

# Tucson Electric Power Patriot 138 kV Substation

Special Exception Land Use Permit

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DESIGN REVIEW BOARD– MAY 27, 2021

# Introductions

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Brian Pugh, Land Planner, Land Resources

Chris Ortiz y Pino, Land Planner, Land Resources

Renee Darling, Supervisor Land Resources, Transmission Line Siting

Eric Barrett, ARC Studios

# Agenda: Patriot Substation

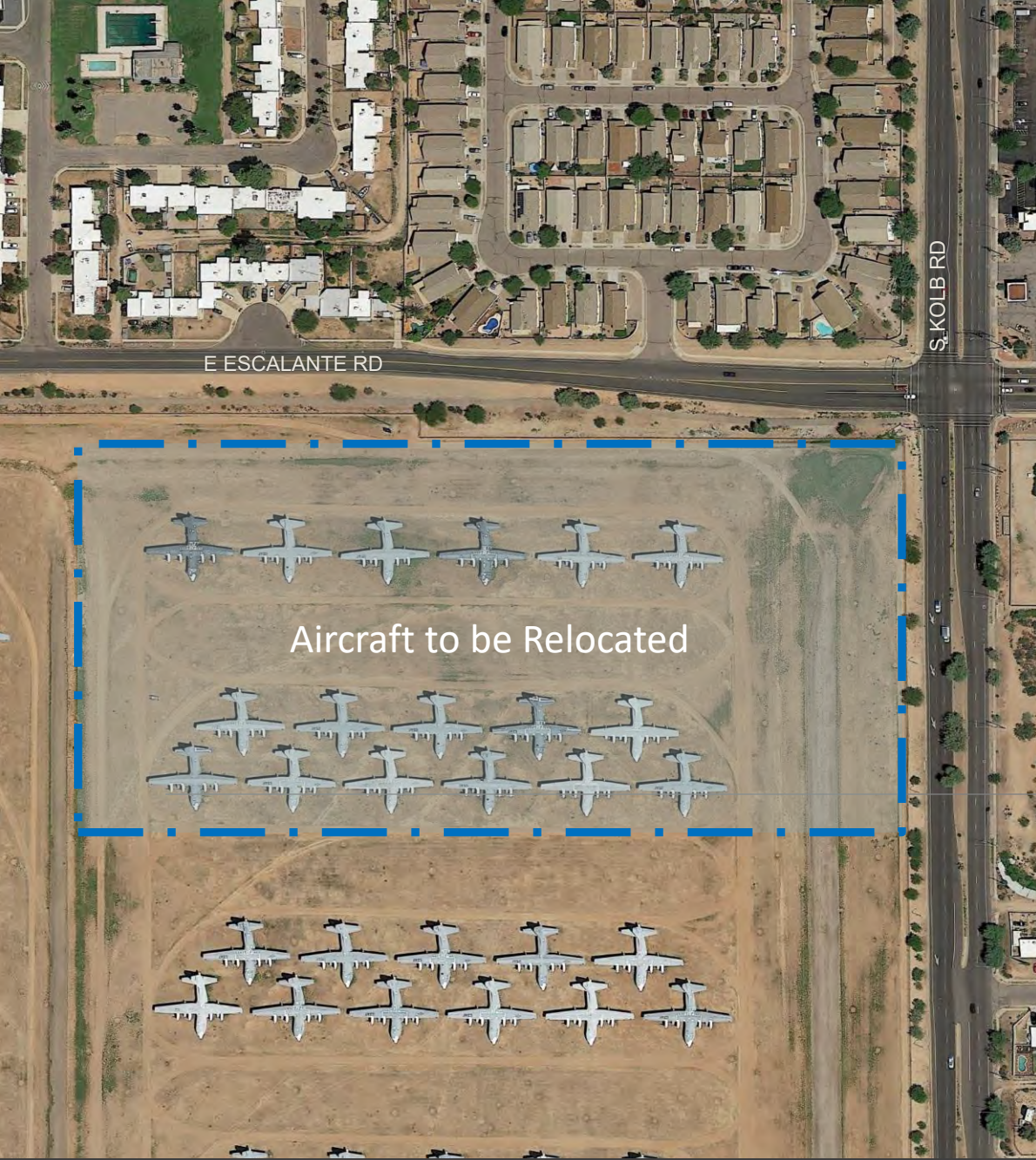
## Design Review Board

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- Brief background of larger project
- Patriot Substation Information
- Security Wall Design
- Landscape Design



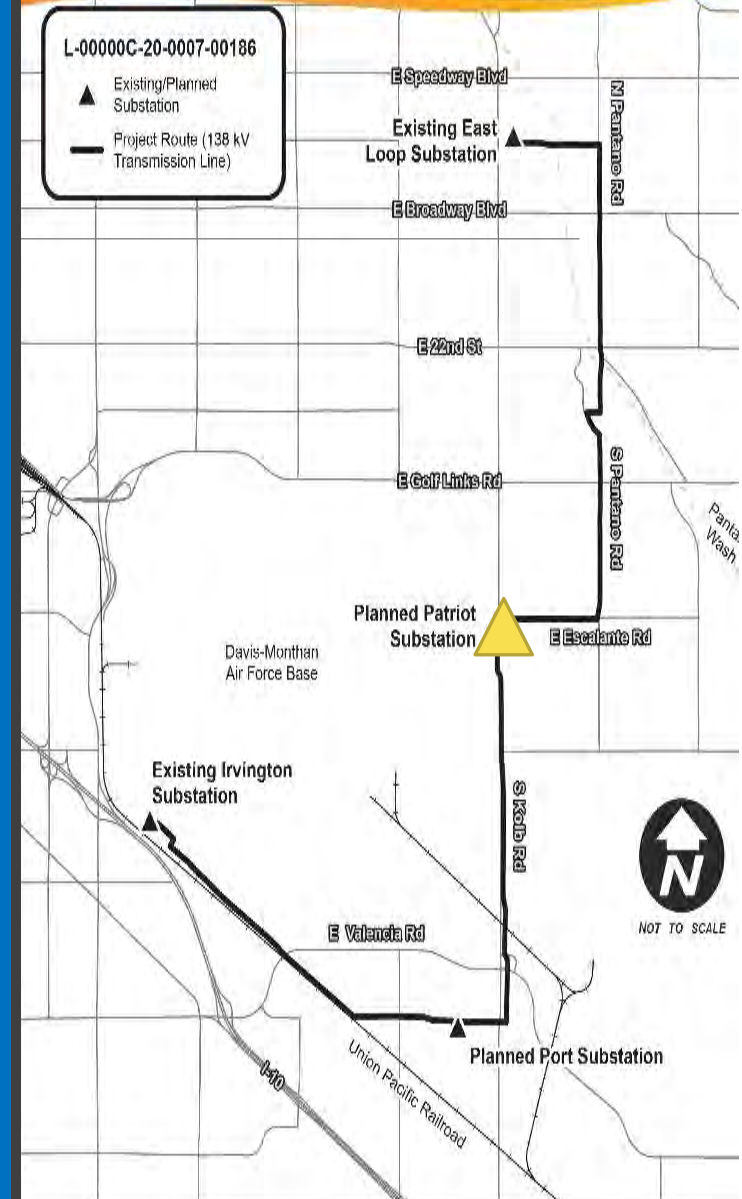
# Location Map



# Aerial Map

# Irvington to East Loop Transmission Line Project

- The approximately 14-mile 138 kilovolt transmission line will connect TEP's Irvington Campus to four substations expanding capacity and connecting the local grid to new generating resources
- The project will support potential future retirement of aging, lower-capacity substations
- Help Davis Monthan AFB meet Department of Defense energy resilience directives
- The Arizona Corporation Commission voted to approve the Certificate Environmental Compatibility in April of 2020
- Construction to begin in the summer of 2021



Irvington to East Loop Flyover at Patriot Substation

# Patriot Substation

## Purpose and Need

- TEP determined in 2017 that a 46 kV transformer and switchgear currently in service at the existing Davis-Monthan Substation are nearing the end of their useful lives.
- The Department of Defense issued a directive in 2017 for all military installations to eliminate vulnerabilities that could result in energy disruptions.
- TEP long term transmission plan to retire aging 46 kV substations and replace them with 138 kV substations.



# Patriot Substation

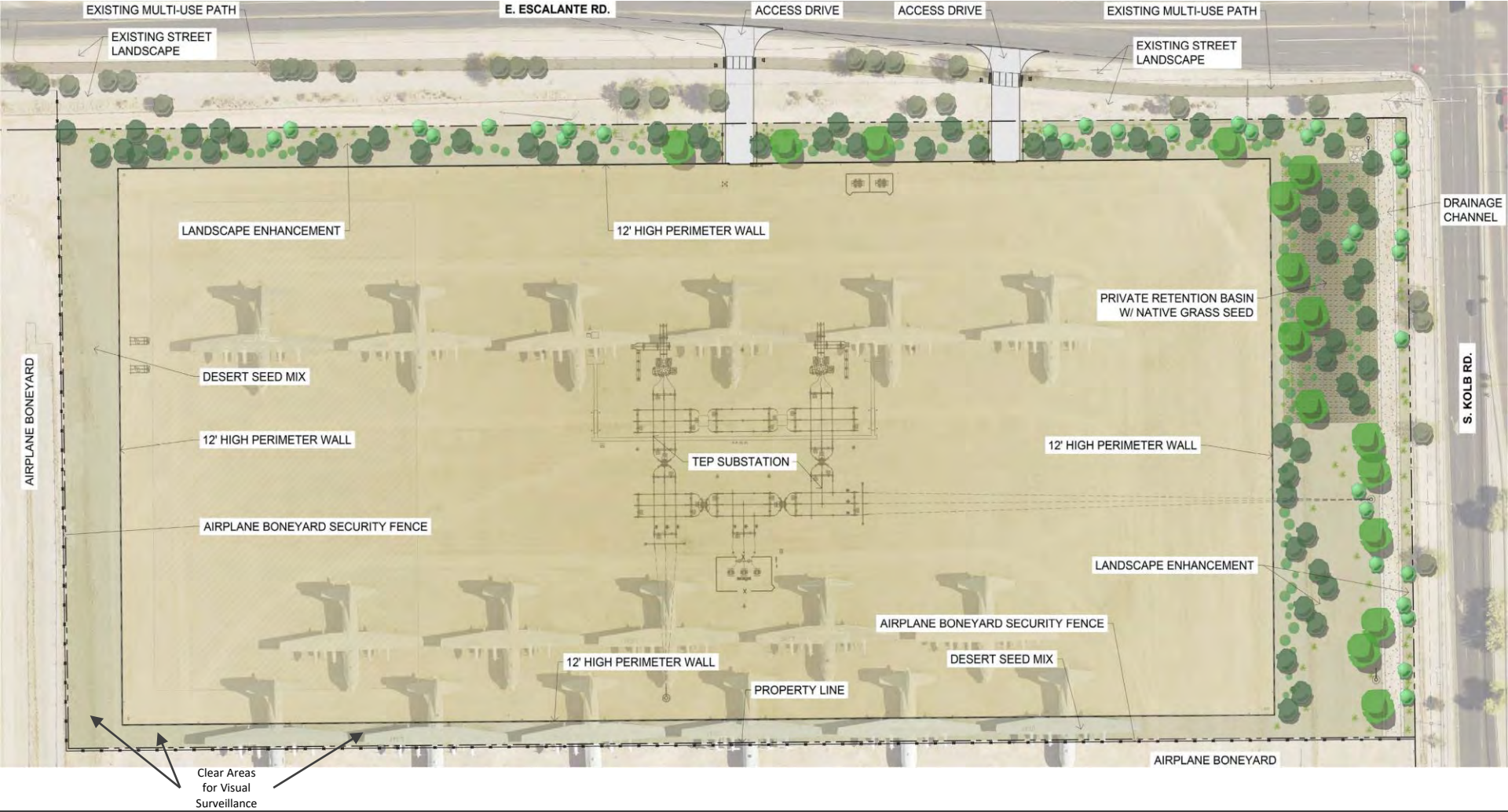
## Proposed Substation

- TEP has proposed building a new substation, switchyard and power lines on a 16-acre site purchased from the City of Tucson and located within Davis-Monthan boundaries.
- The new substation will house two transformers and other equipment designed to change the voltage of electric facilities for distribution and delivery of electric service to area customers.
- The substation will be built on a site currently used for the 309th Aerospace Maintenance and Regeneration Group (AMARG) military aircraft storage.













# Patriot Substation

## Project Benefits

- Supports Davis-Monthan efforts to meet energy resiliency objectives.
- Increases system capacity to help meet current and future energy needs for area customers.
- Provides reliability support to help TEP restore service more quickly to nearby customers affected by power outages.
- Supports economic development around Davis-Monthan.
- Supports TEP's continual efforts to improve reliability by retiring aging 46 kV substations.



# Preliminary Development Plan (PDP)

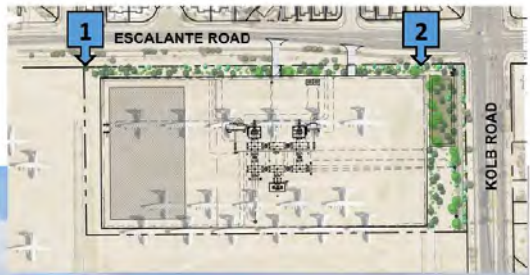
LANDSCAPE CONCEPT LEGEND		Ground Cover Treatment	
	<b>Trees</b> Large native riparian shade tree		<b>Shrubs / Succulents</b> Large native screening plant
	Medium native/ drought tolerant shade		Medium native screening plant
	Small native/ drought tolerant tree		Large native accent
	Existing tree to remain		Medium native accent
			Small native accent
			Hydro-seed - desert restoration
			Hydro-seed - riparian restoration
			TEP equipment area

**PROPOSED TEP PATRIOT SUBSTATION  
PHOTO SIMULATION #1 & #2  
LOOKING SOUTH**

**View #1**



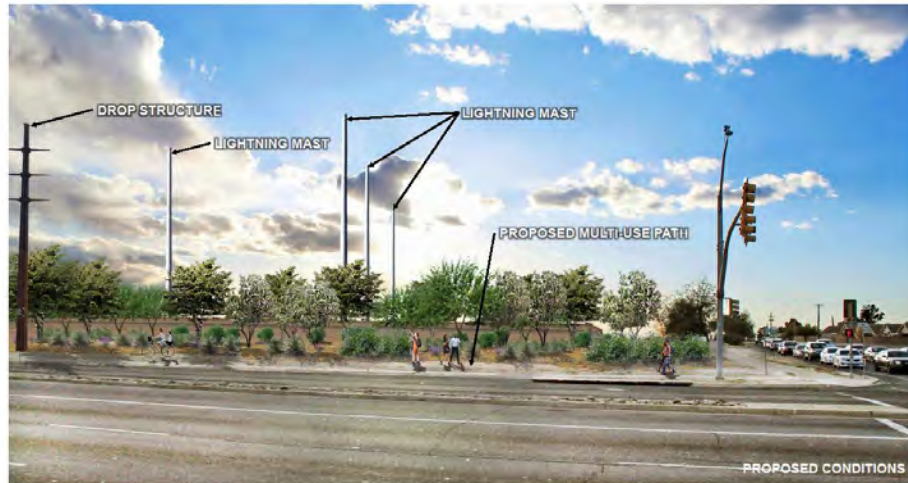
**View #2**



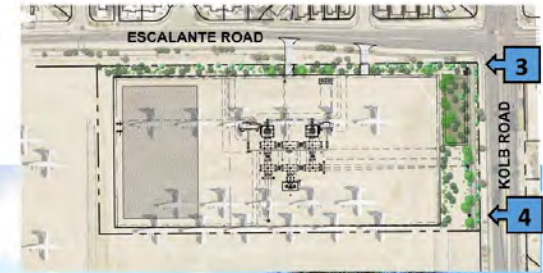
LANDSCAPE TREATMENT IS REPRESENTATIVE ONLY AND REFLECTS THE ANTICIPATED TYPE AND MATURITY OF LANDSCAPE PLANTING IN THIS PROPOSED DEVELOPMENT

**PROPOSED TEP PATRIOT SUBSTATION  
PHOTO SIMULATION #3 & #4  
LOOKING WEST**

**View #3**



**View #4**

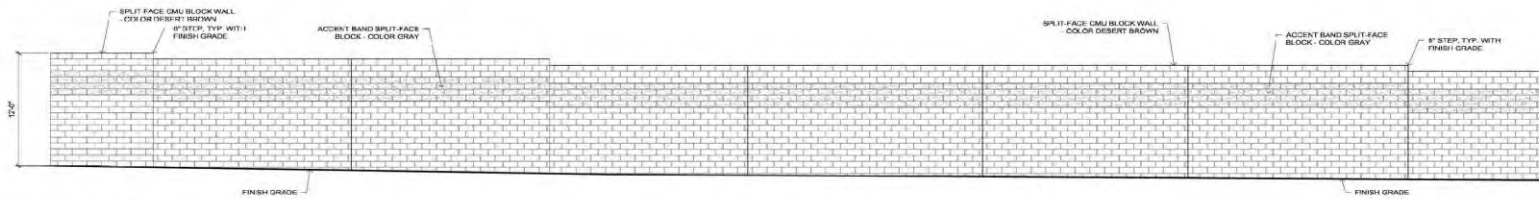


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# Wall Details

## PROPOSED TEP PATRIOT SUBSTATION PERIMETER WALL & GATE

### WALL ELEVATION



Wall elevation shown for graphic purposes only

### GATE



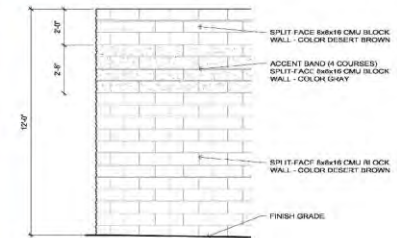
Proposed gate to match example imagery

### WALL TEXTURE



Proposed wall to match example imagery

### WALL SECTION



Wall section shown for graphic purposes only



ARC studios  
520.882.9655



# Landscape Materials

## PROPOSED TEP PATRIOT SUBSTATION PLANT PALETTE

### TREES



*Prosopis glandulosa* (honey mesquite)



*Parkinsonia florida* (blue paloverde)



*Chilopsis linearis* 'bubba'  
(semi-seedless desert willow)



*Gossypium thubertii* (desert cotton)



*Eysenhardtia orthocarpa* (kidneywood)



*Celtis reticulata* (netleaf hackberry)

### SHRUBS



*Vauquelinia californica* (Arizona rosewood)



*Dodonea viscosa* (hop seed)



*Lycium andersonii* (wolfberry)

### CACTI / SUCCULENTS



*Yucca elata* (soap tree yucca)



*Euphorbia antisyphilitica* (candelilla)



*Carnegiea gigantea* (saguaro)

### GROUND COVER



Hydro-seed mix #1 (native desert seed)



Hydro-seed mix #2 (native grass seed)



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# Questions?

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<https://www.tep.com/patriot-substation/>