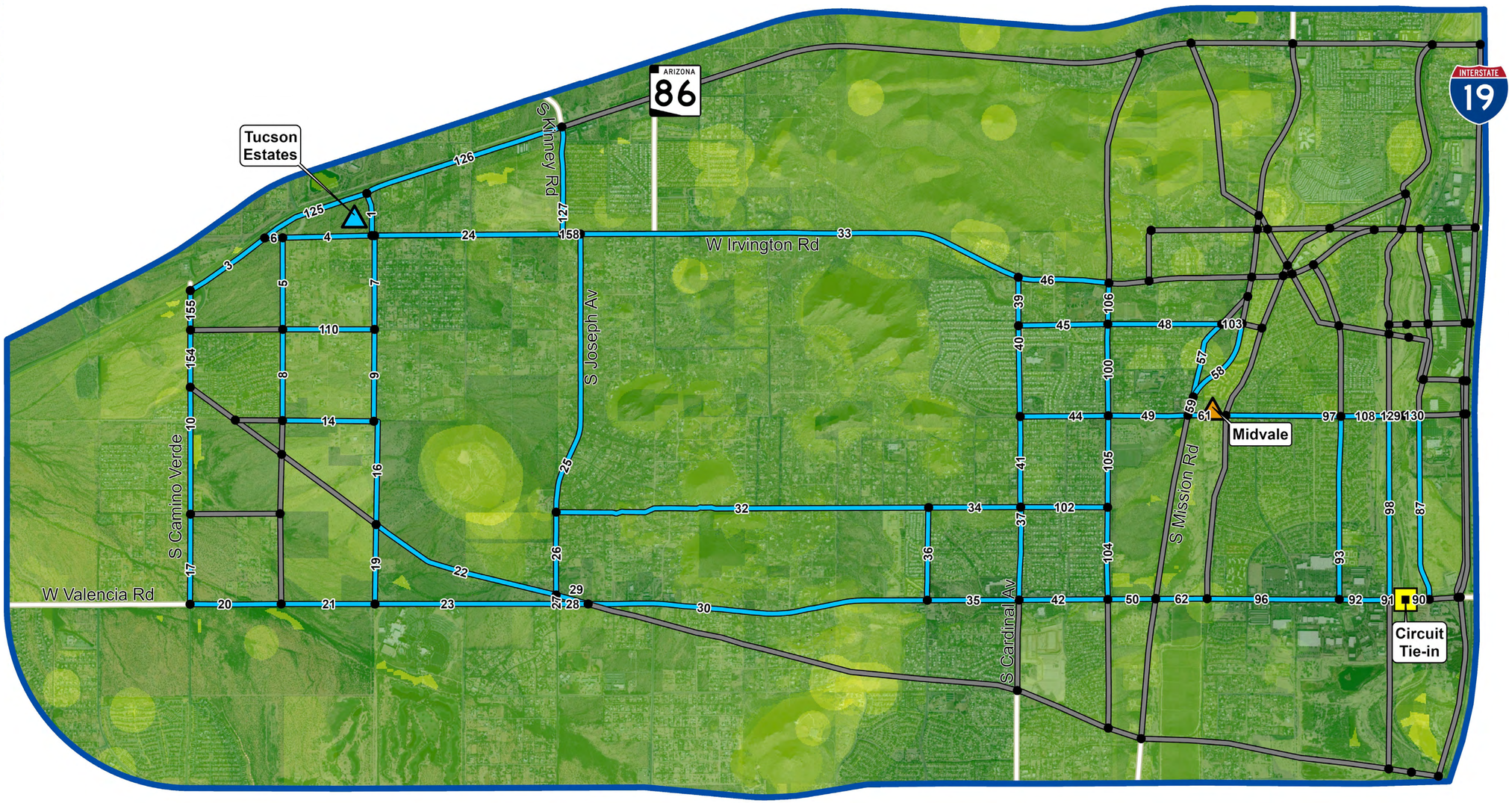
- Circuit-Tie In
- Existing 138kV Sub
- Planned 138kV Sub
- Refined Segments
- Removed Segments
- StudyArea

Value

- Low Compatibility
- High Compatibility

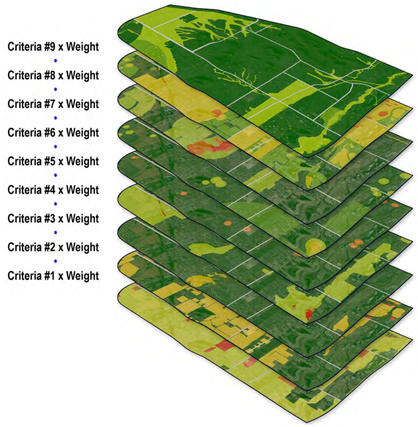
N

0 ¼ ½ 1 Miles



# Southwest Tucson Reliability Project

## Construction & Maintenance Composite Suitability Model



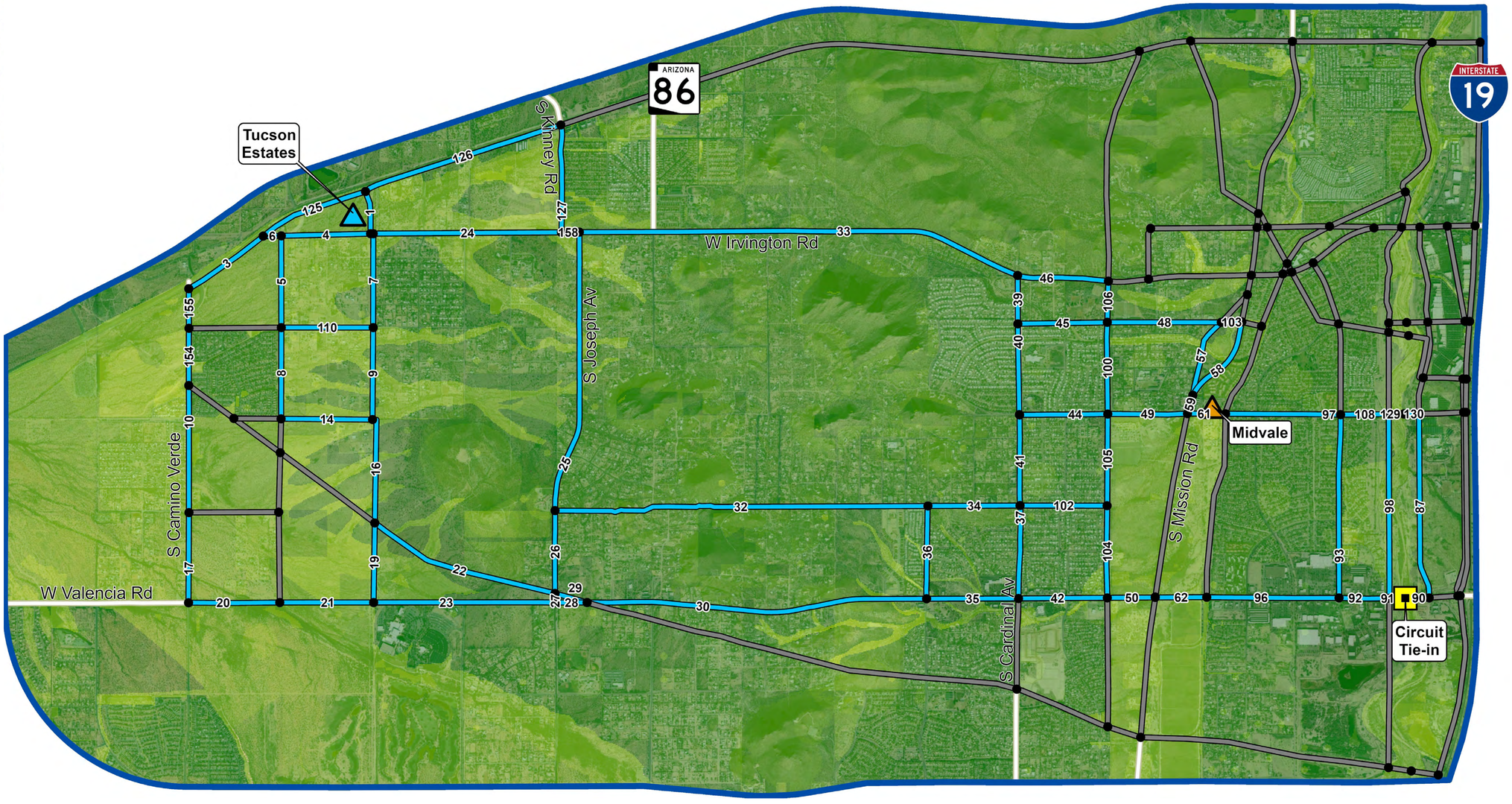

### Legend

- Circuit-Tie In
- Existing 138kV Sub
- Planned 138kV Sub
- Refined Segments
- Removed Segments
- StudyArea

Value

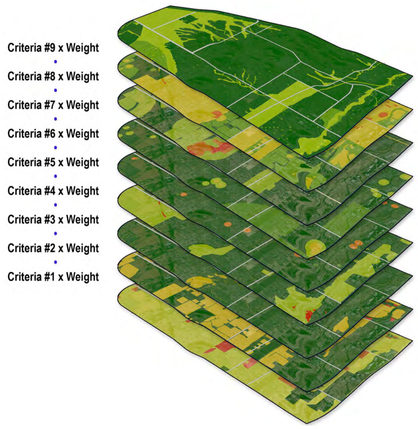
- Low Compatibility
- High Compatibility

N 0 ¼ ½ 1 Miles



# Southwest Tucson Reliability Project

## Residential and Visual Resource Composite Suitability Model

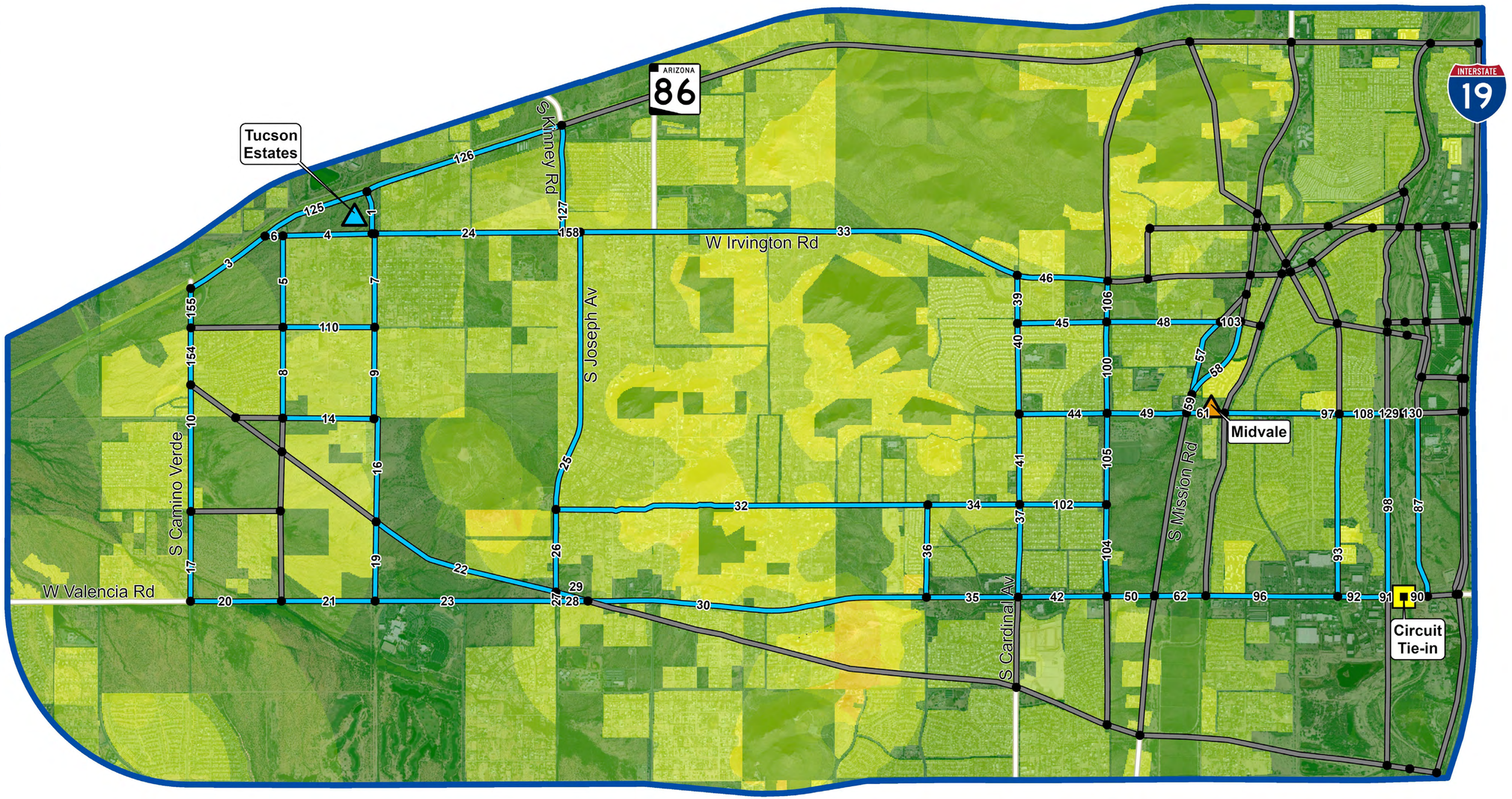



### Legend

- Circuit-Tie In
- Existing 138kV Sub
- Planned 138kV Sub
- Refined Segments
- Removed Segments
- StudyArea

Value
- Low Compatibility
- High Compatibility

N 0 ¼ ½ 1 Miles



# Southwest Tucson Reliability Project

- Refined Segments
- Segments Removed from Consideration
- Study Area
- Circuit Tie-in
- Existing 138 kV
- Planned 138 kV

N

0 ¼ ½ 1 Miles

Tucson Estates

Midvale

Circuit Tie-in

ARIZONA 86

INTERSTATE 19

# Southwest Tucson Reliability Project

# PLEASE COMMENT HERE

- Fill out an online comment form at:
  tep.com/southwest-tucson-reliability-project

- Mail a comment form to this address:
  TEP SW Tucson Reliability Project
  P.O. Box 711
  Mail Stop CB200
  Tucson, AZ 85701-0711

- Email comments to swtucson@tep.com

- Call 1-520-770-7522 and leave a voicemail

Southwest Tucson Reliability Project

# Interactive Map Station

You Are Here!

## See where you live in relation to the project