

Exhibit J-3. Public Meeting Boards

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INFORMATION

PUBLIC OPEN HOUSE MEETING TEP ROSEMONT 138-KV TRANSMISSION LINE PROJECT

Welcome to the public open house for the Tucson Electric Power (TEP) Rosemont 138-kV Transmission Line Project siting study. Thank you for attending and participating in the planning process.

Purpose: The purpose of this open house is to share information, answer questions, and seek your input as we conduct a planning process for the proposed transmission line. The format is designed to encourage one-on-one communications about the project. With this format, there will not be a presentation.

Stations: Stations are set-up around the room to provide details about the project. Representatives from TEP and its consultant, Environmental Planning Group (EPG), are available to answer questions and listen to your comments.

Comment form: Please be sure to complete a comment form either before you leave today, online at tep.com, or by mail by April 15, 2009. Please submit written comments even if you have spoken to a project team representative, as this will help us keep track of the input we receive.

Rosemont Copper Proposal: The planning process for this transmission line is separate from the ongoing federal review of Rosemont Copper Company's proposed operations in the Santa Rita Mountains. For more information on that review, you can visit the Coronado National Forest's project Web page at

<http://www.fs.fed.us/r3/coronado/rosemont/index.shtml>

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Rosemont 138-kV Transmission Line Project

Public Open House Meeting #1
March 24 and 25, 2009

March 2009

Project Overview

- TEP, as a part of its obligation to serve, is proposing to construct and operate a new 138-kV transmission line for the proposed Rosemont Copper operations
- Project area - south of Tucson with lands managed by Arizona State Land Department, Forest Service, some Bureau of Land Management and privately-owned lands and under the planning jurisdictions of City of Tucson, Town of Sahuarita, and Pima County
- Planning process - includes environmental studies and public input conducted to assist in identification and comparison of alternative transmission line routes and environmental impacts
- Project requires review by the Arizona Corporation Commission's (ACC) Power Plant and Transmission Line Siting Committee resulting in a recommendation to and a final determination by the ACC prior to construction

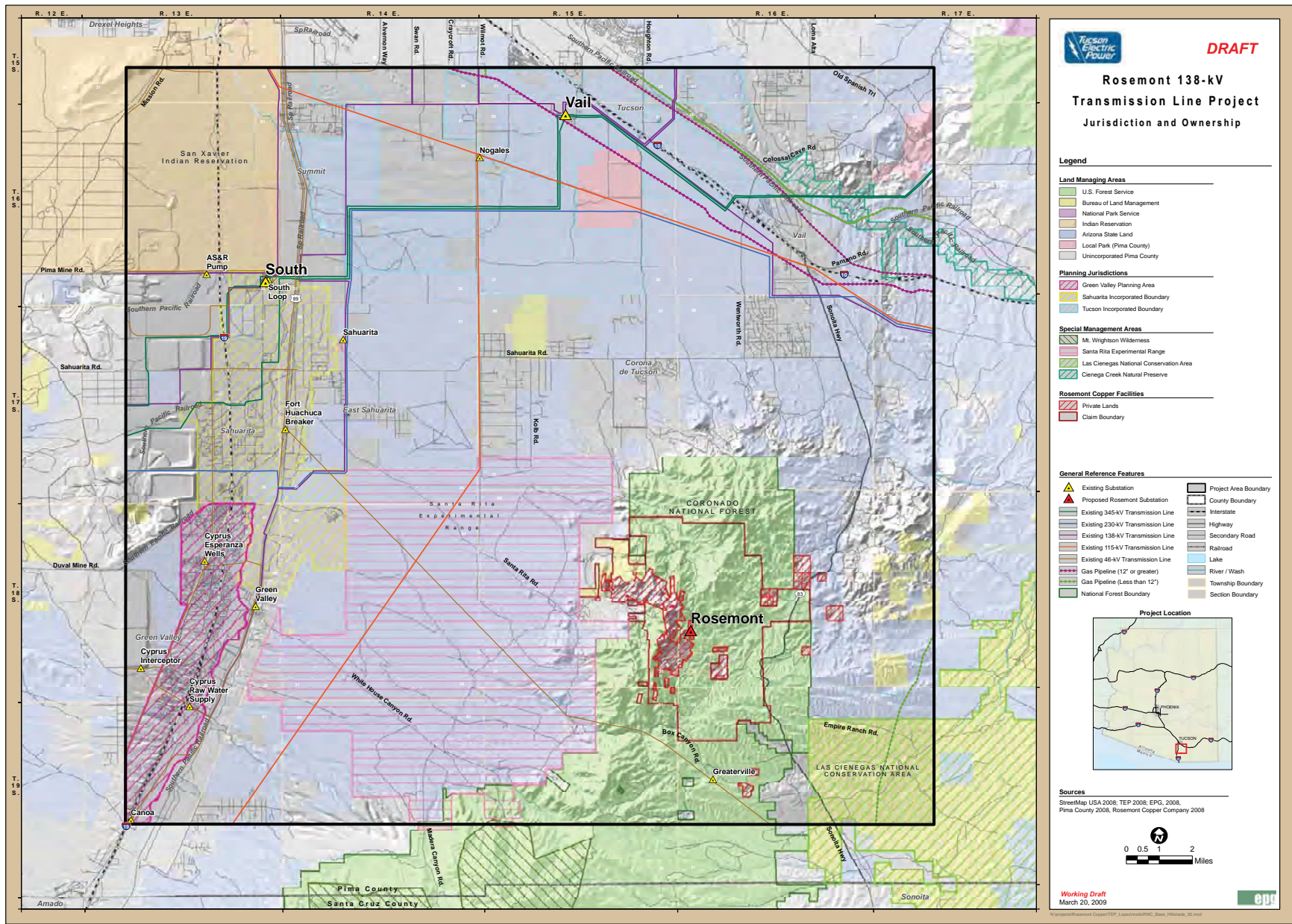


March 2009



ROSEMONT 138-KV TRANSMISSION LINE PROJECT

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Purpose and Need

- Electric utilities are required by the State of Arizona to provide electrical service to customers upon request
- Rosemont Copper Company has requested TEP provide electric power to the Rosemont Copper operations
- The primary purpose and need for the proposed transmission line is to provide adequate and reliable power for the proposed Rosemont Copper operations
- Currently, there are no existing transmission lines and substations to serve this proposed operation



March 2009



ROSEMONT 138-KV TRANSMISSION LINE PROJECT

Project Description

- Up to approximately 30 miles of 138-kV transmission line (line length depends upon final route)
- A 100-foot-wide right-of-way is required
- Approximately 1 acre of land for construction, operation, and maintenance of the proposed Rosemont Substation
- Any upgrades to existing substations are not anticipated to require additional property
- Any potential tap into an existing line may require additional equipment



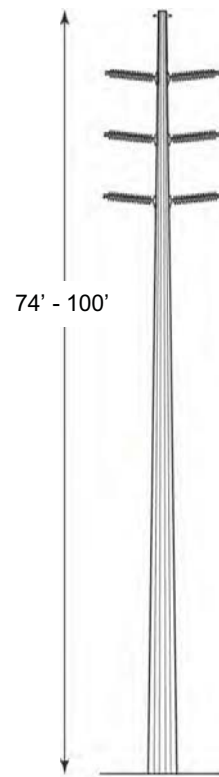
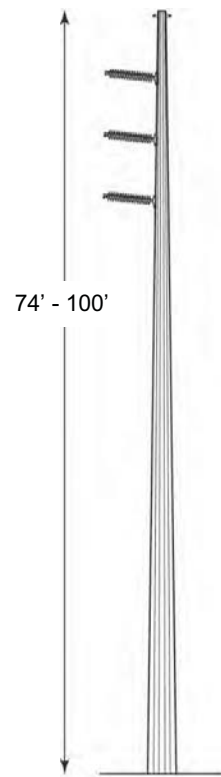
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ROSEMONT 138-KV TRANSMISSION LINE PROJECT

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Proposed Structure Type(s)



March 2009



ROSEMONT 138-KV TRANSMISSION LINE PROJECT

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Vail Substation and South Substation



Vail Substation



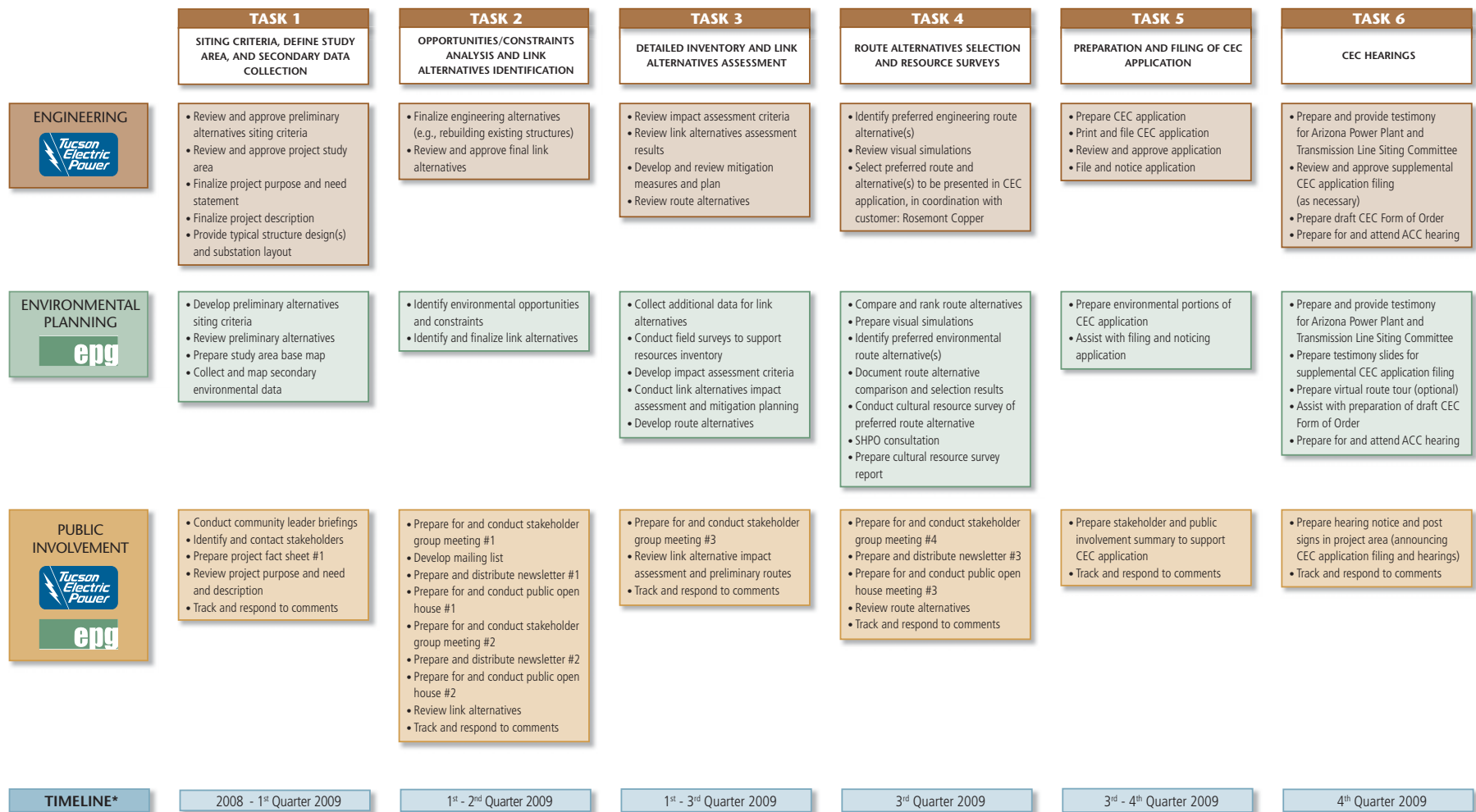
South Substation



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ROSEMONT 138-KV TRANSMISSION LINE PROJECT

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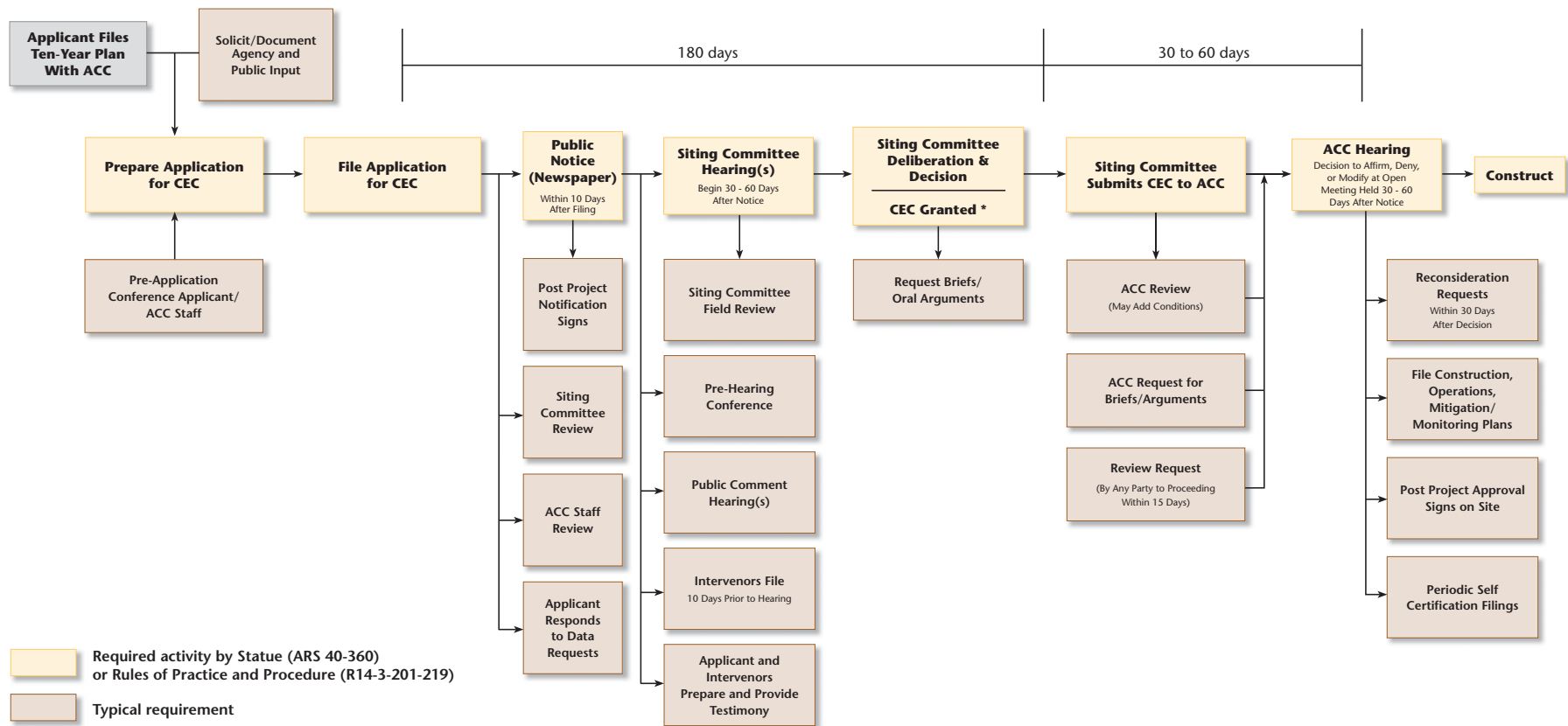


*Timeline is estimated

March 2009

Planning Process and Responsibilities Rosemont 138-kV Transmission Line Project

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* Decision within 180 days after receipt of application (R14-3-213), subject to extension

ACC: Arizona Corporation Commission
 CEC: Certificate of Environmental Compatibility
 Siting Committee: Arizona Power Plant & Transmission Line Siting Committee



February 2009



Arizona Power Plant and Transmission Line Siting Process
 Certificate of Environmental Compatibility Application Process
 Rosemont 138-kV Transmission Line Project

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Environmental Studies Overview

- Environmental resources
 - Land use (existing/future land use and jurisdictional planning guidelines)
 - Visual (scenic quality, sensitive viewers, and scenic management guidelines)
 - Cultural (national register sites, archaeological sites, as well as other eligible sites)
 - Biology (wildlife, vegetation, rare species, and sensitive habitat)



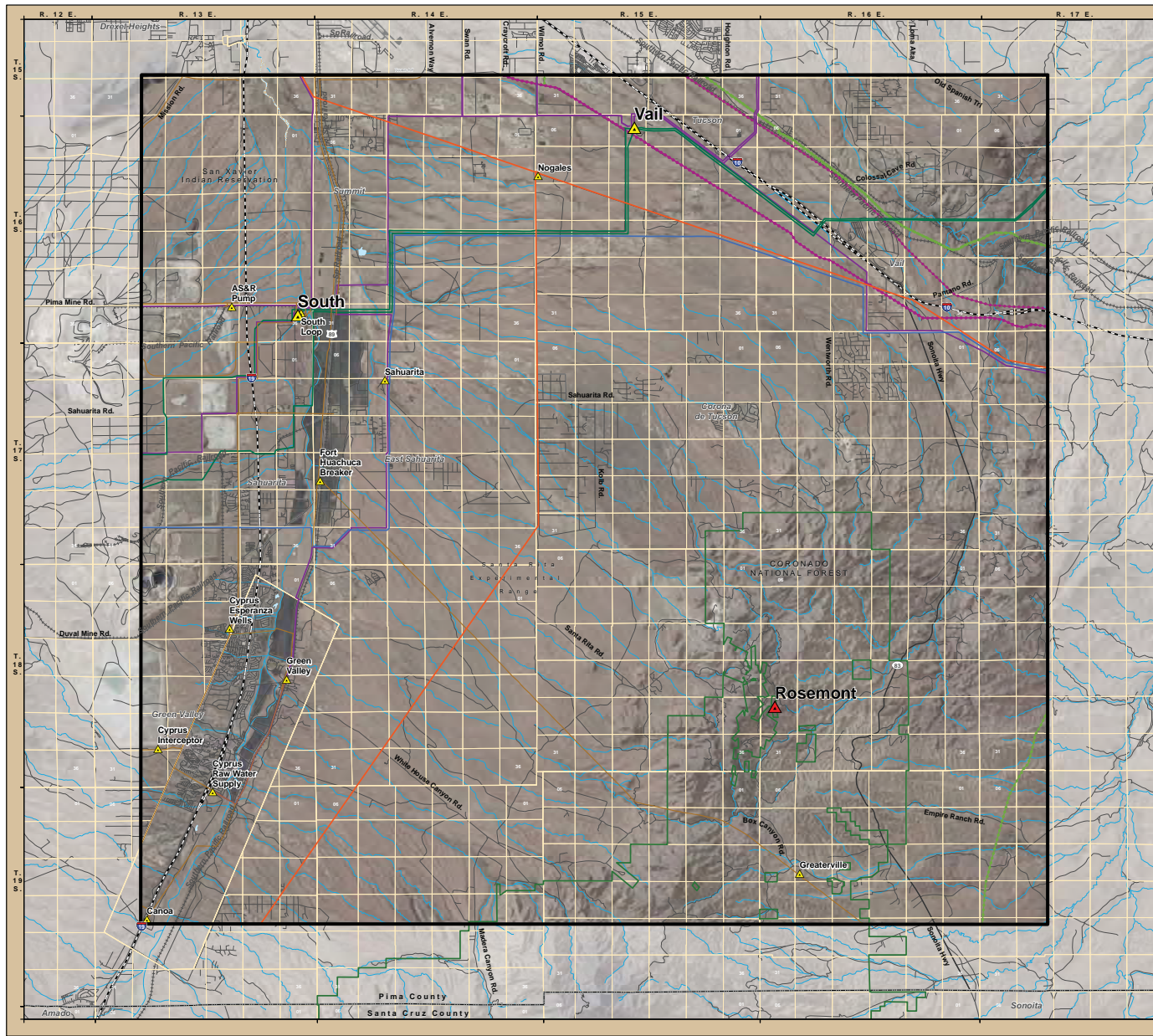
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ROSEMONT 138-KV TRANSMISSION LINE PROJECT

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**Rosemont 138-kV
Transmission Line Project
Aerial Imagery**

General Reference Features

- Existing Substation
- Proposed Rosemont Substation
- Existing 345-kV Transmission Line
- Existing 230-kV Transmission Line
- Existing 138-kV Transmission Line
- Existing 115-kV Transmission Line
- Existing 46-kV Transmission Line
- Pipeline (12" or greater)
- Pipeline (Less than 12")
- National Forest Boundary
- Study Area Boundary
- County Boundary
- Interstate
- Highway
- Secondary Road
- Railroad
- Lake
- River / Wash
- Township Boundary
- Section Boundary

Project Location



Sources

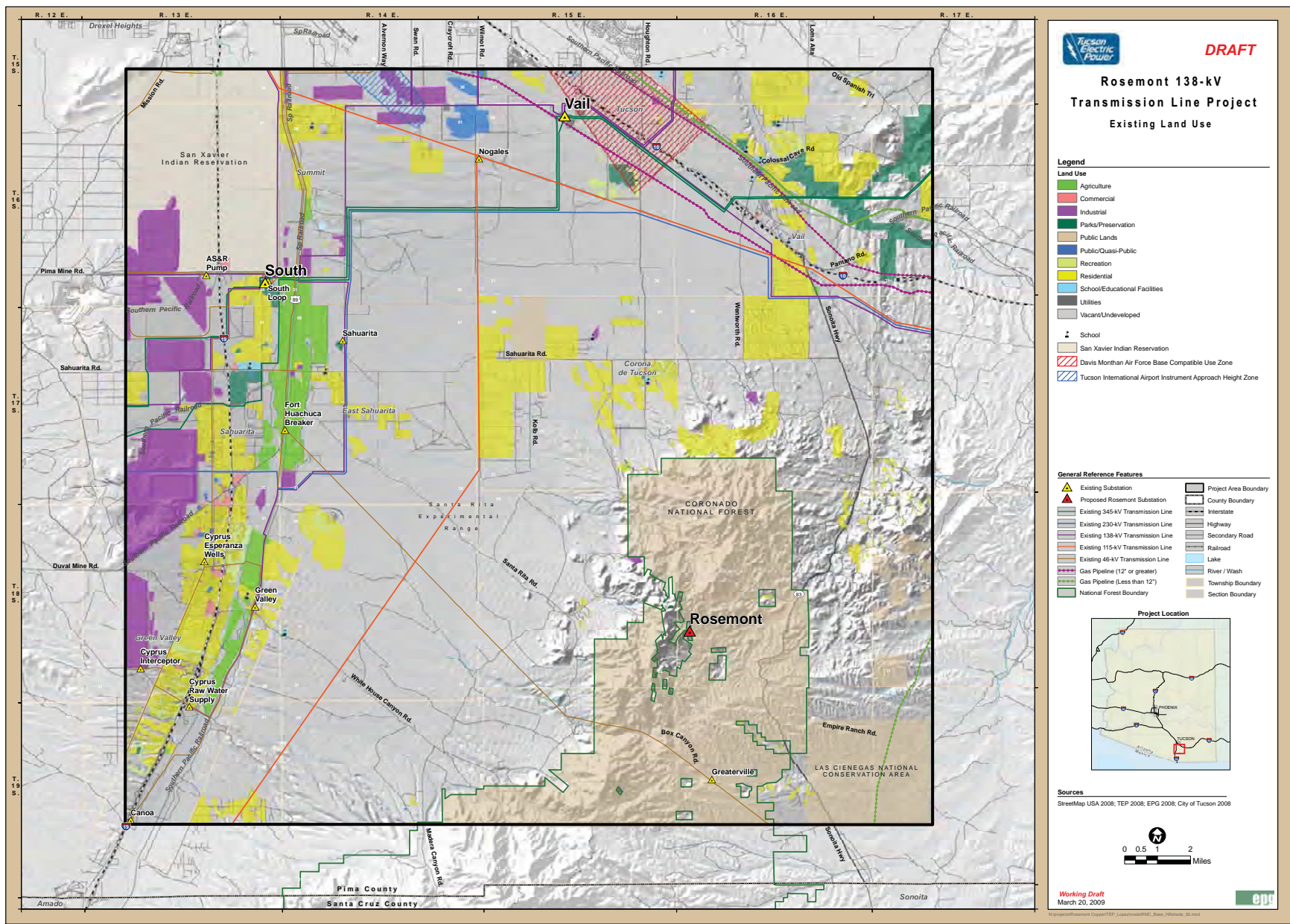
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USA Prime Imagery, 2008



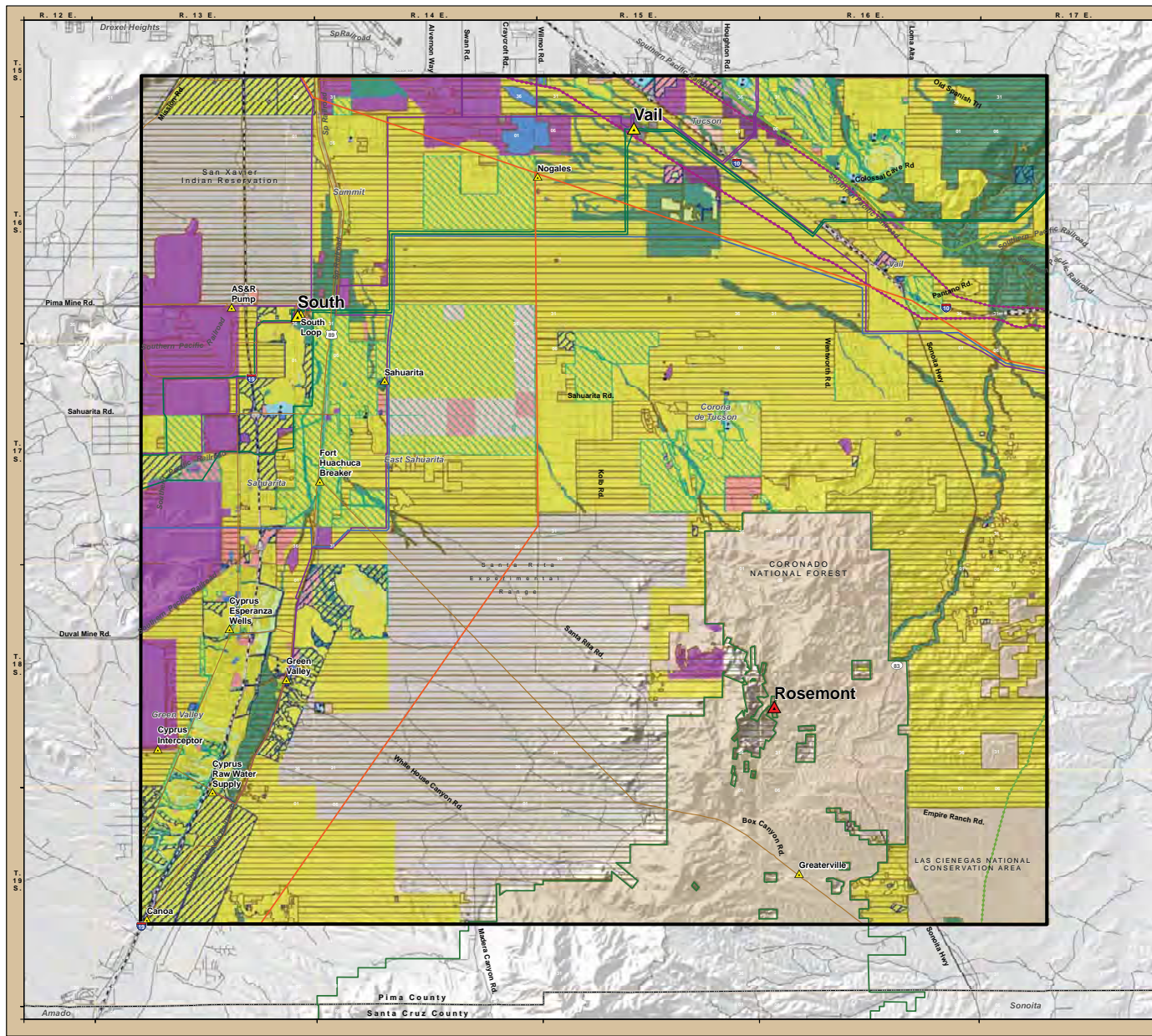
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Rosemont 138-kV Transmission Line Project Future Land Use

Legend



School

Land Use

- Agriculture
- Commercial
- Industrial
- Military
- Mixed Use
- Parks/Preservation
- Public Lands
- Public/Quasi-Public
- Recreation
- Residential
- School/Educational Facilities
- Utilities
- Vacant/Undeveloped

Status

- Plat Approved
- Zoning Approved
- Conceptual/General/Comprehensive Plan

Note: Non-status land uses are existing

General Reference Features

- Existing Substation
- Proposed Rosemont Substation
- Existing 345-kV Transmission Line
- Existing 230-kV Transmission Line
- Existing 138-kV Transmission Line
- Existing 115-kV Transmission Line
- Existing 46-kV Transmission Line
- Gas Pipeline (12" or greater)
- Gas Pipeline (Less than 12")
- National Forest Boundary
- Project Area Boundary
- County Boundary
- Interstate
- Highway
- Secondary Road
- Railroad
- Lake
- River / Wash
- Township Boundary
- Section Boundary



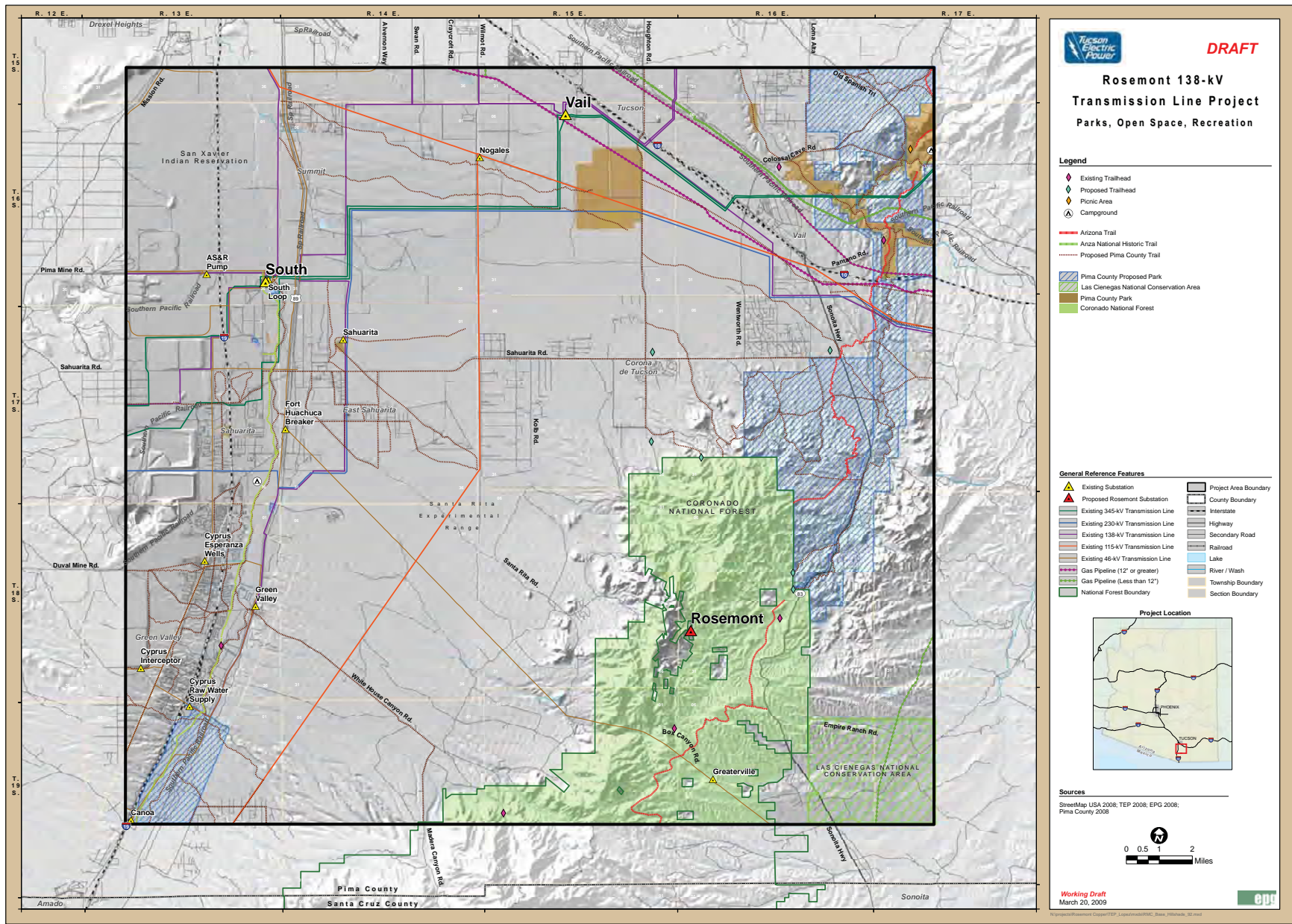
Sources
 StreetMap USA 2008; TEP 2008; Sahuarita, 2008;
 Houghton Area Master Plan, 2005;
 EPG, 2008; Pima County, 2008; City of Tucson 2008.



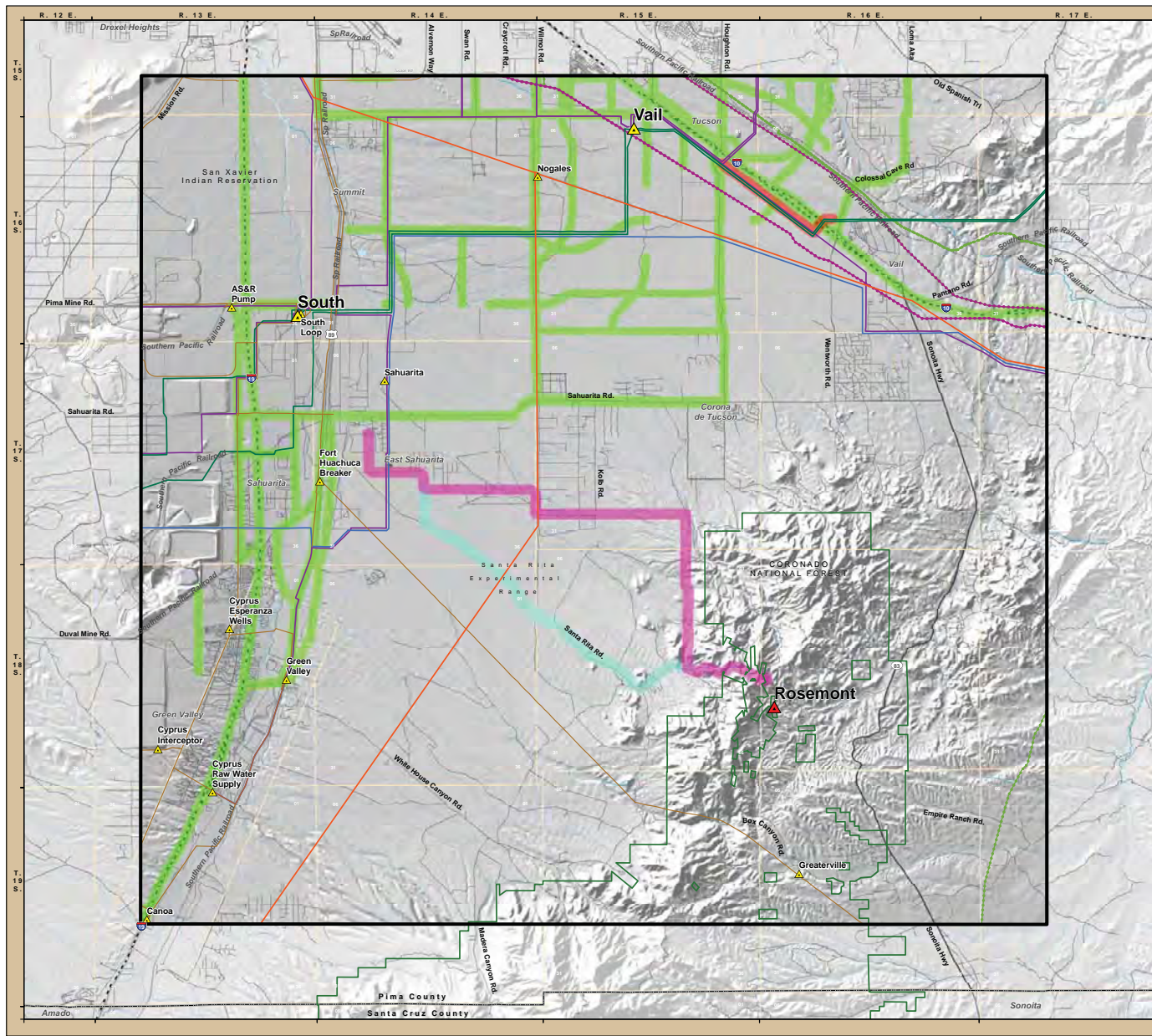
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Rosemont 138-kV Transmission Line Project Future Linear Corridors

Legend

Transmission
 Approved Cienega 138-kV Houghton to Marsh Station Transmission Project

Transportation
 2030 Regional Transportation Plan (Pima Association of Governments)

Pipelines
 Proposed Water Line Alignment
 Alternative Water Line Alignment

General Reference Features

- | | |
|-----------------------------------|-----------------------|
| Existing Substation | Project Area Boundary |
| Proposed Rosemont Substation | County Boundary |
| Existing 345-kV Transmission Line | Interstate |
| Existing 230-kV Transmission Line | Highway |
| Existing 138-kV Transmission Line | Secondary Road |
| Existing 115-kV Transmission Line | Railroad |
| Existing 46-kV Transmission Line | Lake |
| Gas Pipeline (12" or greater) | River / Wash |
| Gas Pipeline (Less than 12") | Township Boundary |
| National Forest Boundary | Section Boundary |



Sources

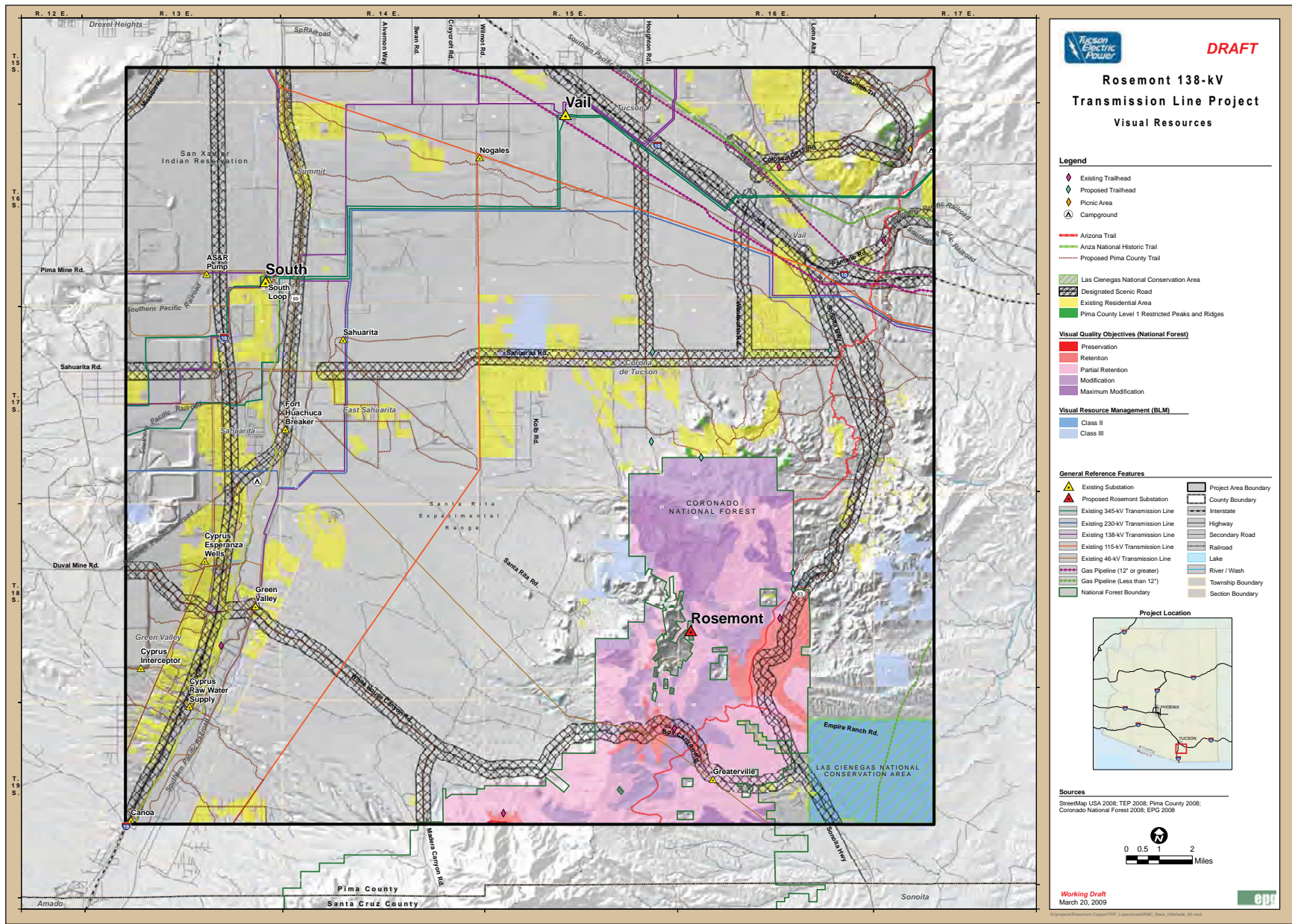
Errol L. Montgomery & Associates, Inc. 2008; City of Tucson 2008; SheetMap USA 2008; TEP 2008; P&G 2006; EPIC 2008



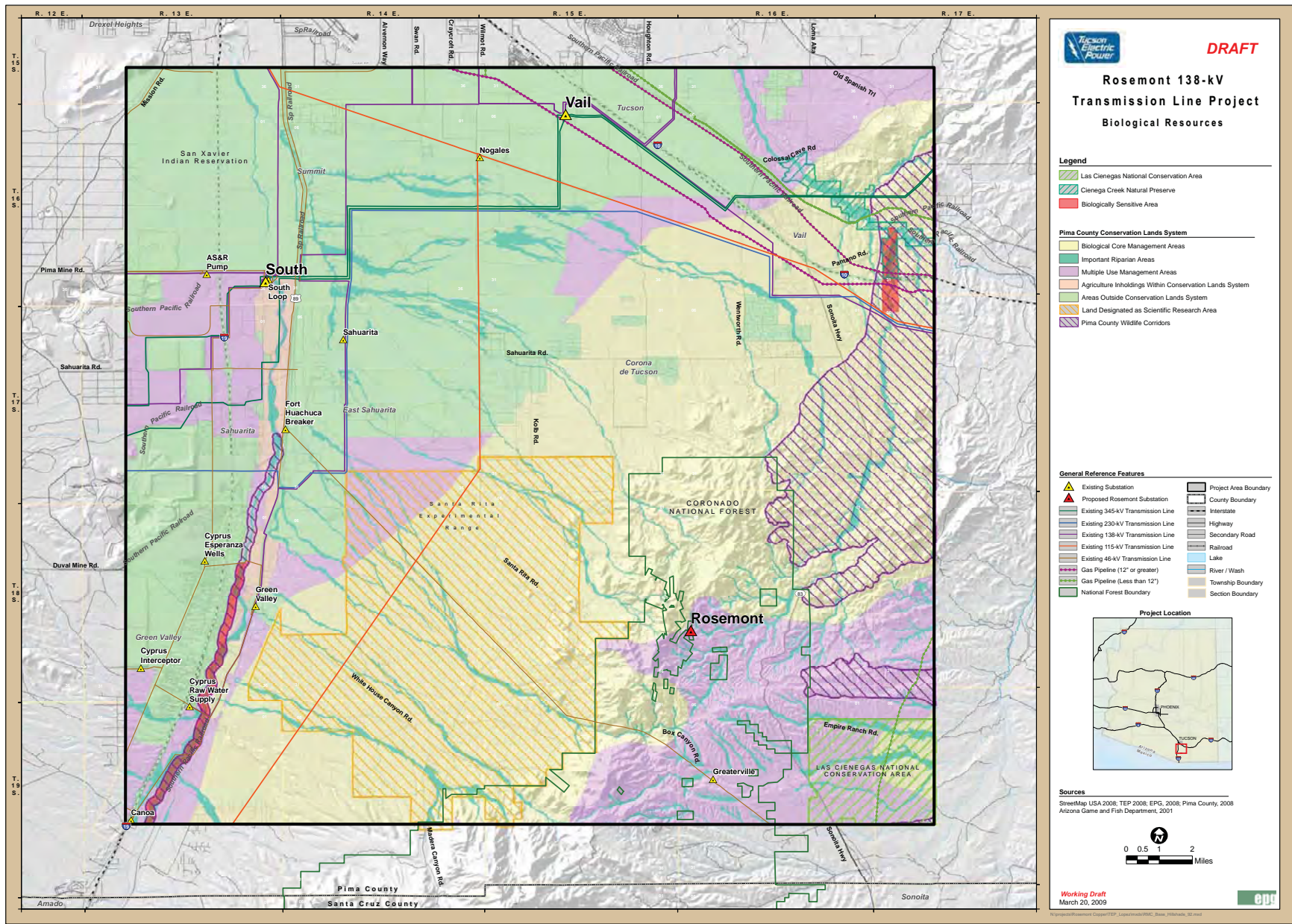
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Opportunities and Constraints Analysis

- Identify opportunities and constraints through evaluation of environmental resources within the project study area
- Conduct an analysis of various environmental resources' sensitivity to the construction, operation, maintenance, and abandonment of a transmission line



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ROSEMONT 138-KV TRANSMISSION LINE PROJECT

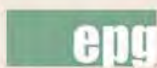
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Draft Transmission Line Siting Criteria

SENSITIVITY OF RESOURCES	
Resource Category	Proposed Sensitivity Level
Existing Land Use and Visual Resource s	
Residential	High
Schools/Educational Facilities	High
Scenic Roads/Parkways (e.g., State Route 83)	Moderate-High
Parks/Preservation	High
Recreation Areas, Open Space, Golf Courses, and Trails/Trailhead	Moderate-High
Commercial Retail/Commercial	Moderate
Hotel/Resort	Moderate
Agricultural Land (pecan groves)	Moderate
Vacant Land	Low
Industrial	Low
Major Property Boundaries (section lines, half-section lines)	Low-Moderate
Public/Quasi-Public	
- Church	High
- Cemetery	High
- Government Buildings	Moderate
- Detention Facilities (Prisons)	Low
Visual Classifications – BLM (VRM), Forest Service (VQO)	
- VRM Class I	Incompatible
- VRM Class II	Moderate-High
- VRM Class III	Low-Moderate
- VRM Class IV	Low
- VQO Preservation	Incompatible
- VQO Retention	High
- VQO Partial Retention	Moderate-High
- VQO Modification	Low-Moderate
- VQO Maximum Modification	Low
Restricted Peaks and Ridges	Moderate-High
Future Land Use and Visual Resources	
Residential Planned – Plat Approved	Moderate-High
Residential Planned – Zoning Approved	Moderate
Residential Planned – Conceptual/General/Comprehensive Plan	Low-Moderate
Commercial Planned – Plat Approved	Moderate
Commercial Planned – Zoning Approved	Low-Moderate
Commercial Planned – Conceptual/General/Comprehensive Plan	Low
Parks /Preservation – Plat Approved	Moderate-High
Parks /Preservation – Zoning Approved	Moderate
Parks/Preservation – Conceptual/General/Comprehensive Plan	Low-Moderate
Recreation Areas, Open Space, Golf Courses, and Trails/Trailhead – Plat Approved	Moderate
Recreation Areas, Open Space, Golf Courses, and Trails/Trailhead – Zoning Approved	Low-Moderate
Recreation Areas, Open Space, Golf Courses, and Trails/Trailhead – Conceptual/General/Comprehensive Plan	Low
Utility Facilities Planned – Concept Stage	Low
Utility Facilities Planned – Plat Approved	Low
Mixed Use – Plat Approved	Moderate
Mixed Use – Zoning Approved	Low-Moderate
Mixed Use – Conceptual/General/Comprehensive Plan	Low-Moderate
Military – Plat Approved	Moderate
Military – Zoning Approved	Low-Moderate
Military – Conceptual/General/Comprehensive Plan	Low
Cultural Resource s	
Listed or Proposed National or State Register Properties	Moderate-High
Biological Resource s	
Pima County Wildlife Corridors	Low-Moderate
Santa Cruz River	Moderate
Cienega Creek Natural Preserve	High
Davidson Canyon	High
Las Cienegas National Conservation Area	Moderate
Pima County Conservation Lands System	
- Agricultural Inholdings within Conservation Area	Low
- Biological Core Management Areas	Low-Moderate
- Important Riparian Areas	Low-Moderate
- Multiple Use Management Areas	Low
- Designated Scientific Research Areas	Low-Moderate

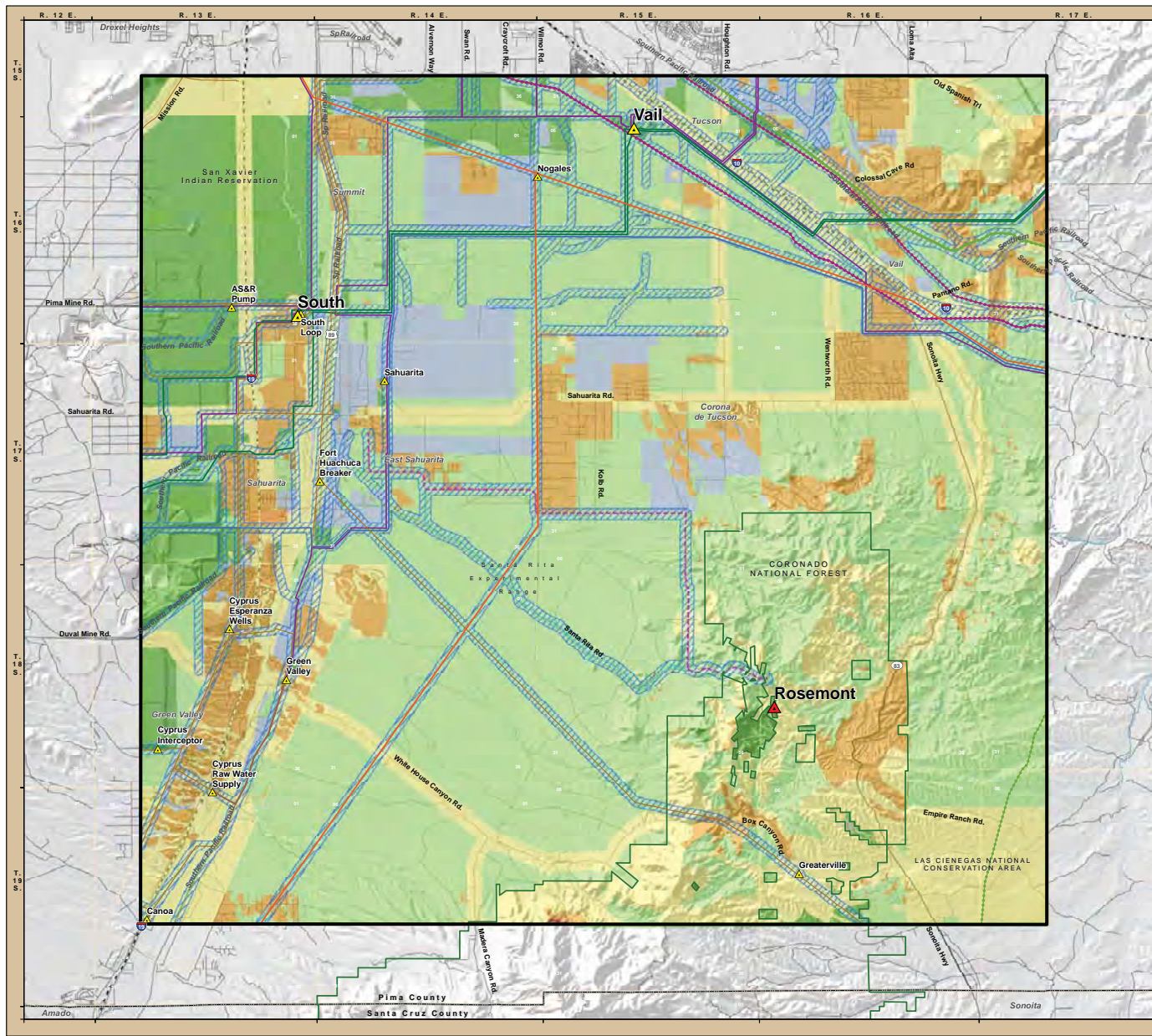
Note: Sensitivity level modification may occur after evaluation of edge condition (e.g., residential areas adjacent to major arterial roads and 46-kV and above power lines).

Opportunities
Existing Linear Facilities
Roads/Major Arterial Roadways
Pipelines
Railroads
Utility Facilities (substations, etc.)
46-kV Overhead Transmission Line Corridors
115-kV/138-kV Overhead Transmission Line Corridors
230-kV/345-kV Overhead Transmission Line Corridors
Future (Planned) Linear Facilities
Certificated transmission line corridors
Roads/Major Arterial Roadways - Approved
Roads/Major Arterial Roadways - Conceptual/General/Comprehensive Plan



Rosemont 138-kV Transmission Line Project

March 2009



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Rosemont 138-kV Transmission Line Project Composite Opportunities & Constraints

Legend

Opportunities

Sensitivity Level

Incompatible
High
Moderate-High
Moderate
Low-Moderate
Low

Proposed Opportunities

Preferred Water Pipeline Alignment
Alternative Water Pipeline Alignment

General Reference Features

Existing Substation
Proposed Rosemont Substation
Existing 345-kV Transmission Line
Existing 230-kV Transmission Line
Existing 138-kV Transmission Line
Existing 115-kV Transmission Line
Existing 46-kV Transmission Line
Gas Pipeline (12" or greater)
Gas Pipeline (Less than 12")
National Forest Boundary
Project Area Boundary
County Boundary
Interstate
Highway
Secondary Road
Railroad
Lake
River / Wash
Township Boundary
Section Boundary



Sources

StreetMap USA 2008; TEP 2008; EPG 2008; Pima County 2008;
Arizona Game and Fish Department 2001



Working Draft
March 20, 2009



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Initial Agency/Organization Contacts

TEP sent a letter to community leaders announcing the proposed project:

- Coronado National Forest
- Bureau of Land Management
- Arizona State Land Department
- Pima County, City of Tucson, Town of Sahuarita, Green Valley Coordinating Council, Vail/Cienega Corridor Volunteer (Mayors, Managers, Development Directors, Planners, etc.)
- Pima County Association of Governments
- Tohono O'odham Nation (San Xavier District)
- Pascua Yaqui Tribe
- ACC staff
- Southern Arizona Legislative Representatives
- University of Arizona, Santa Rita Experimental Range
- Davis-Monthan Air Force Base



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ROSEMONT 138-KV TRANSMISSION LINE PROJECT

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Public Participation Opportunities

- Public open house meetings
- Telephone information line (866) 632-5944
- TEP website: www.tep.com
- Arizona siting committee FAQs website:
www.cc.state.az.us/Divisions/Utilities/Electric/LineSiting-FAQs.asp
- Media briefings
- Project newsletters mailed to community, including residents and landowners, and other interested parties



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ROSEMONT 138-KV TRANSMISSION LINE PROJECT

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Next Steps

- Collect and document public and agency comments
- Finalize opportunities and constraints analysis
- Identify alternative transmission line links
- Stakeholder meeting #2 (2nd Quarter 2009)
- Public Open House #2 (2nd-3rd Quarter 2009)



March 2009



ROSEMONT 138-KV TRANSMISSION LINE PROJECT

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ROSEMONT 138kV TRANSMISSION LINE PROJECT

Public Open House Meeting #2
August 27, 2009

Project Overview

- Tucson Electric Power (TEP), as a part of its obligation to serve, is proposing to construct and operate a new 138kV transmission line for the proposed Rosemont Copper operations
- Like any customer requesting service at the transmission voltage, Rosemont is paying for the transmission siting study
- Updated project area – south of I-10 and east of I-19, with lands managed by Arizona State Land Department in conjunction with University of Arizona, Forest Service, Bureau of Land Management, and privately-owned lands under the planning jurisdictions of the Town of Sahuarita and Pima County
- Planning process – includes environmental studies and public input conducted to assist in identification and comparison of alternative transmission line routes and environmental impacts
- Project requires review by the Arizona Corporation Commission's (ACC) Power Plant and Transmission Line Siting Committee resulting in a recommendation to and a final determination by the ACC prior to construction



Rosemont 138kV Transmission Line Project

Purpose and Need

- Electric utilities are required by the State of Arizona to provide electrical service to customers upon request
- Rosemont Copper Company has requested that TEP provide electric power to the Rosemont Copper operations
- The primary purpose and need for the proposed transmission line is to provide adequate and reliable power for the proposed Rosemont Copper operations
- There are no existing transmission lines and substations in the vicinity of the proposed operation with the needed electrical capacity



Rosemont 138kV Transmission Line Project

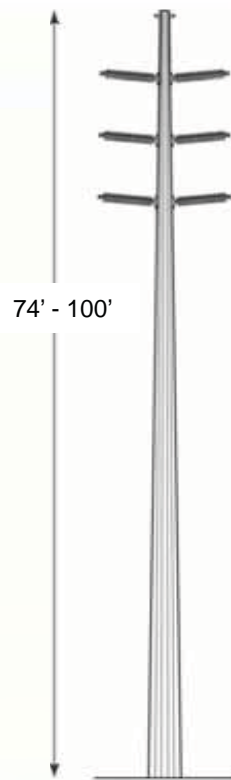
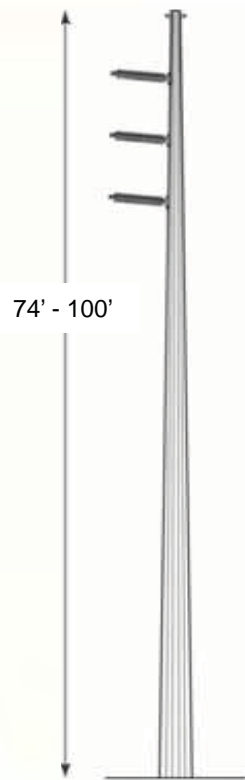
Project Description

- Up to approximately 20 miles of 138kV transmission line (line length depends upon final route)
- A 500-foot-wide corridor will be requested, and within that corridor a 100-foot-wide right-of-way would be obtained
- Approximately 2 acres of land for construction, operation, and maintenance of the proposed switchyard
- Approximately 1 acre of land for construction, operation, and maintenance of the proposed Rosemont Substation



Rosemont 138kV Transmission Line Project

Proposed Structure Type(s)



Rosemont 138kV Transmission Line Project

Proposed Switchyard

- Photograph is of a typical TEP switchyard that resembles the proposed switchyard
- Proposed facility for interconnection with the existing TEP transmission system
- Approximately 1 acre in size
- Located on private land



Rosemont 138kV Transmission Line Project

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Technical Engineering Studies

- Technical engineering studies completed by KR Saline and TEP to refine the project description
- Project description refined to identify a point at which the proposed transmission line will tap into TEP's electrical system at a proposed switchyard. This proposed switchyard will tap the existing South to Green Valley 138kV transmission line and become the point of origin for the proposed transmission line
- Current plan of service does not include direct connection to Vail or South substations
- Study concluded that two components are required for the transmission line project
 - Power for construction from a proposed 138kV transmission line extending from existing Greaterville Substation to proposed Rosemont Substation
 - Power for operations from a proposed 138kV transmission line extending from proposed switchyard to proposed Rosemont Substation



Rosemont 138kV Transmission Line Project

Environmental Studies

Resource Data Collected

– Land use

- Existing and future land use
- Jurisdictional planning guidelines

– Visual and recreation

- Scenic quality
- Sensitive viewers
- Scenic management guidelines
- Roads/trails and trailheads

– Cultural

- Archaeological districts
- National Register or State Historic Districts or Sites

– Biological

- Wildlife and habitat
- Vegetation
- Special status species



Rosemont 138kV Transmission Line Project

University of Arizona's Santa Rita Experimental Range

- Established in 1902 and is considered the oldest experimental range in the country
- Provides a unique scientific resource with an archive of repeat photos
- Consists of more than 80 square miles leased from the Arizona State Land Department of grazed and ungrazed land on the range



Rosemont 138kV Transmission Line Project

Resource Sensitivity Levels Overview

- **Low:** potential resource constraints are minimal or absent, typically representing areas most desirable/compatible for construction/operation of transmission lines (e.g., industrial, vacant/undeveloped lands)
- **Low-moderate:** potential resource constraints are present, but conflicts or issues would likely be minimized with conventional design and construction methods (e.g., existing commercial, general planned residential areas)
- **Moderate:** potential resource constraints are present, but conflicts or issues would likely be reduced or minimized with conventional and non-conventional design and construction methods (e.g., agricultural [pecan groves], zone-approved residential areas)



Rosemont 138kV Transmission Line Project

Resource Sensitivity Levels Overview (continued)

- **Moderate-high:** potential resource constraints are present, but conflicts or issues would likely be reduced with conventional and non-conventional design or mitigation measures (e.g., recreation areas, plat-approved residential areas)
- **High:** potential resource constraints are present where there are unique, highly valued, complex, or legally protected resources; or where conflicts or issues would be more difficult to avoid or reduce with the conventional and non-conventional design or mitigation measures (e.g., existing residential development)
- **Incompatible:** potential resource constraints are present where agencies have an adopted management plan or regulatory guidelines that identify transmission lines as incompatible or in conflict with existing or future resources (e.g., designated wilderness areas)



Rosemont 138kV Transmission Line Project

Opportunities and Constraints

- Based upon resources within the project study area
- Sensitivity levels assigned based upon established criteria for each resource
- Sensitivity levels assist in identifying potential constraints for building a transmission line
- Opportunities are considered within the context of the areas in which they occur
 - A constraint may be underlying or adjacent to an opportunity area



Rosemont 138kV Transmission Line Project

Siting Criteria

SENSITIVITY OF RESOURCES August 2009	
Resource Category	Sensitivity Level*
Existing Land Use Resources	
Residential	High
Schools/Educational Facilities	High
Commercial Retail	Low-Moderate
Hotel/Resort	Moderate
Agricultural Land (pecan groves)	Moderate
Vacant/Undeveloped Land	Low
Industrial	Low
Public/Quasi-Public	
- Church	High
- Cemetery	High
- Government Buildings	Low-Moderate
Existing Recreation Resources	
Parks	High
Wilderness Area	Incompatible
Inventoried Roadless Area	High
Developed National/Regional Trail	High
Local Trails (County or City designated)	Moderate-High
Trailheads, Picnic areas, and Campgrounds	High
Pima County Natural Areas	Moderate
Existing Visual Resources	
Scenic Roads	High
Visual Classifications – BLM (VRM), Forest Service Concern Level Roads	
- VRM Class II	Moderate-High
- VRM Class III	Low-Moderate
- Concern Level 1 (High concern roads and trails) – Immediate Foreground (0-300 feet)	High
- Concern Level 1 (High concern roads and trails) – Foreground (300 feet -1/2 mile)	High
- Concern Level 1 (High concern roads and trails) – Middleground (1/2 to 4 miles)	Moderate
- Concern Level 2 (Moderate concern roads and trails) – Immediate Foreground (0-300 feet)	Moderate
- Concern Level 2 (Moderate concern roads and trails) – Foreground (300 feet -1/2 mile)	Moderate
- Concern Level 2 (Moderate concern roads and trails) – Middleground (1/2 to 4 miles)	Low-Moderate
Future Land Use Resources	
Residential Planned – Plat Approved	Moderate-High
Residential Planned – Zoning Approved	Moderate
Residential Planned – Conceptual/General/Comprehensive Plan	Low-Moderate
Commercial Planned – Plat Approved	Low-Moderate
Commercial Planned – Conceptual/General/Comprehensive Plan	Low
Mixed Use – Conceptual/General/Comprehensive Plan	Low-Moderate
Military – Plat Approved	Moderate
Industrial Facilities – Plat Approved	Low
Industrial Facilities – Conceptual/General/Comprehensive Plan	Low
Future Recreation Resources	
Parks – Plat Approved	Moderate-High
Parks – Conceptual/General/Comprehensive Plan	Low-Moderate
National/Regional Trails – Plat Approved	Moderate-High

Local Trails (County or City designated) – Conceptual/General/Comprehensive Plan	Low
Pima County Natural Areas – Plat Approved	Low-Moderate
Pima County Natural Areas – Zoning Approved and Conceptual/General/Comprehensive Plan	Low
Existing Cultural Resources	
Listed or Eligible National or State Register Properties	Moderate-High
Existing Biological Resources	
Pima County Wildlife Corridors	Low-Moderate
Santa Cruz River	Moderate
Bar V Ranch (Pima County 2004 Conservation Bond Program)	Moderate-High
Las Cienegas National Conservation Area	Moderate-High
Pima County Conservation Lands System	
- Agricultural Inholdings within Conservation Area	Low
- Biological Core Management Areas	Low-Moderate
- Important Riparian Areas	Low-Moderate
- Multiple Use Management Areas	Low
- Designated Scientific Research Areas	Low-Moderate

Opportunities	
Existing Linear Facilities	
Roads/Major Arterial Roadways	
Railroads	
Utility Facilities (substations, etc.)	
Section lines, half-section lines	
46kV Overhead Transmission Line Corridors	
115kV/138kV Overhead Transmission Line Corridors	
230kV/345kV Overhead Transmission Line Corridors	
Future (Planned) Linear Facilities	
Roads/Major Arterial Roadways - Approved	
Roads/Major Arterial Roadways - Conceptual/General/Comprehensive Plan	
Pipelines (e.g., water, wastewater)	
Utility Facilities (transmission lines, substations)	

Notes: Sensitivity level modification may occur after evaluation of edge condition (e.g., residential areas adjacent to major arterial roads and 46kV and above power lines).

*The agencies/public provided comments and suggestions to add or revise the resource category and/or sensitivity levels in February and March 2009 resulting in the final criteria



Rosemont 138kV Transmission Line Project

Key Terms Defined

Right-of-way: land authorized to be used or occupied for the construction, operation, and maintenance of a linear facility

Corridor: a tract of land of varying width that allows the flexibility for a transmission line right-of-way to be located within to accommodate final engineering and environmental considerations

Preliminary link: short segment of a preliminary transmission line route between other intersecting segments

Link node: intersecting point where two links meet

Route or routes: series of links connecting the proposed switchyard and proposed Rosemont Substation



Rosemont 138kV Transmission Line Project

Preliminary Link Alternative Identification

- Defined sensitivity criteria for resources inventoried (e.g., general industrial – low sensitivity vs. existing residential – high sensitivity)
- Conducted opportunities and constraints analysis for resources inventoried (e.g., transmission lines, existing, and future land use)
- Prepared opportunities and constraints map
- Identified preliminary link alternatives
 - Agency/public comment
 - Environmental
 - Engineering



Rosemont 138kV Transmission Line Project

Link Alternative Screening and Route Identification

- Links will be screened based on additional environmental and engineering analysis, as well as agency/public input
- Links will be combined to form complete transmission line route alternatives between the proposed switchyard and proposed Rosemont Substation



Rosemont 138kV Transmission Line Project

TEP Decision Elements

- Purpose and need
- Environmental analysis
- Public/agency input
- Permits
- Engineering analysis
- Ability to obtain right-of-way
- Overall cost



Rosemont 138kV Transmission Line Project

Public Participation Opportunities

- Public open house meetings
- Telephone information line: (866) 632-5944
- TEP website: www.tep.com
- Arizona siting committee FAQs website: www.cc.state.az.us/Divisions/Utilities/Electric/LineSiting-FAQs.asp
- Media briefings
- Project newsletters mailed to community, including residents, landowners, and other interested parties



Rosemont 138kV Transmission Line Project

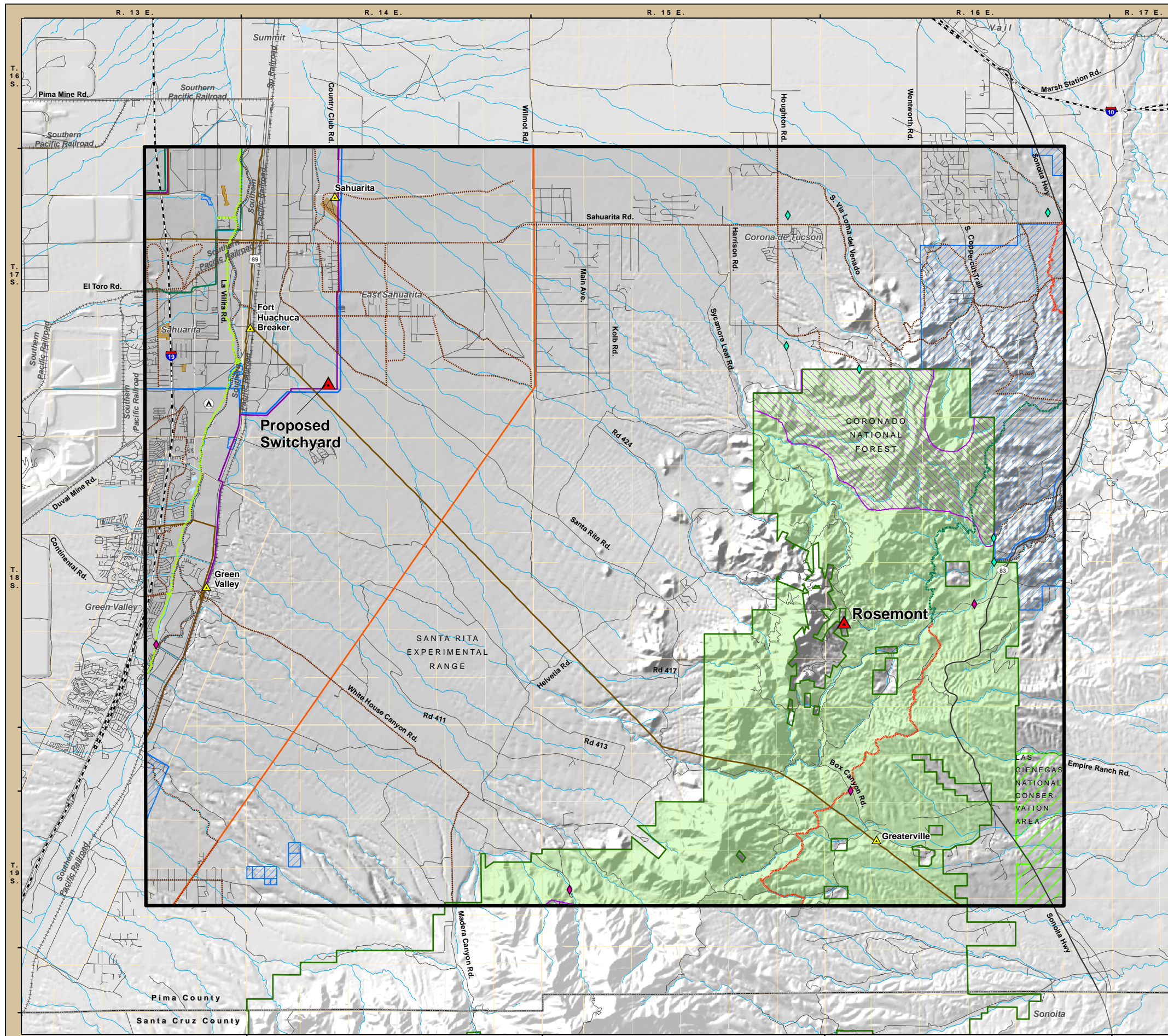
Next Steps

- Ongoing
 - Collect and document public and agency comments
 - Conduct detailed engineering and environmental studies on preliminary link alternatives
- Fall 2009
 - Conduct stakeholder meeting #3
 - Identify transmission line route alternatives from the preliminary links
- Fall/winter 2009
 - Conduct stakeholder meeting #4
 - Conduct public open house #3



Rosemont 138kV Transmission Line Project

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Rosemont 138kV Transmission Line Project Parks, Open Space, Recreation

Legend

- Existing Trailhead
- Proposed Trailhead
- Campground
- Arizona Trail
- Proposed Arizona Trail
- Anza National Historic Trail
- Proposed Pima County Trail
- Pima County Proposed Park
- Las Cienegas National Conservation Area
- Pima County Park
- Coronado National Forest
- Inventoried Roadless Area

Note: Project study area boundary has been updated as of July 2009

General Reference Features

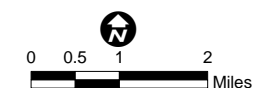
- | | |
|-------------------------------------|-------------------|
| Existing Substation | County Boundary |
| Proposed Switchyard/Substation | Interstate |
| Existing 345kV Transmission Line | Highway |
| Existing 230kV Transmission Line | Secondary Road |
| Existing 138kV Transmission Line | Railroad |
| Existing 115kV Transmission Line | River / Wash |
| Existing 46kV Transmission Line | Township Boundary |
| National Forest Boundary | Section Boundary |
| Updated Project Study Area Boundary | |

Project Location



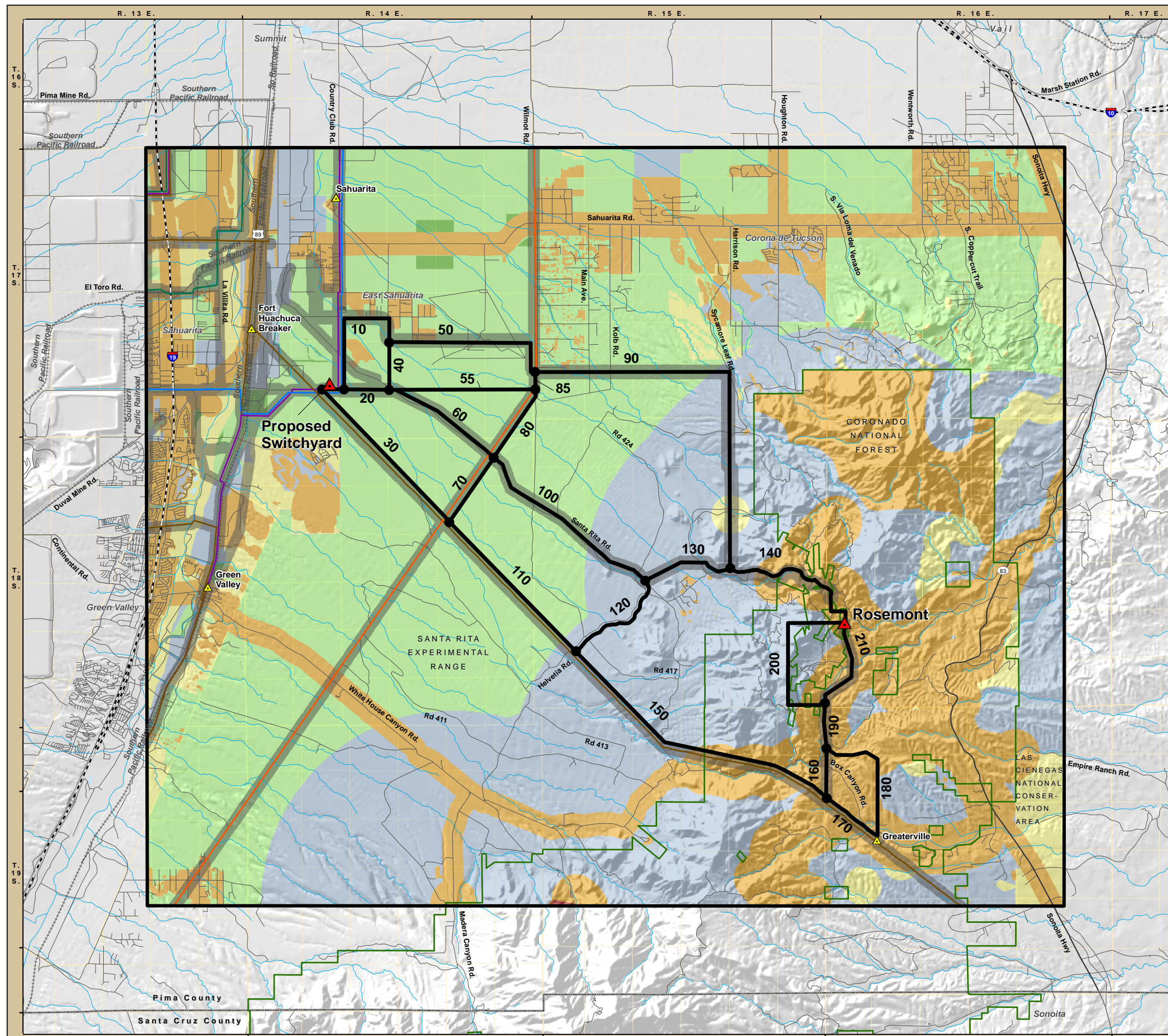
Sources

StreetMap USA 2008; TEP 2008; EPG 2008;
Pima County, 2008; Coronado National Forest, 2009



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August 24, 2009





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Rosemont 138kV Transmission Line Project

Preliminary Transmission Line Link Alternatives with Composite Opportunities & Constraints

Legend

- Link Identification Number
- Link Node
- Preliminary Alternative Link
- Opportunities

Sensitivity Level

- Incompatible
- High
- Moderate-High
- Moderate
- Low-Moderate
- Low

Notes: Not all of the preliminary alternative links shown on the map will be constructed. Project study area boundary has been updated as of July 2009

All links are preliminary and may be modified based on agency and public input.

General Reference Features

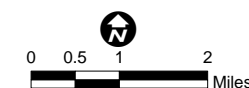
- Existing Substation
- Proposed Switchyard/Substation
- Existing 345kV Transmission Line
- Existing 230kV Transmission Line
- Existing 138kV Transmission Line
- Existing 115kV Transmission Line
- Existing 46kV Transmission Line
- National Forest Boundary
- Updated Project Study Area Boundary
- County Boundary
- Interstate
- Highway
- Secondary Road
- Railroad
- River / Wash
- Township Boundary
- Section Boundary

Project Location



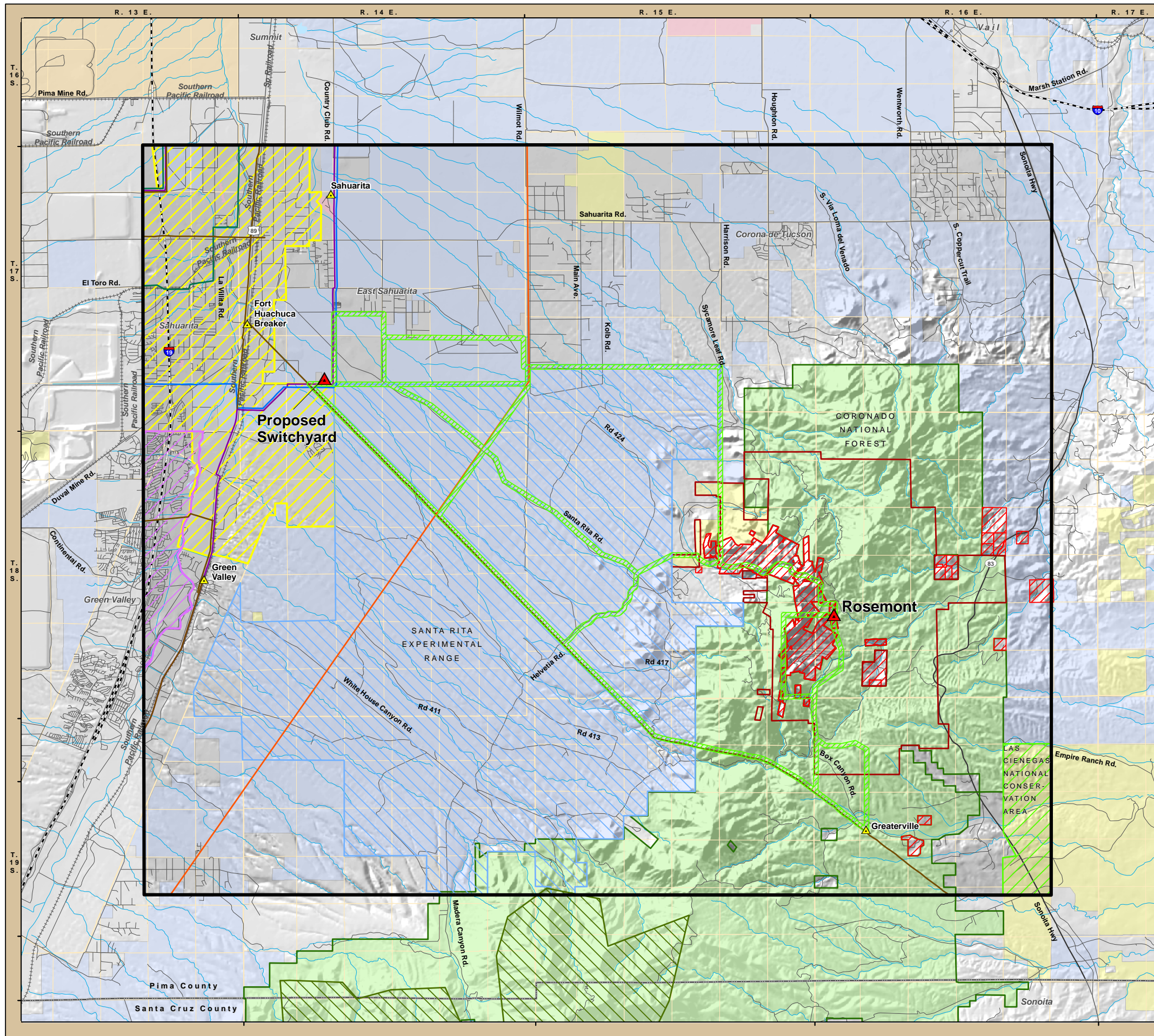
Sources

StreetMap USA 2008; TEP 2008; EPG 2008; Pima County 2008



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Rosemont 138kV Transmission Line Project

Preliminary Transmission Line Link Alternatives with Jurisdiction and Ownership

Legend

Preliminary Transmission Line Links
Alternative 500-foot Corridor

Land Managing Areas

U.S. Forest Service
 Bureau of Land Management
 Indian Reservation
 Arizona State Land
 Local Park (Pima County)
 Unincorporated Pima County

Planning Jurisdictions

Green Valley Planning Area
 Sahuarita Incorporated Boundary

Special Management Areas

Mt. Wrightson Wilderness
 Santa Rita Experimental Range
 Las Cienegas National Conservation Area

Rosemont Copper Facilities

Private Lands
 Claim Boundary

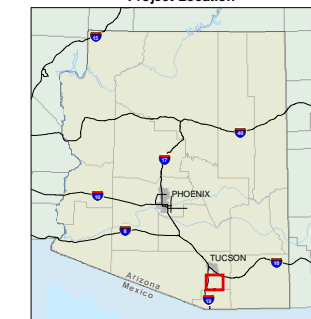
Notes: Not all of the preliminary alternative links shown on the map will be constructed. Project study area boundary has been updated as of July 2009

All links are preliminary and may be modified based on agency and public input.

General Reference Features

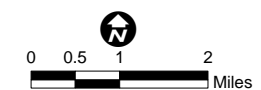
Existing Substation	County Boundary
Proposed Switchyard/Substation	Interstate
Existing 345kV Transmission Line	Highway
Existing 230kV Transmission Line	Secondary Road
Existing 138kV Transmission Line	Railroad
Existing 115kV Transmission Line	River / Wash
Existing 46kV Transmission Line	Township Boundary
National Forest Boundary	Section Boundary
Updated Project Study Area Boundary	

Project Location



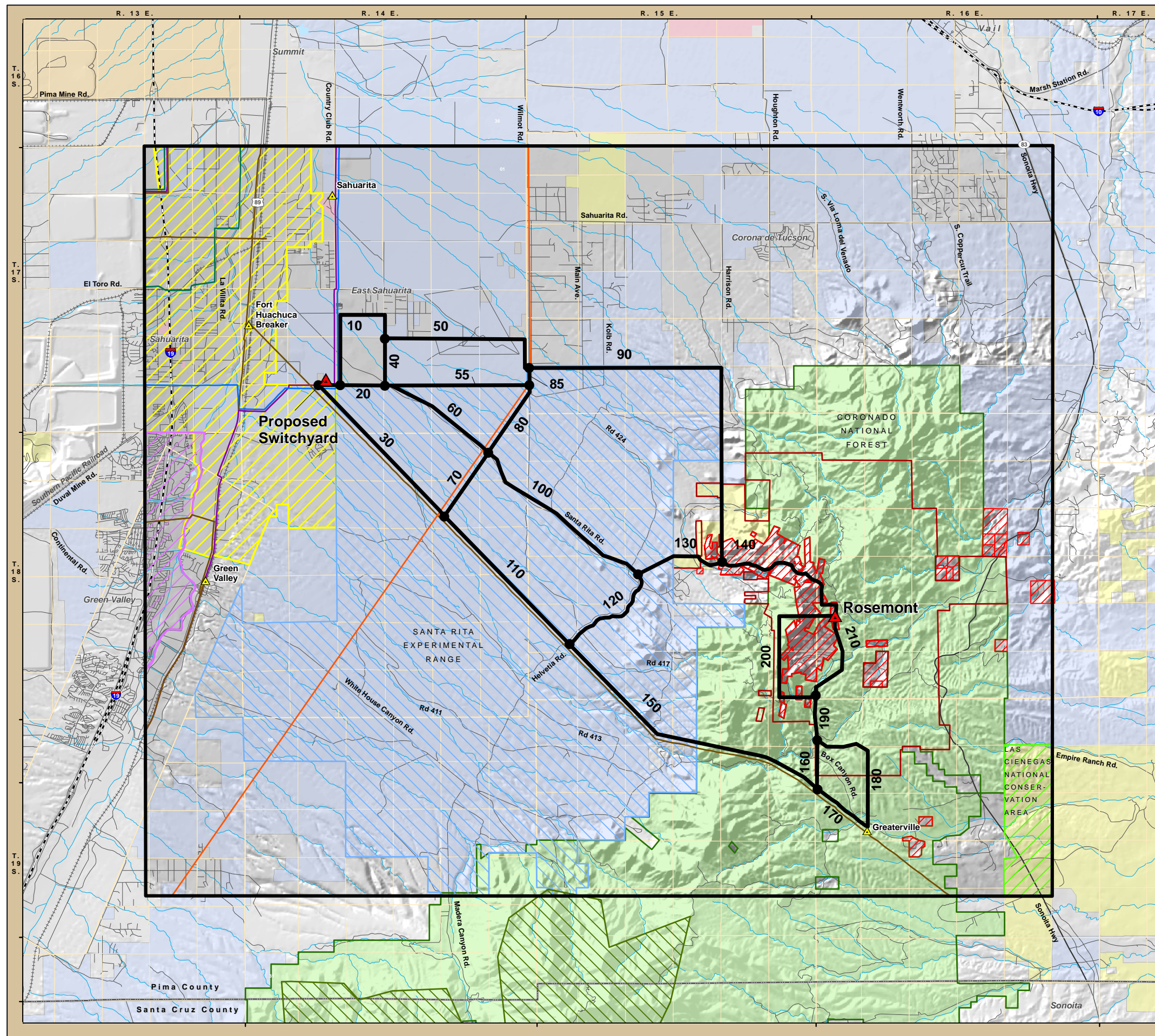
Sources

StreetMap USA 2008; TEP 2008; EPG, 2008.
Pima County 2008, Rosemont Copper Company 2008



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August 24, 2009





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Rosemont 138kV Transmission Line Project

Preliminary Transmission Link Alternatives with Jurisdiction and Ownership

Legend

- Link Identification Number
- Link Node
- Preliminary Alternative Link

Land Managing Areas

- U.S. Forest Service
- Bureau of Land Management
- Indian Reservation
- Arizona State Land
- Local Park (Pima County)
- Unincorporated Pima County

Planning Jurisdictions

- Green Valley Planning Area
- Sahuarita Incorporated Boundary

Special Management Areas

- Mt. Wrightson Wilderness
- Santa Rita Experimental Range
- Las Cienegas National Conservation Area

Rosemont Copper Facilities

- Private Lands
- Claim Boundary

Notes: Not all of the preliminary alternative links shown on the map will be constructed. Project study area boundary has been updated as of July 2009

All links are preliminary and may be modified based on agency and public input.

General Reference Features

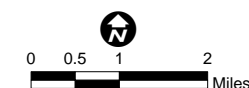
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|-------------------------------------|-------------------|
| Existing Substation | County Boundary |
| Proposed Switchyard/Substation | Interstate |
| Existing 345kV Transmission Line | Highway |
| Existing 230kV Transmission Line | Secondary Road |
| Existing 138kV Transmission Line | Railroad |
| Existing 115kV Transmission Line | River / Wash |
| Existing 46kV Transmission Line | Township Boundary |
| National Forest Boundary | Section Boundary |
| Updated Project Study Area Boundary | |

Project Location



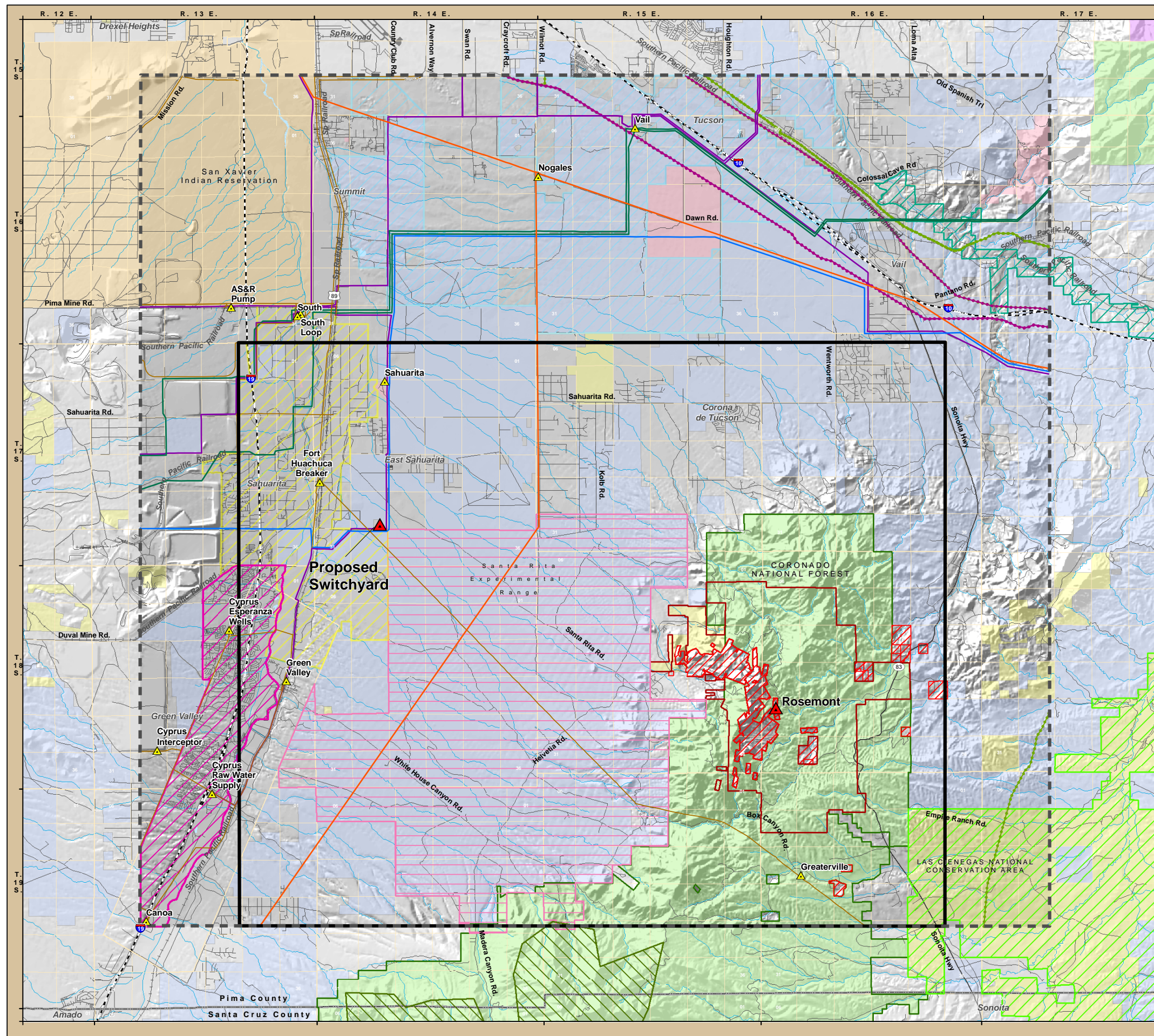
Sources

StreetMap USA 2008; TEP 2008; EPG, 2008;
Pima County 2008; Rosemont Copper Company 2008



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Rosemont 138kV Transmission Line Project Jurisdiction and Ownership

Legend

Land Managing Areas

- U.S. Forest Service
- Bureau of Land Management
- National Park Service
- Indian Reservation
- Arizona State Land
- Local Park (Pima County)
- Unincorporated Pima County

Planning Jurisdictions

- Green Valley Planning Area
- Sahuarita Incorporated Boundary
- Tucson Incorporated Boundary

Special Management Areas

- Mt. Wrightson Wilderness
- Santa Rita Experimental Range
- Las Cienegas National Conservation Area
- Cienega Creek Natural Preserve

Rosemont Copper Facilities

- Private Lands
- Claim Boundary

Note: Project study area boundary has been updated as of July 2009

General Reference Features

- Existing Substation
- Proposed Switchyard/Substation
- Existing 345kV Transmission Line
- Existing 230kV Transmission Line
- Existing 138kV Transmission Line
- Existing 115kV Transmission Line
- Existing 46kV Transmission Line
- Gas Pipeline (12" or greater)
- Gas Pipeline (Less than 12")
- National Forest Boundary
- Updated Project Study Area Boundary
- County Boundary
- Interstate
- Highway
- Secondary Road
- Railroad
- Lake
- River / Wash
- Township Boundary
- Section Boundary
- March 2009 Study Area Boundary



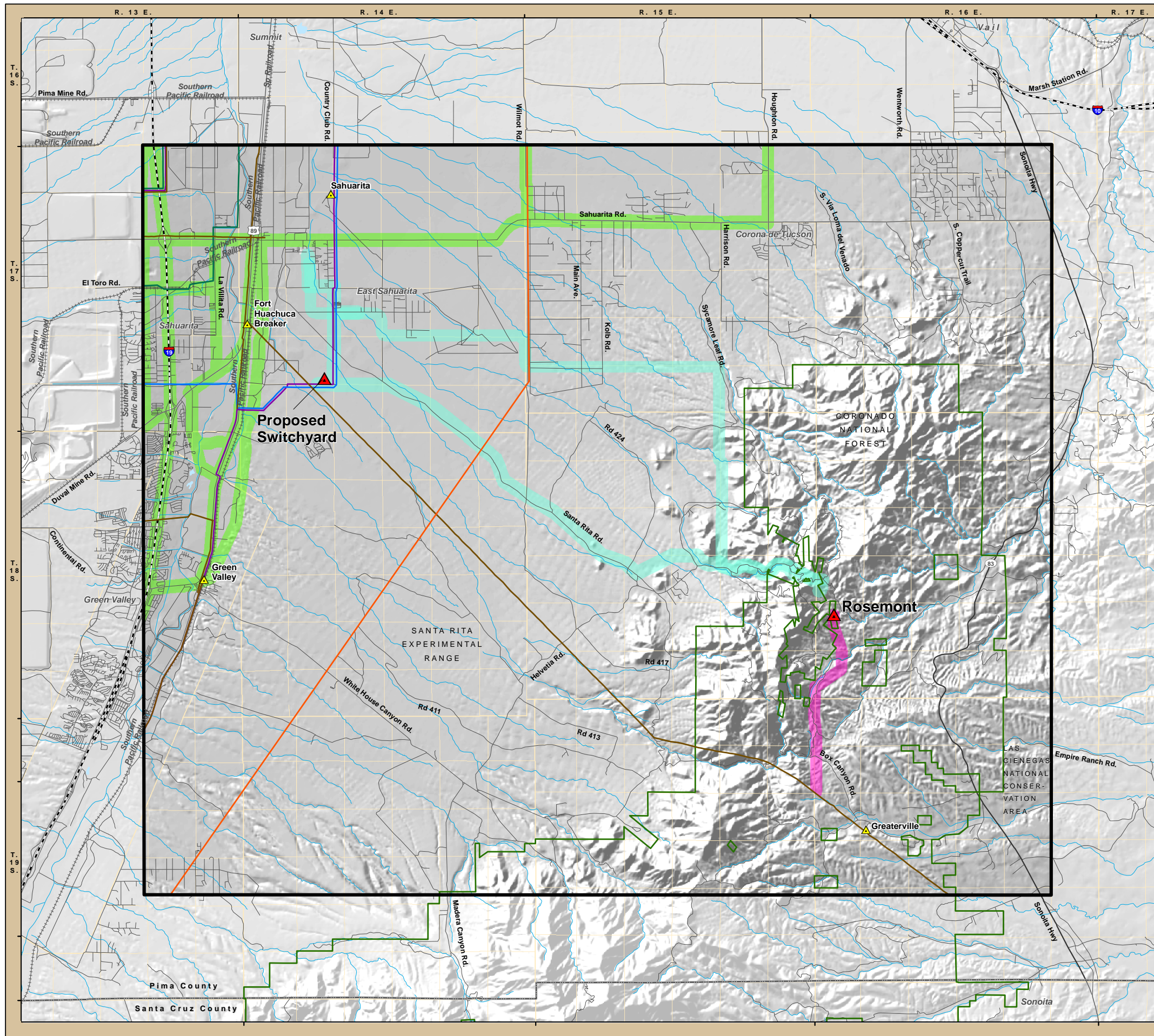
Sources

StreetMap USA 2008; TEP 2008; EPG, 2008,
Pima County 2008, Rosemont Copper Company 2008



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Rosemont 138kV Transmission Line Project Future Linear Corridors

Legend

Transmission

Conceptual Utility Corridor

Transportation

2030 Regional Transportation Plan
(Pima Association of Governments)

Pipeline

Conceptual Water Line Alignment

Note: Project study area boundary has been updated as of July 2009

General Reference Features

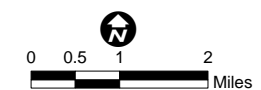
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| Existing Substation | County Boundary |
| Proposed Switchyard/Substation | Interstate |
| Existing 345kV Transmission Line | Highway |
| Existing 230kV Transmission Line | Secondary Road |
| Existing 138kV Transmission Line | Railroad |
| Existing 115kV Transmission Line | River / Wash |
| Existing 46kV Transmission Line | Township Boundary |
| National Forest Boundary | Section Boundary |
| Updated Project Study Area Boundary | |

Project Location



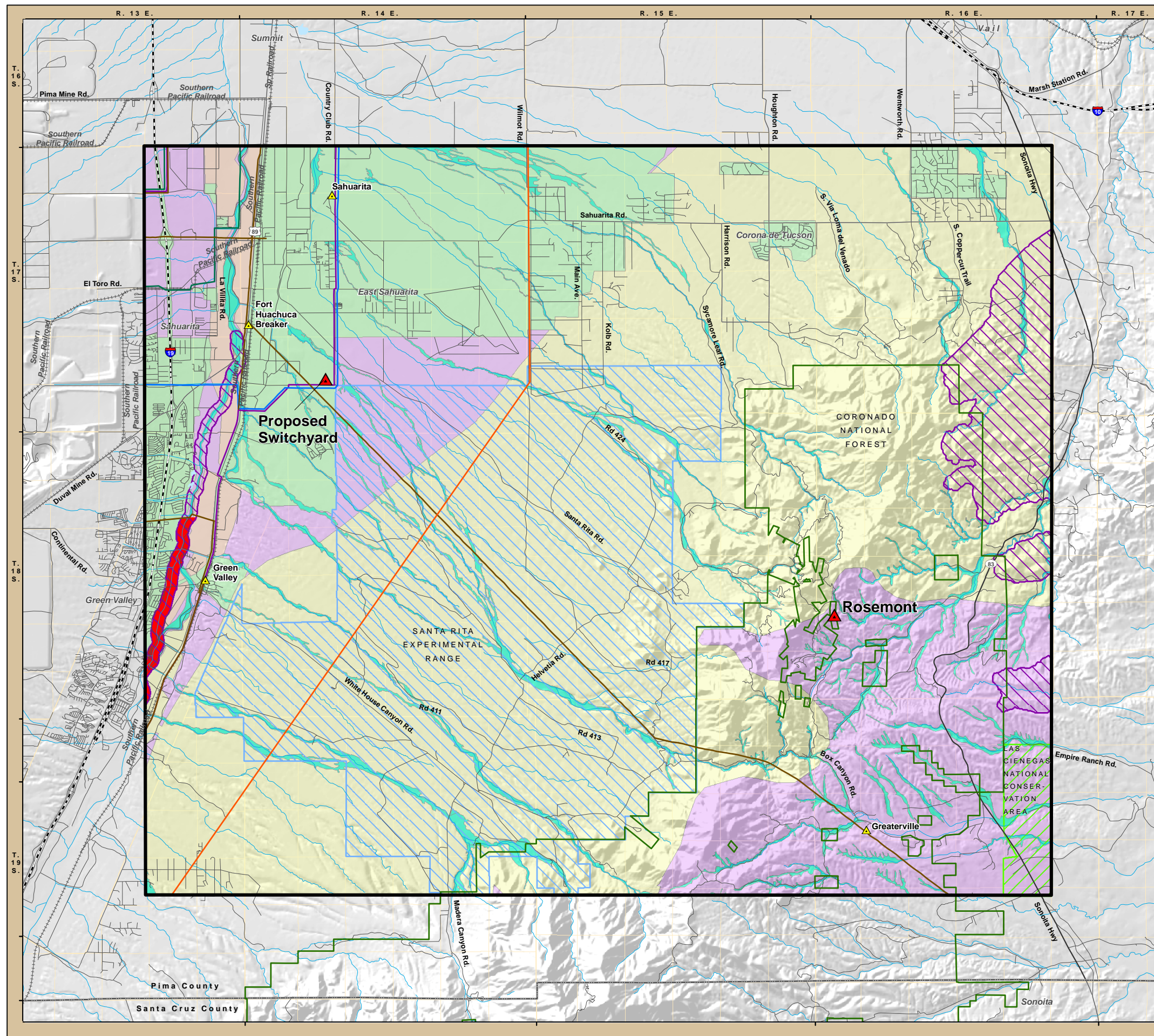
Sources

Errol L. Montgomery & Associates, Inc. 2008;
StreetMap USA 2008; TEP 2008; PAG 2006; EPG 2008



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Rosemont 138kV Transmission Line Project Biological Resources

Legend

- Las Cienegas National Conservation Area
- Biologically Sensitive Area

Pima County Conservation Lands System

- Biological Core Management Areas
- Important Riparian Areas
- Multiple Use Management Areas
- Agriculture Inholdings Within Conservation Lands System
- Areas Outside Conservation Lands System
- Land Designated as Scientific Research Area
- Pima County Wildlife Corridors

Note: Project study area boundary has been updated as of July 2009

General Reference Features

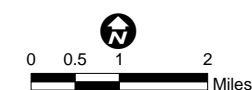
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|-------------------------------------|-------------------|
| Existing Substation | County Boundary |
| Proposed Switchyard/Substation | Interstate |
| Existing 345kV Transmission Line | Highway |
| Existing 230kV Transmission Line | Secondary Road |
| Existing 138kV Transmission Line | Railroad |
| Existing 115kV Transmission Line | River / Wash |
| Existing 46kV Transmission Line | Township Boundary |
| National Forest Boundary | Section Boundary |
| Updated Project Study Area Boundary | |

Project Location



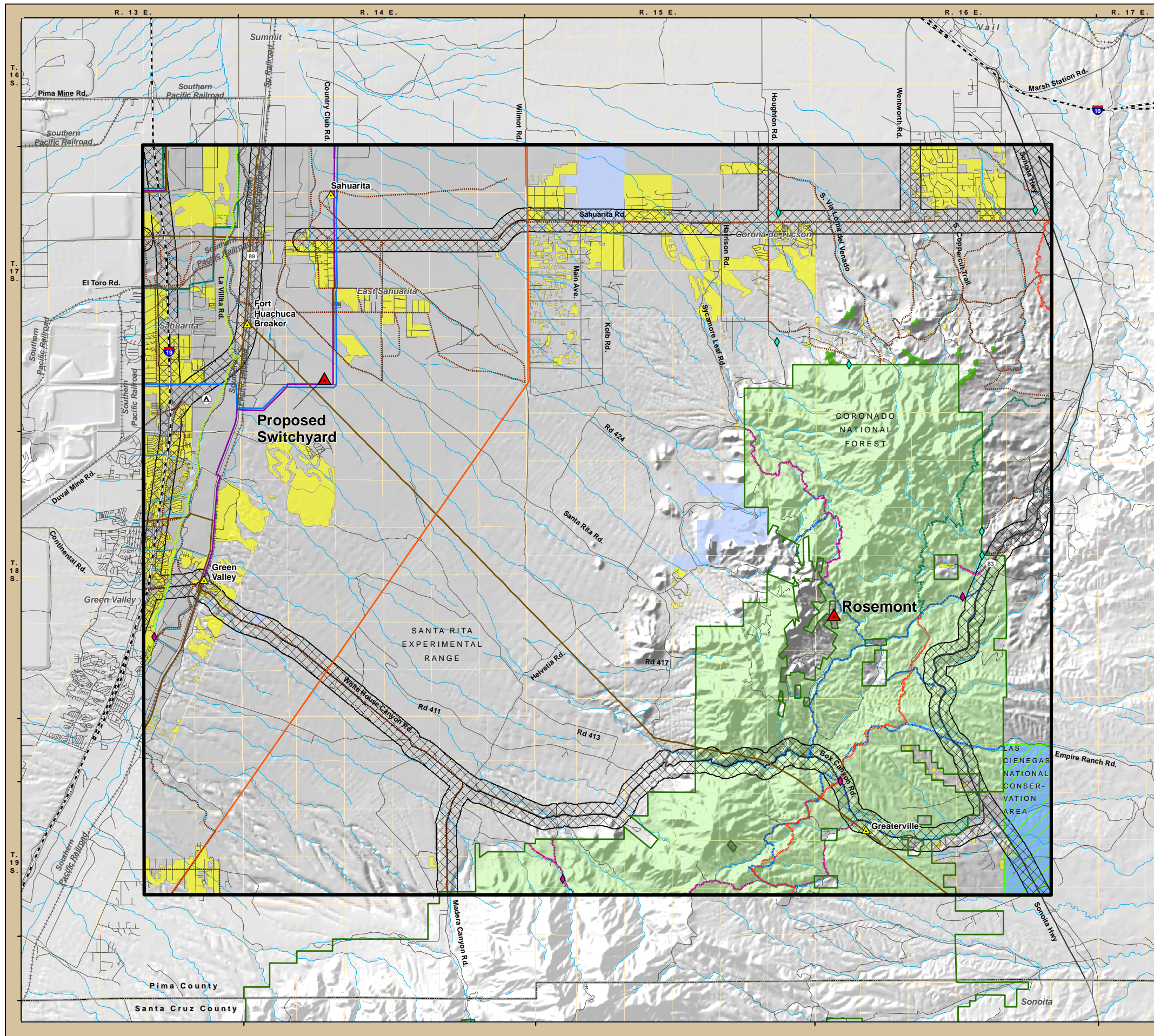
Sources

StreetMap USA 2008; TEP 2008; EPG, 2008; Pima County, 2008



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Rosemont 138kV Transmission Line Project Visual Resources

Legend

- Existing Trailhead
- Proposed Trailhead
- Campground
- Arizona Trail
- Proposed Arizona Trail
- Anza National Historic Trail
- Proposed Pima County Trail
- Las Cienegas National Conservation Area
- Designated Scenic Road
- Existing Residential Area
- Pima County Level 1 Restricted Peaks and Ridges
- Coronado National Forest

Concern Level Roads (National Forest)

- Coronado Concern Level 1 Road
- Coronado Concern Level 2 Road

Visual Resource Management (BLM)

- Class II
- Class III

Note: Project study area boundary has been updated as of July 2009

General Reference Features

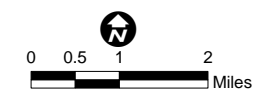
- Existing Substation
- Proposed Switchyard/Substation
- Existing 345kV Transmission Line
- Existing 230kV Transmission Line
- Existing 138kV Transmission Line
- Existing 115kV Transmission Line
- Existing 46kV Transmission Line
- National Forest Boundary
- Updated Project Study Area Boundary
- County Boundary
- Interstate
- Highway
- Secondary Road
- Railroad
- River / Wash
- Township Boundary
- Section Boundary

Project Location



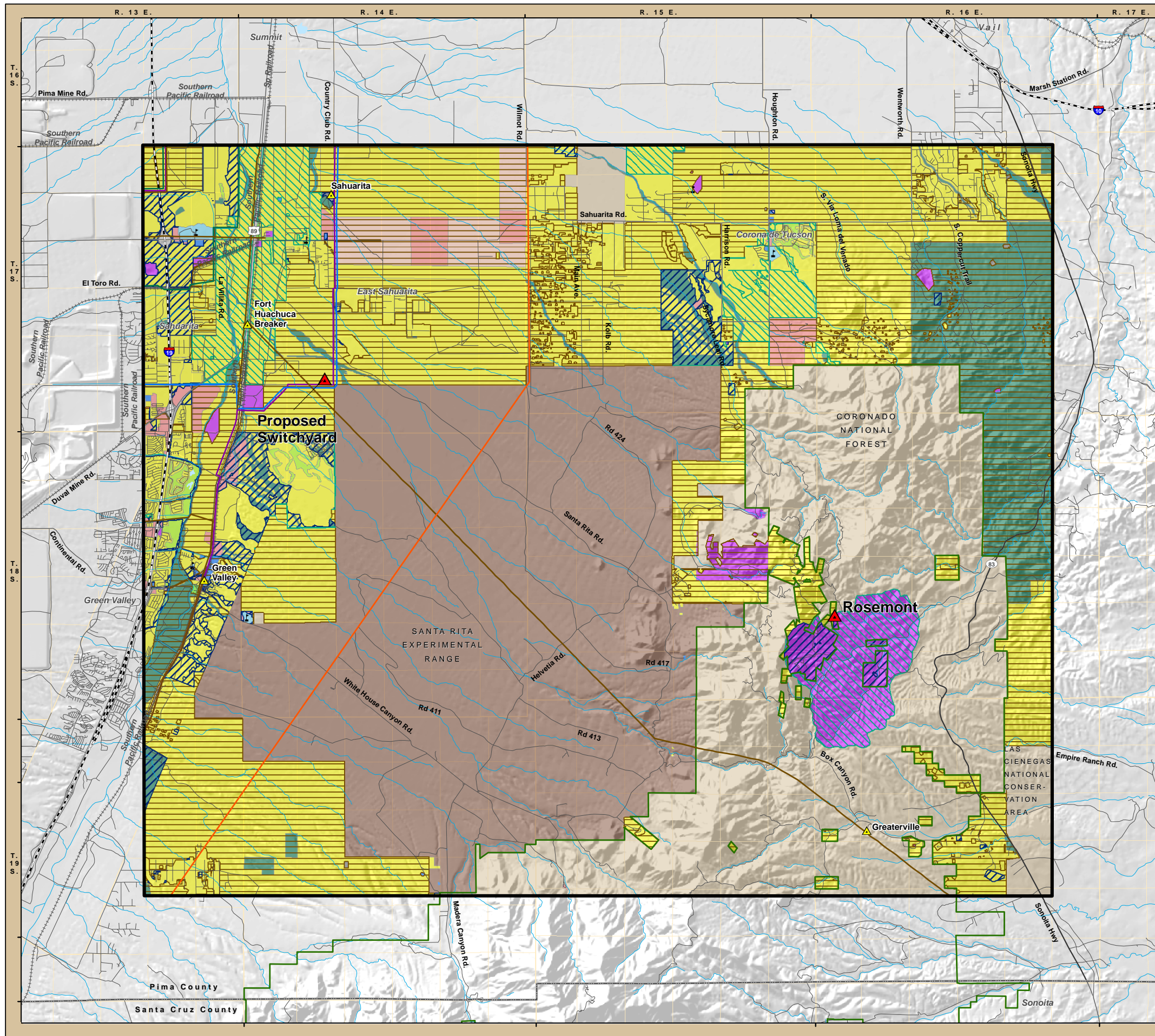
Sources

StreetMap USA 2008; TEP 2008; Pima County 2008;
Coronado National Forest 2009; EPG 2009



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Rosemont 138kV Transmission Line Project Future Land Use

Legend



School

Land Use

- Agriculture
- Commercial
- Industrial
- Military
- Mixed Use
- Parks/Preservation
- Public Land
- Public/Quasi-Public
- Recreation
- Residential
- School/Educational Facilities
- Santa Rita Experimental Range
- Utilities

Status

- Plat Approved/Future Use Under the Mining Act
- Zoning Approved/NEPA Process Ongoing
- Conceptual/General/Comprehensive Plan

Notes:
Project study area boundary has been updated as of July 2009.
Non-status land uses are existing.

General Reference Features

- Existing Substation
- Proposed Switchyard/Substation
- Existing 345kV Transmission Line
- Existing 230kV Transmission Line
- Existing 138kV Transmission Line
- Existing 115kV Transmission Line
- Existing 46kV Transmission Line
- National Forest Boundary
- Updated Project Study Area Boundary
- County Boundary
- Interstate
- Highway
- Secondary Road
- Railroad
- River / Wash
- Township Boundary
- Section Boundary

Project Location



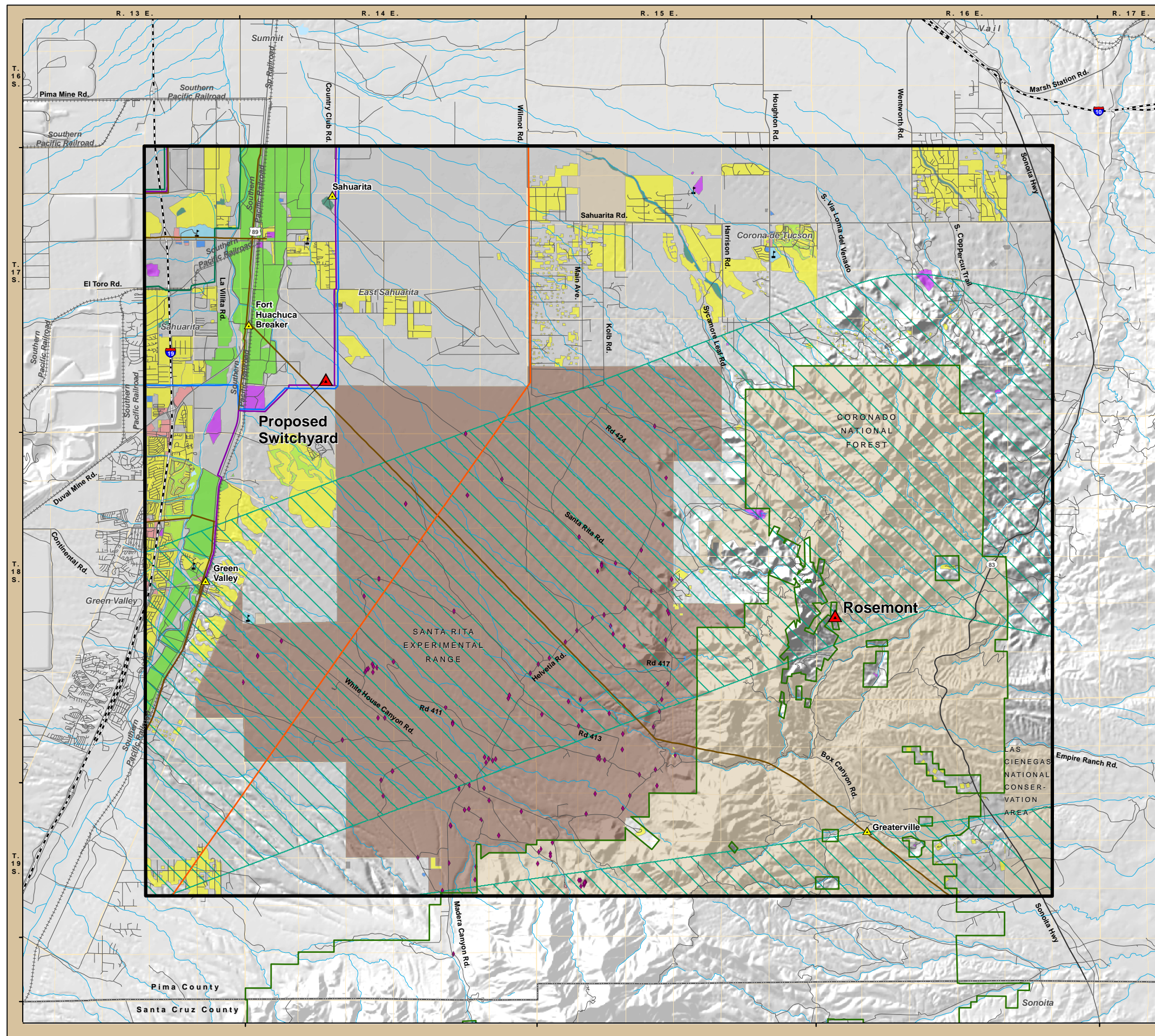
Sources

StreetMap USA 2008; TEP 2008; Sahuarita, 2008;
Houghton Area Master Plan, 2005;
EPG, 2008; Pima County, 2008.



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Rosemont 138kV Transmission Line Project Existing Land Use

Legend

Land Use

- Agriculture
 - Commercial
 - Industrial
 - Parks/Preservation
 - Public Land
 - Public/Quasi-Public
 - Recreation
 - Residential
 - Santa Rita Experimental Range
 - School/Educational Facilities
 - Utilities
 - Vacant/Undeveloped
- School
 - Santa Rita Experimental Range Photo Point Location
 - Military Low-level Training Flight Path

Note: Project study area boundary has been updated as of July 2009

General Reference Features

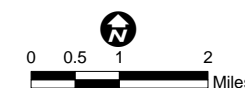
- Existing Substation
 - Proposed Switchyard/Substation
 - Existing 345kV Transmission Line
 - Existing 230kV Transmission Line
 - Existing 138kV Transmission Line
 - Existing 115kV Transmission Line
 - Existing 46kV Transmission Line
 - National Forest Boundary
 - Updated Project Study Area Boundary
- County Boundary
 - Interstate
 - Highway
 - Secondary Road
 - Railroad
 - River / Wash
 - Township Boundary
 - Section Boundary

Project Location



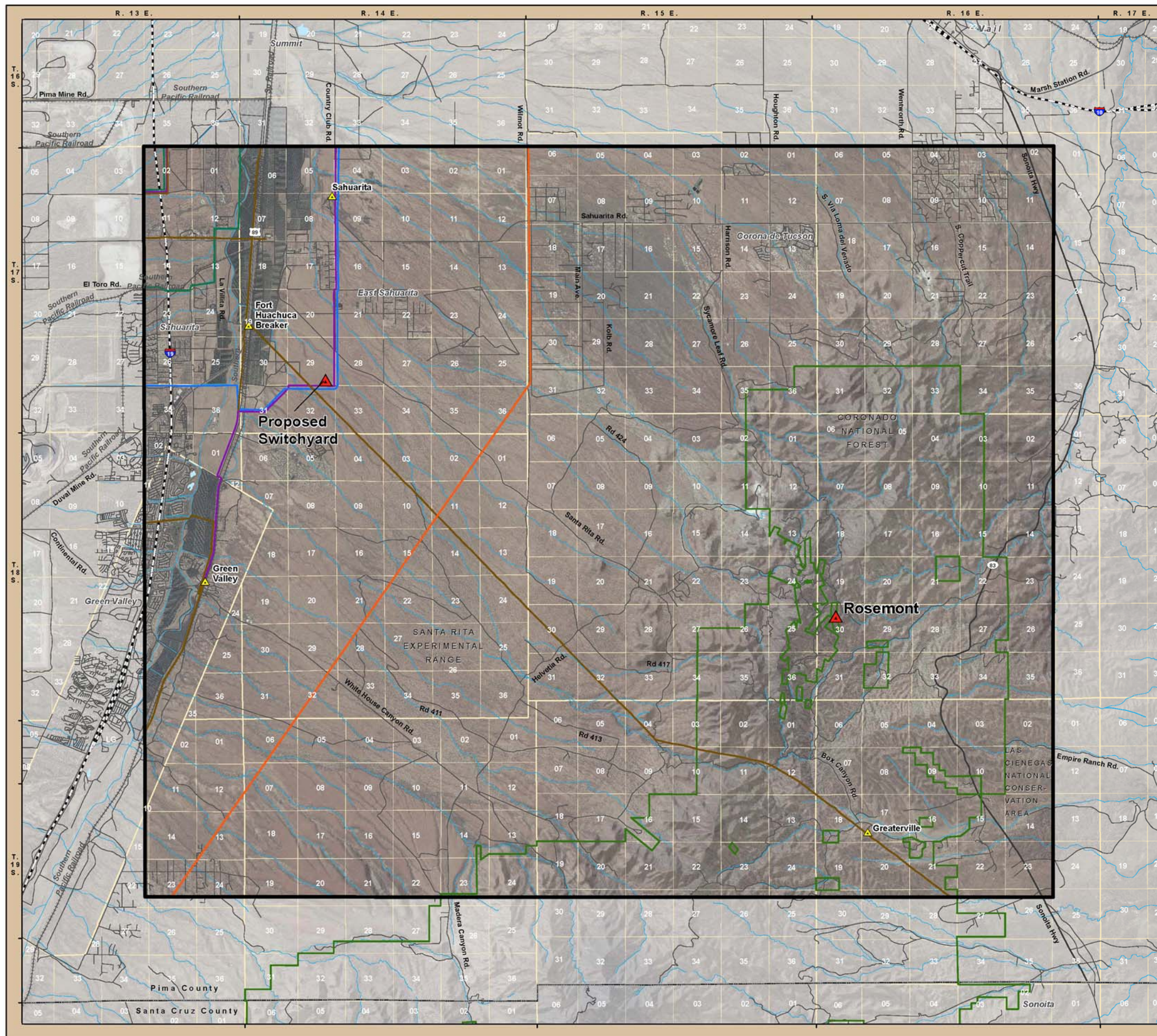
Sources

StreetMap USA 2008; TEP 2008;
University of Arizona, Santa Rita Experimental Range, 2009;
EPG 2008



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August 24, 2009





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Rosemont 138kV Transmission Line Project Aerial Imagery

Legend

Note: Project study area boundary has been updated as of July 2009

General Reference Features

- | | |
|-------------------------------------|-------------------|
| Existing Substation | County Boundary |
| Proposed Switchyard/Substation | Interstate |
| Existing 345kV Transmission Line | Highway |
| Existing 230kV Transmission Line | Secondary Road |
| Existing 138kV Transmission Line | Railroad |
| Existing 115kV Transmission Line | River / Wash |
| Existing 46kV Transmission Line | Township Boundary |
| National Forest Boundary | Section Boundary |
| Updated Project Study Area Boundary | |



Sources

StreetMap USA 2008; TEP 2008; EPG, 2008;
USA Prime Imagery, 2008



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ROSEMONT 138KV TRANSMISSION LINE SITING STUDY PROJECT

Public Open House Meeting #3

April 13, 2010 - Corona de Tucson

April 14, 2010 - Quail Creek

5:30pm – 8:30pm

Presentation and Question and Answer:

6:30pm – 7:00pm

April 13, 2010

Project Overview

- Tucson Electric Power (TEP), as a part of its obligation to serve, is proposing to construct and operate a new 138kV transmission line for the proposed Rosemont Copper operations
- Planning process – includes environmental studies and public input conducted to assist in identification and comparison of alternative transmission line routes and environmental impacts. Similar to any customer requesting service at the transmission voltage, Rosemont is paying for the transmission line siting study
- Project area – south of I-10 and east of I-19, with lands managed by Arizona State Land Department in conjunction with University of Arizona, Forest Service, Bureau of Land Management, and privately-owned lands under the planning jurisdictions of the Town of Sahuarita and Pima County
- Project requires review by the Arizona Corporation Commission's (ACC) Power Plant and Transmission Line Siting Committee resulting in a recommendation to, and a final determination by, the ACC prior to construction



Rosemont 138kV Transmission Line Project

April 13, 2010

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Purpose and Need

- Electric utilities are required by the State of Arizona to provide electrical service to customers upon request
- Rosemont Copper Company has requested TEP to provide electric power to the Rosemont Copper operations
- The primary purpose and need for the proposed transmission line is to provide adequate and reliable power for the proposed Rosemont Copper operations
- Currently, there are no existing transmission lines and substations to serve this proposed operation



Rosemont 138kV Transmission Line Project

April 13, 2010

3

Project Description

- Up to approximately 22 miles of 138kV transmission line
- A 500-foot-wide corridor will be requested, and within that corridor a 100-foot-wide right-of-way would be obtained
- Approximately 3+ acres of land for construction, operation, and maintenance for proposed Rosemont Substation, western-most switchyard/substation, Greaterville, Helvetia Road/46kV temporary interconnection
- Three connection points
 - New switchyard/substation for connection to TEP system
 - New Rosemont switchyard/substation at Rosemont operations
 - Greaterville Substation or temporary switchyard/substation interconnection (Helvetia Road & 46kV intersection) for construction power and possible long-term reliability purposes

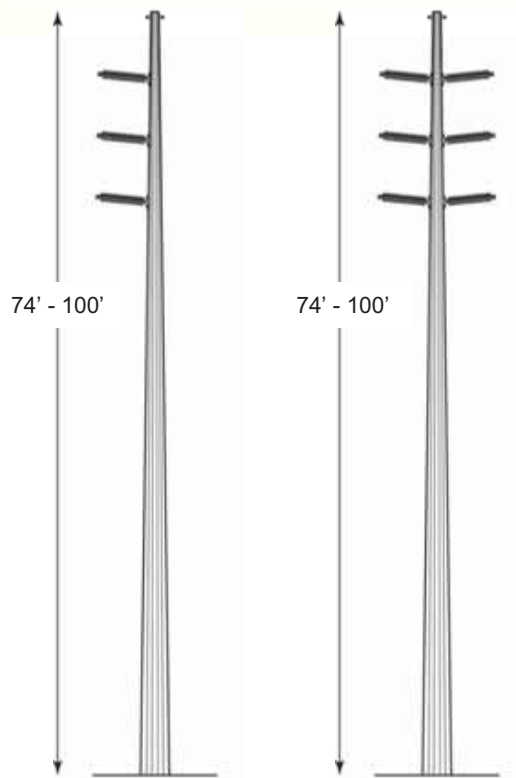


Rosemont 138kV Transmission Line Project

April 13, 2010

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Proposed Structure Type(s)



Rosemont 138kV Transmission Line Project

April 13, 2010

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Proposed Switchyard/Substation

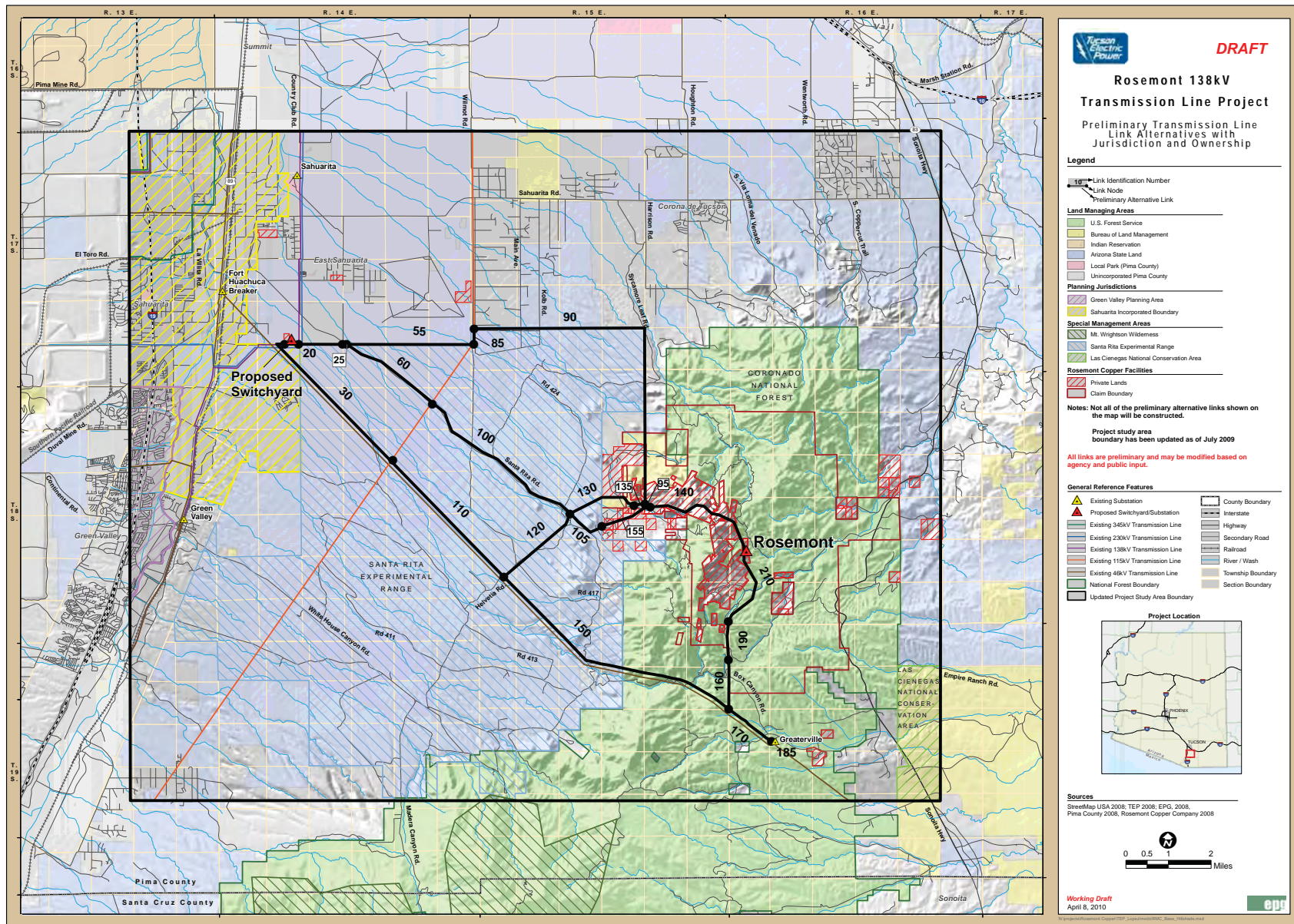
- Photograph is of a typical TEP switchyard that resembles the proposed switchyard/substation(s)
- Proposed facility for interconnection with the existing TEP transmission system
- Approximately 3+ acres in size
- Located on private land



Rosemont 138kV Transmission Line Project

April 13, 2010

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Planning Process

- Comprehensive planning process consisting of six key tasks. Studies include environmental and engineering analysis, along with agency/public input
- Identification and evaluation of alternatives that meet project purpose and need
- TEP will identify a preferred route(s) for permitting and construction, as well as alternative routes
- TEP will prepare and file a Certificate of Environmental Compatibility (CEC) application to be reviewed by the Arizona Power Plant and Transmission Line Siting Committee
- The Arizona Corporation Commission (ACC) will make a final decision to approve or deny the CEC application (with any conditions)

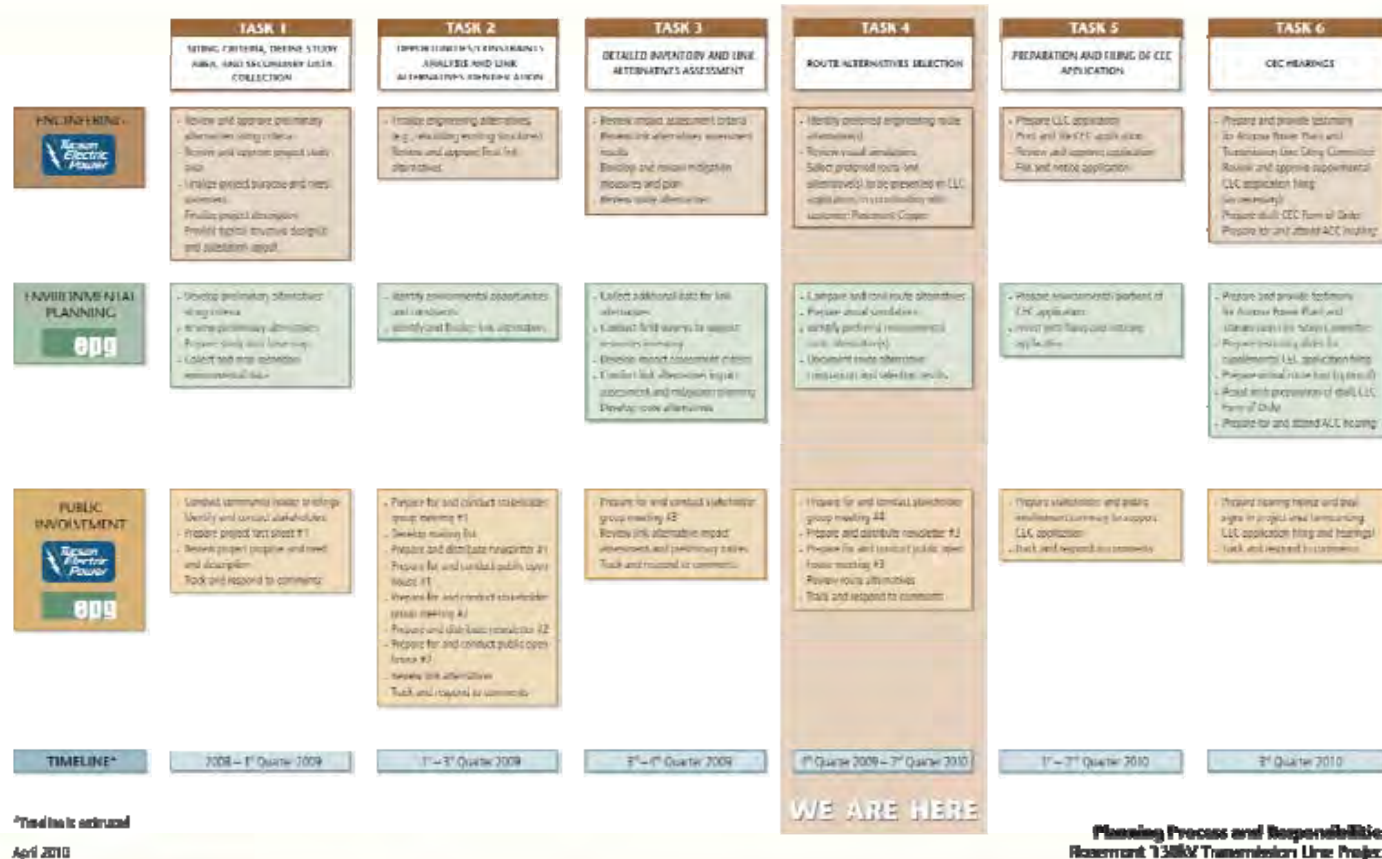


Rosemont 138kV Transmission Line Project

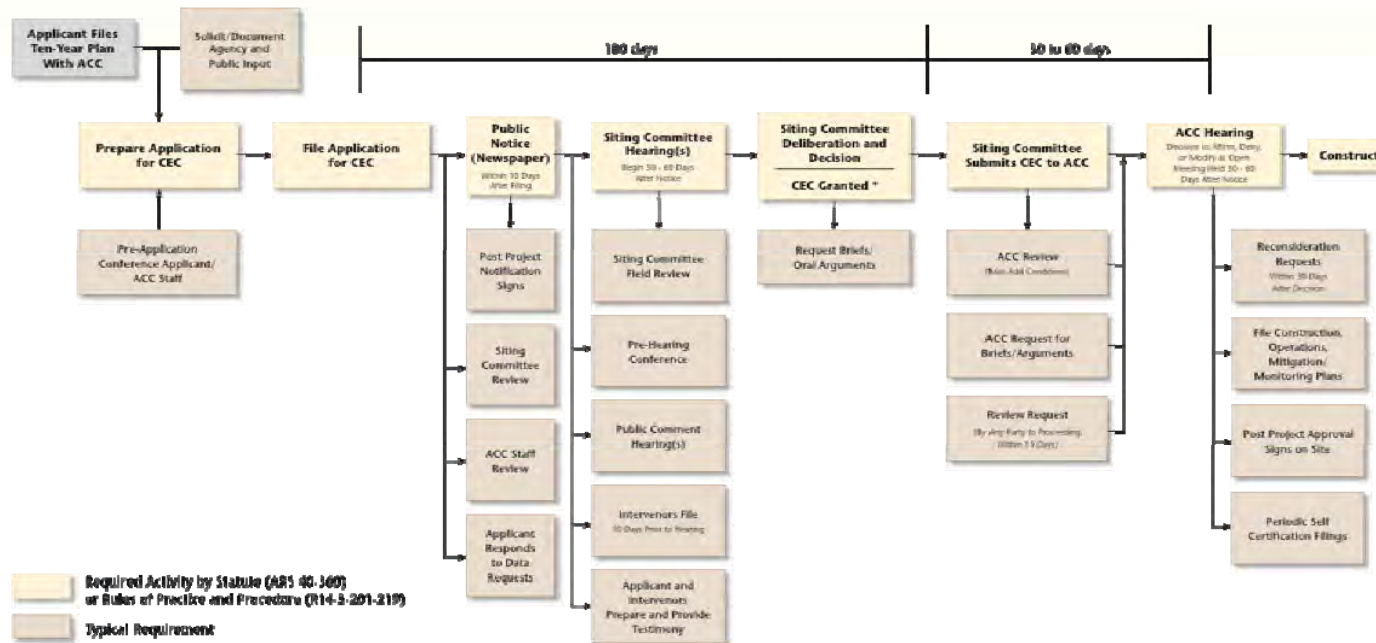
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Planning Process Chart



Certificate of Environmental Compatibility Application Process



* Decision within 180 days after receipt of application (R14-3-213), subject to extension

ACC: Arizona Corporation Commission
CEC: Certificate of Environmental Compatibility
Siting Committee: Arizona Power Plant & Transmission Line Siting Committee



April 2010



Arizona Power Plant and Transmission Line Siting Process
Certificate of Environmental Compatibility
Rosemont 138kV Transmission Line Project



Rosemont 138kV Transmission Line Project

April 13, 2010

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Key Considerations for Selection of Recommended Routes

- Project construction and operation power needs
- Minimizing environmental impacts
- Electrical system planning requirements and timeframes
- Engineering
 - Constructability
 - Cost
 - Right-of-way
- Public and agency input
- Regulatory permits
- One or more alternative routes may be carried forward in application for a CEC to be submitted to the Siting Committee and ACC



Rosemont 138kV Transmission Line Project

April 13, 2010

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Key Terms Defined

Right-of-way: land authorized to be used or occupied for the construction, operation, and maintenance of a linear facility

Corridor: a tract of land of varying width that allows the flexibility for a transmission line right-of-way to be located within to accommodate final engineering and environmental considerations

Link: short segment of a preliminary transmission line route between other intersecting segments

Link node: intersecting point where two links meet

Route or routes: series of links connecting the proposed switchyard and proposed Rosemont Substation and construction power source (e.g., Greaterville or Helvetia Rd./46kV)

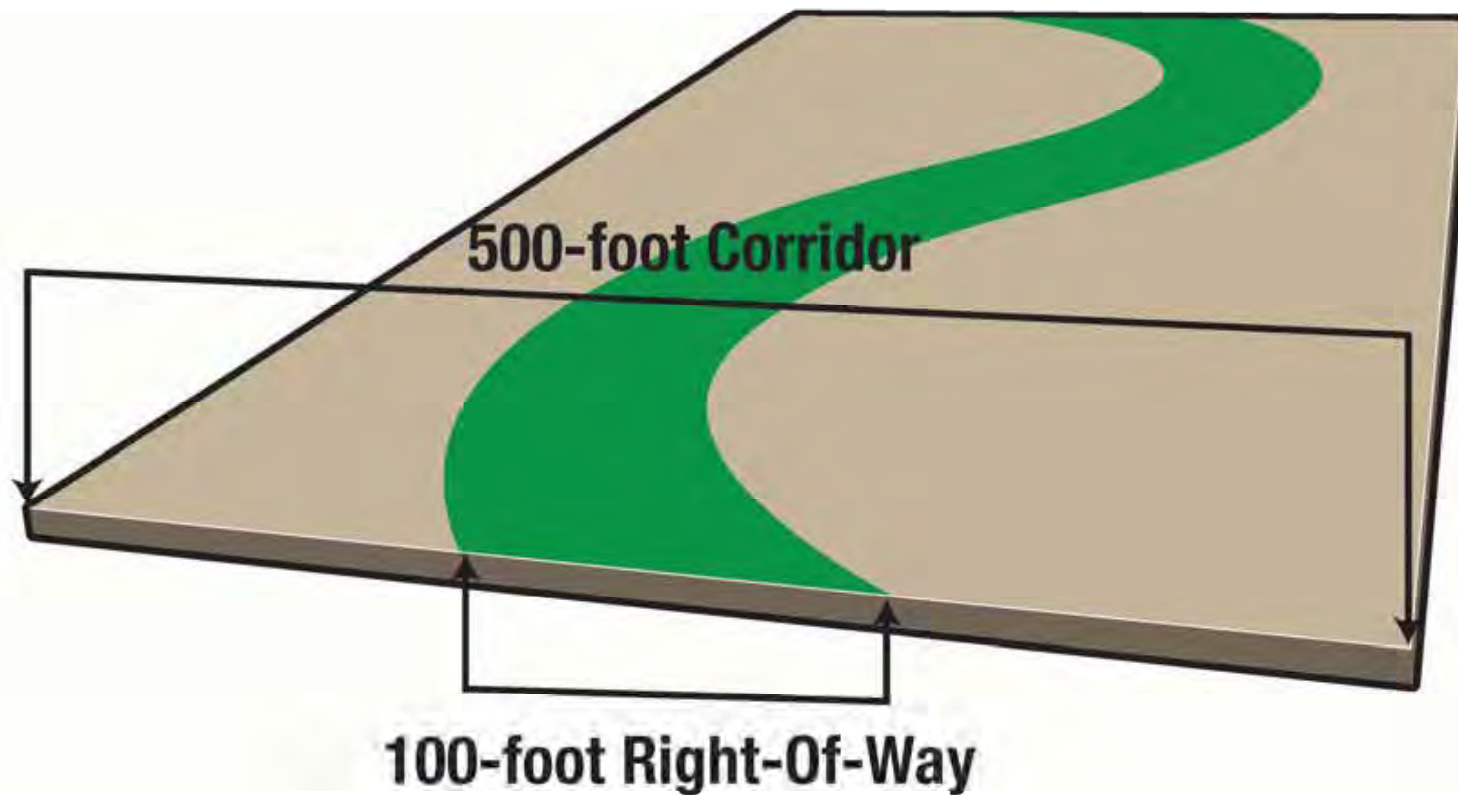


Rosemont 138kV Transmission Line Project

April 13, 2010

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Example Corridor and Right-of-Way Configuration



Rosemont 138kV Transmission Line Project

April 13, 2010

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Environmental Analysis Summary

Land use

- Existing land use
- Future land use

Visual resource

- Landscape scenic quality
- Sensitive viewers
(residences, roads/trails,
trailheads)
- Scenic management
guidelines

Cultural resource

- Known historic properties
considered
 - Eligible
 - Not eligible
 - Not evaluated

Biological resource

- Biological conservation
areas
- Vegetation
- Wildlife

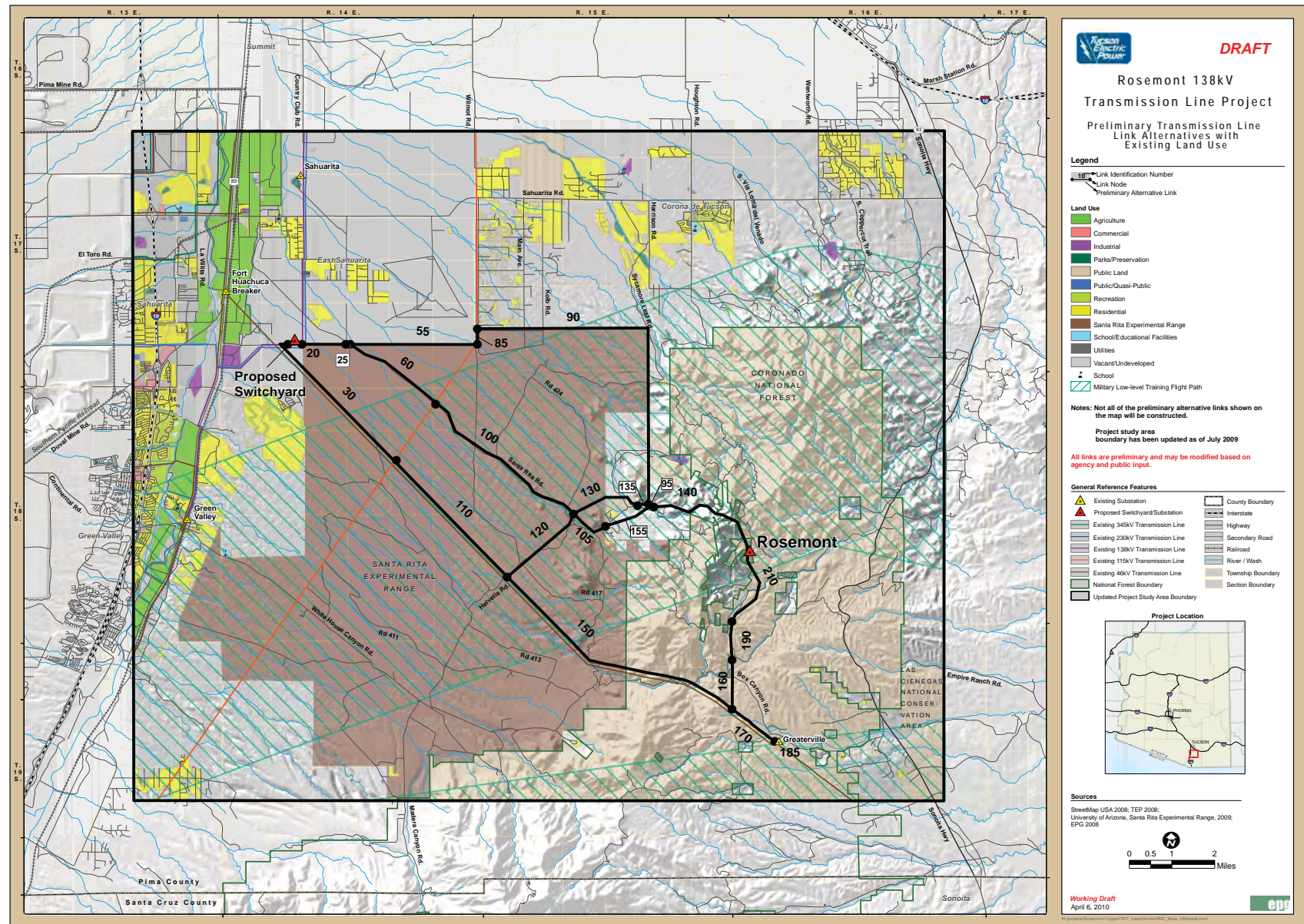


Rosemont 138kV Transmission Line Project

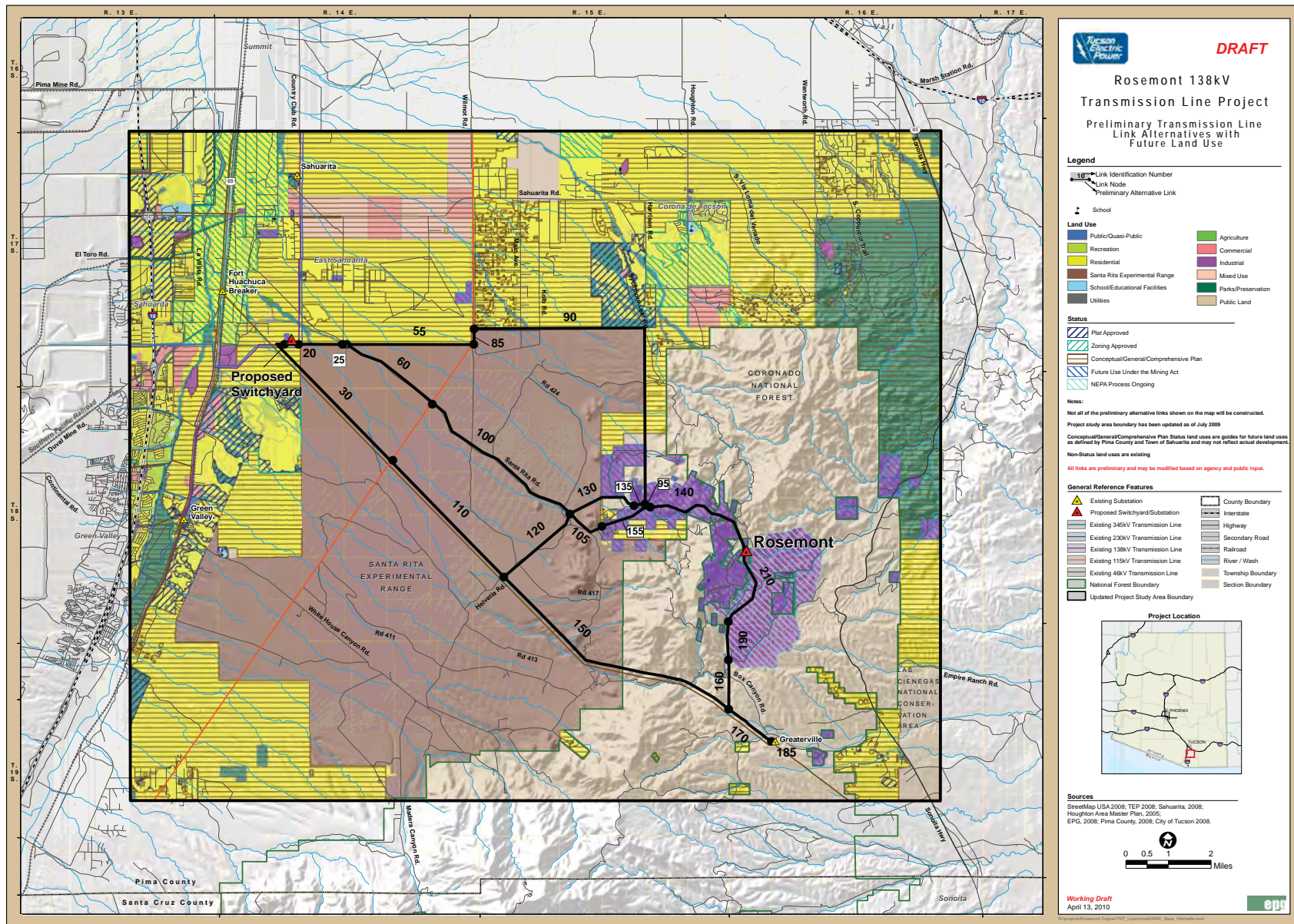
April 13, 2010

14

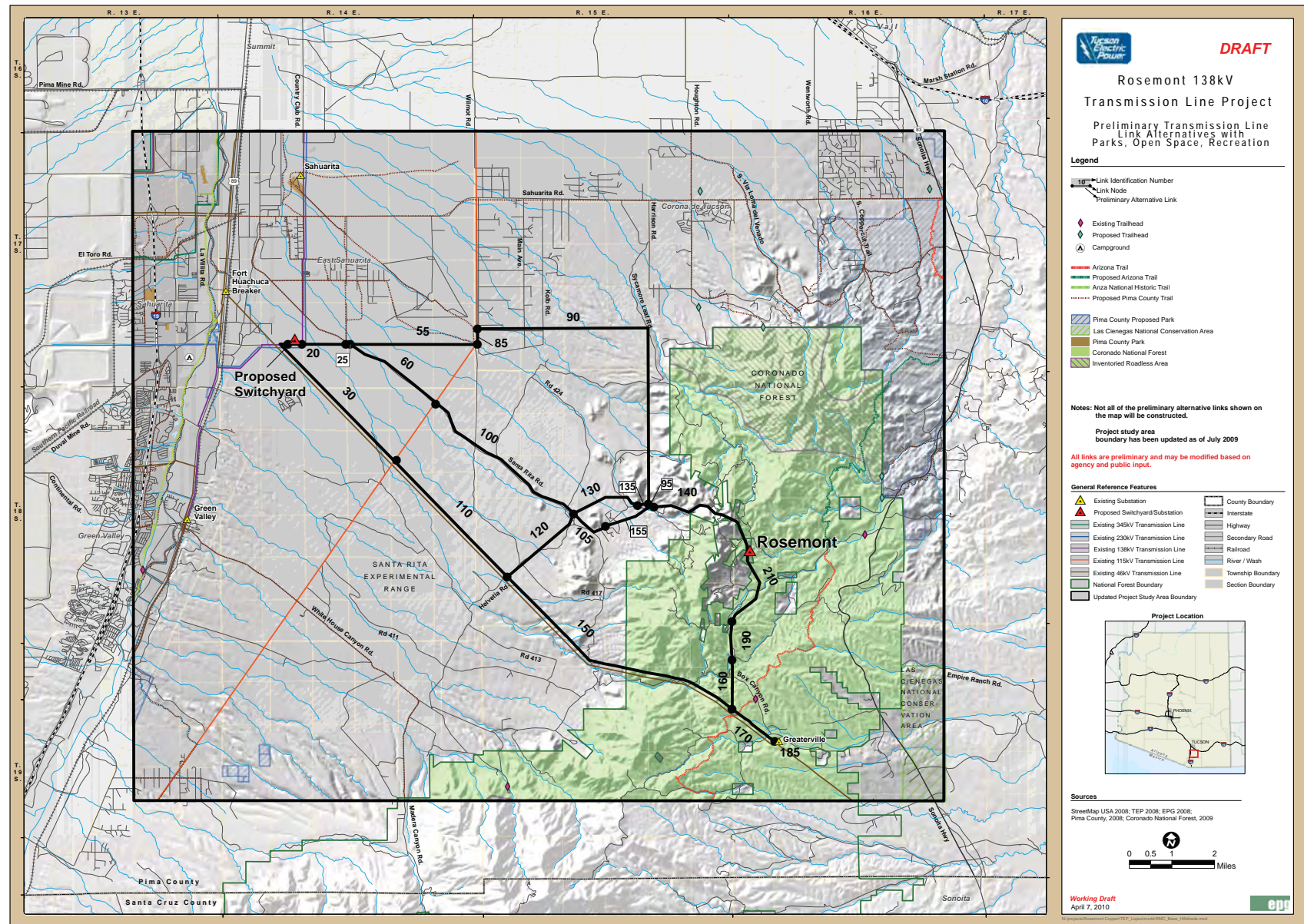
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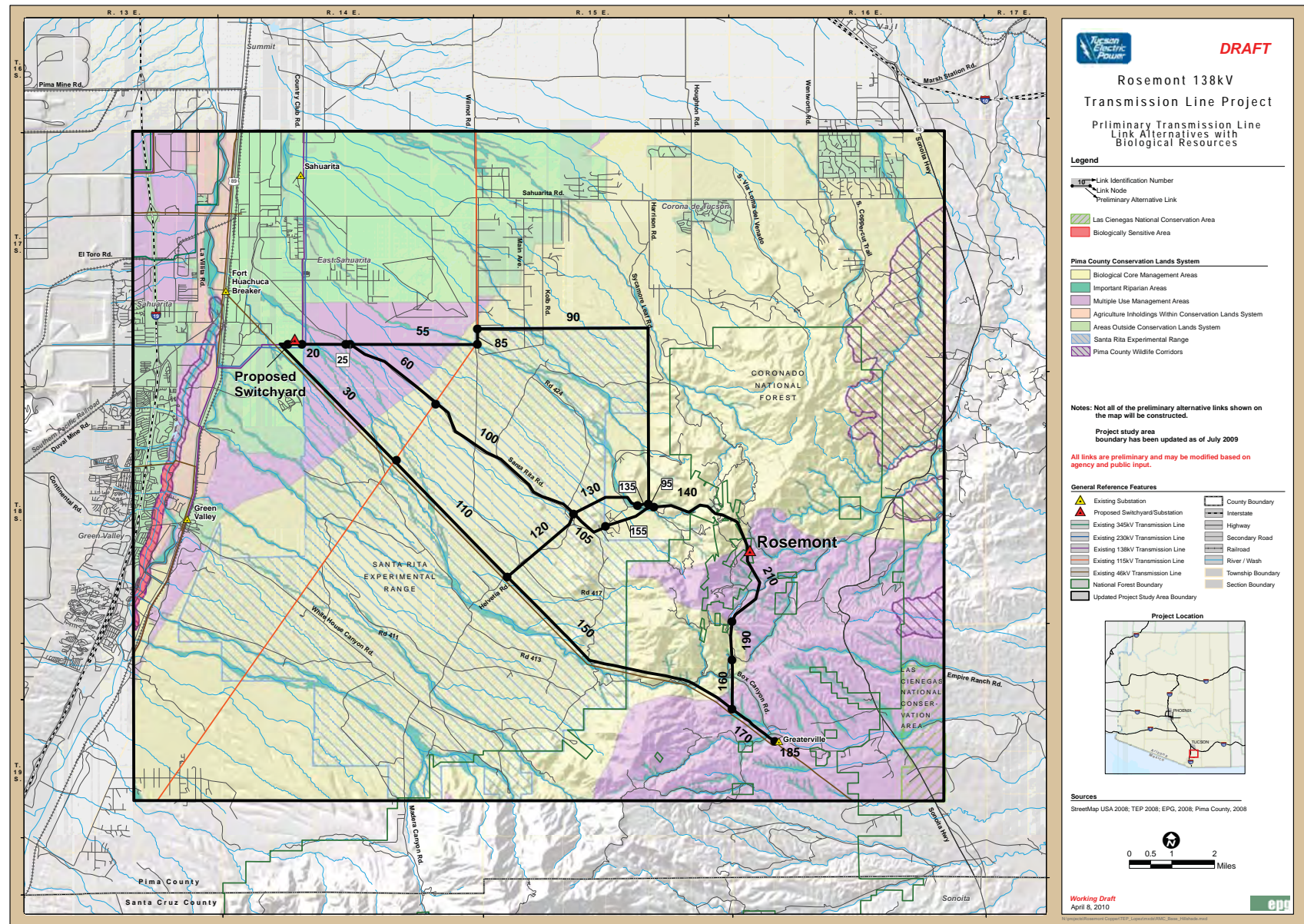
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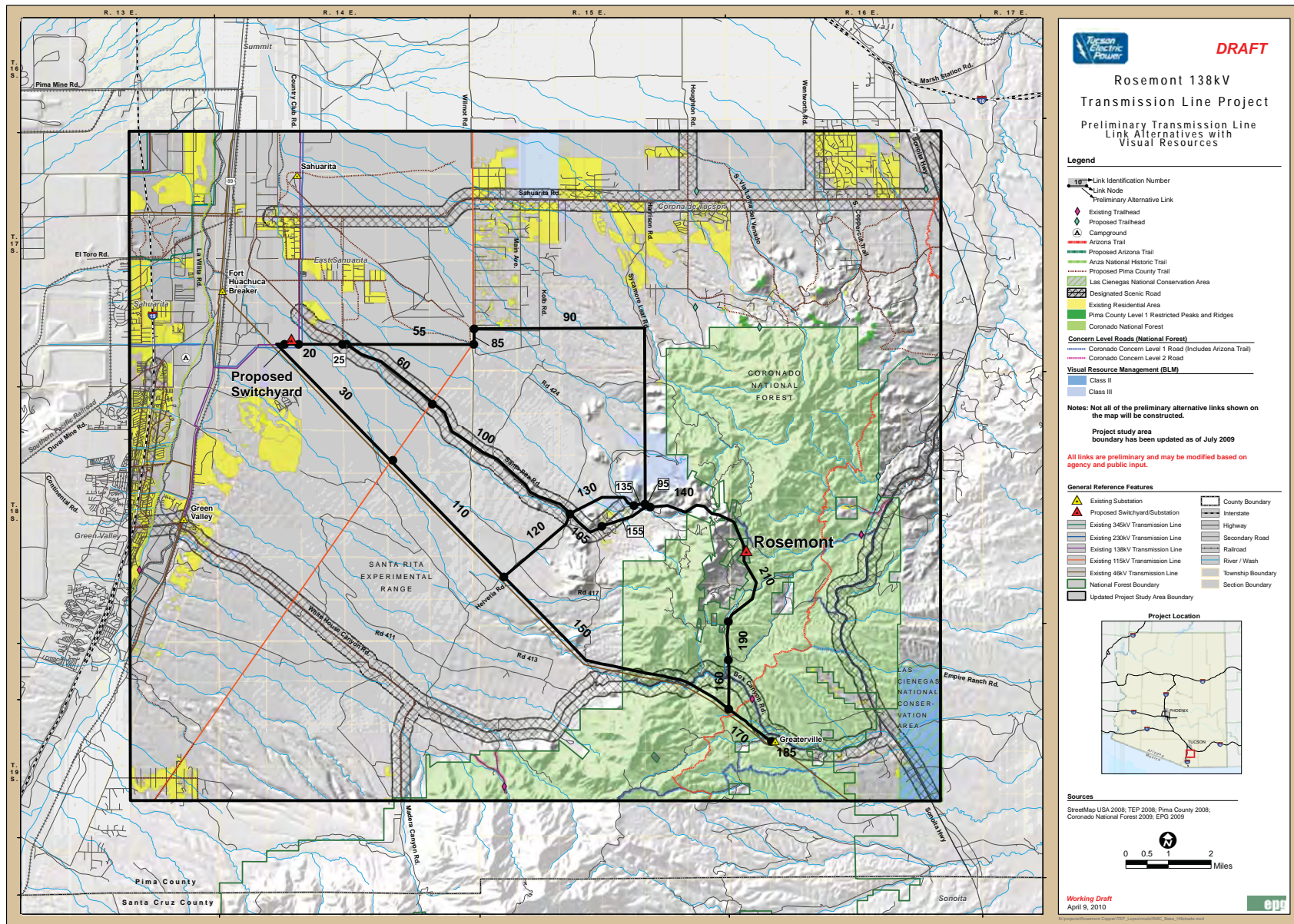
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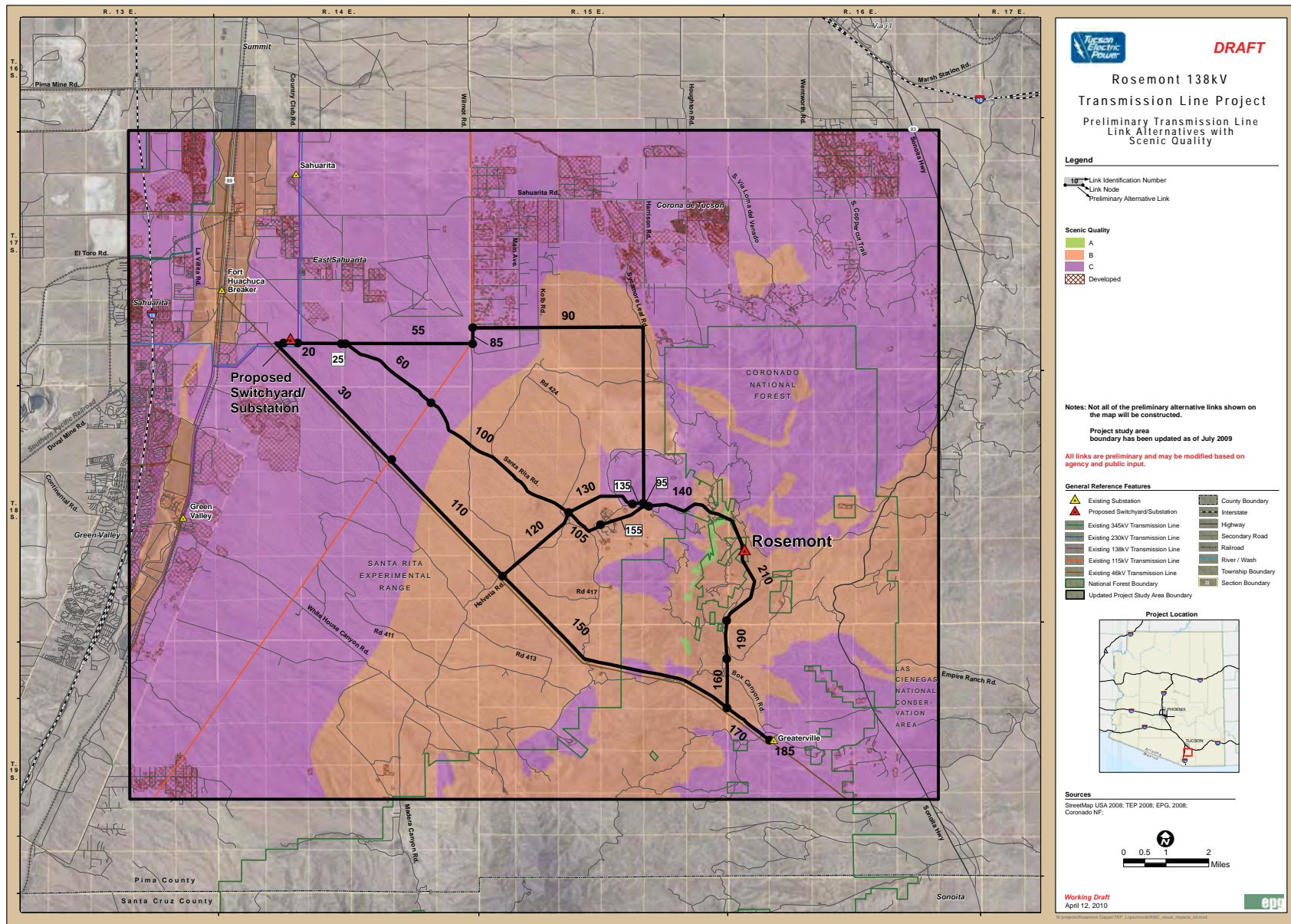
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University of Arizona's Santa Rita Experimental Range

- Established in 1902 and is considered the oldest experimental range in the U.S.
- Provides a unique scientific resource with an archive of repeat photos
- Consists of more than 80 square miles of grazed and ungrazed rangeland leased from the Arizona State Land Department

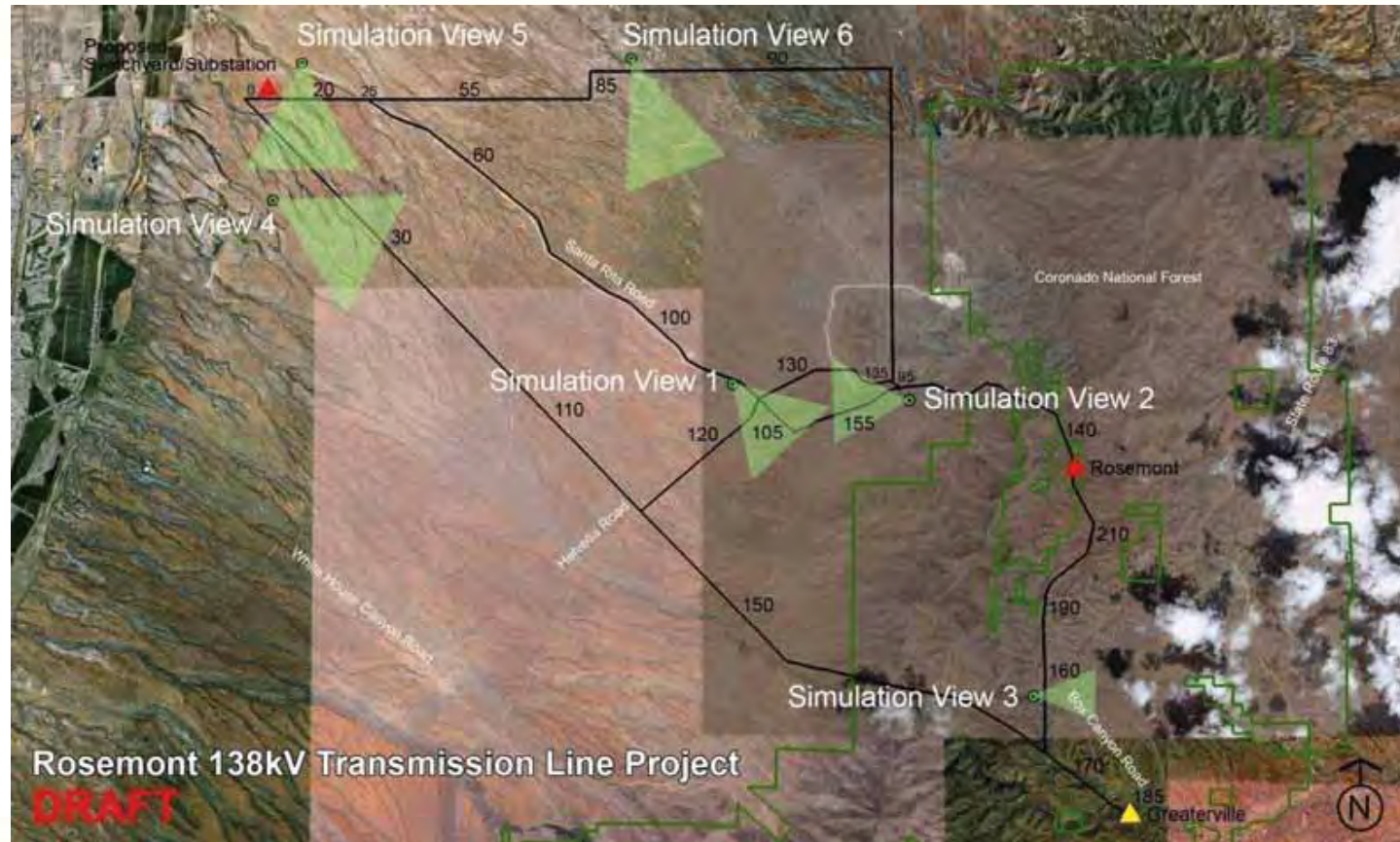


Rosemont 138kV Transmission Line Project

April 13, 2010

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Simulations



Rosemont 138kV Transmission Line Project

April 13, 2010

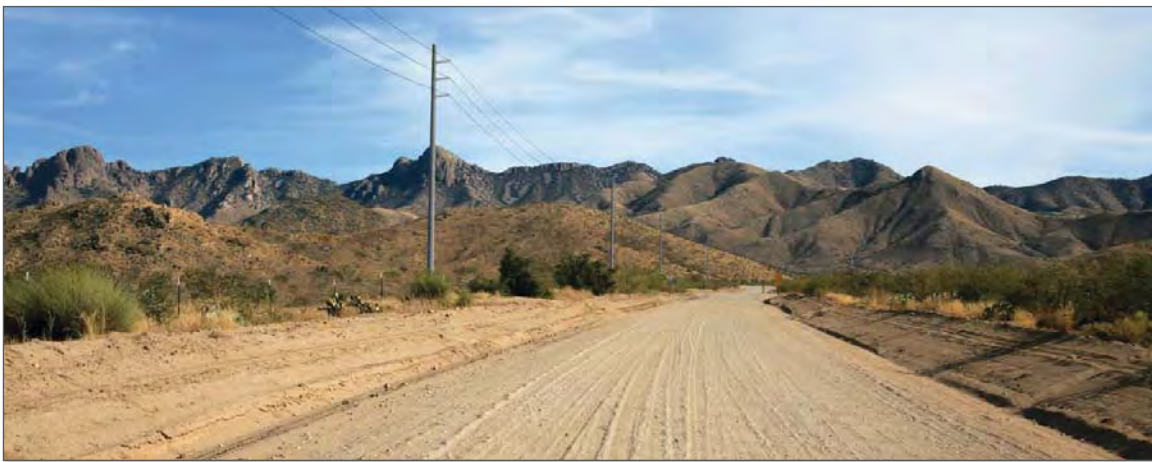
17



Existing Condition – Santa Rita Road within the Santa Rita Experimental Range



Simulated Condition – Proposed 138kV corten steel single-circuit transmission lines and water pipeline with shared access road



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission lines and water pipeline with shared access road



Photograph Location: Santa Rita Road Route facing southeast on Santa Rita Road.

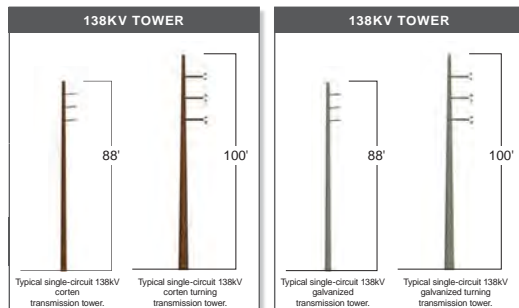


Photo Date and Time: 11-11-09, 2:14 p.m. Focal Length: 50mm

Structure models that were used in the simulations were created using diagrams provided by TEP. Pipeline information provided by Rosemont Copper.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.

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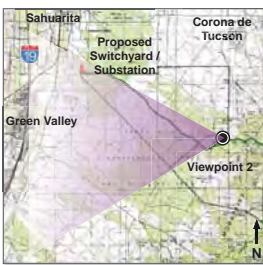
Existing Condition – Existing distribution lines and residences along Helvetia Road



Simulated Condition – Proposed 138kV corten steel single-circuit transmission line and water pipeline with shared access road



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission line and water pipeline with shared access road



Photograph Location: Viewing west off of Helvetia Road towards Green Valley, Arizona. Photo point is approximately 0.3 mile from nearest transmission line.

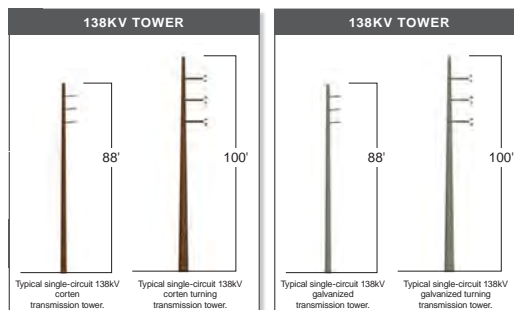


Photo Date and Time: 1-25-10, 10:50 a.m. Focal Length: 50mm

Structure models that were used in the simulations were created using diagrams provided by TEP. Pipeline information provided by Rosemont Copper.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.

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Existing Condition – Box Canyon Road within the Santa Rita Mountains



Simulated Condition – Proposed 138kV corten steel single-circuit transmission line



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission line



Photograph Location: Box Canyon facing east down Box Canyon Road.
Photo point is approximately 0.14 mile from nearest transmission line.

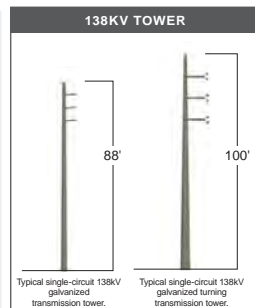
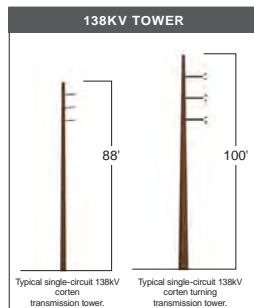


Photo Date and Time: 1-25-10, 12:59 p.m. Focal Length: 50mm

Structure models that were used in the simulations were created using diagrams provided by TEP.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.



**Rosemont Copper Transmission Line Project
Simulation 3 - Northern Route Family - Option 3
Santa Rita Road Route Family - Option 1, 3
Adjacent 46kV Route Family - Option 4, 6**

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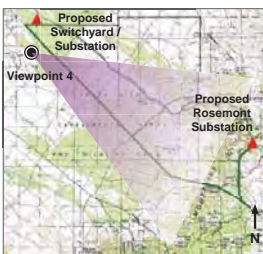
Existing Condition – Quail Creek Community Golf Course and existing 46kV transmission lines



Simulated Condition – Proposed consolidated 138kV corten steel double-circuit transmission line with co-located 46kV line



Simulated Condition – Proposed consolidated 138kV galvanized steel double-circuit transmission line with co-located 46kV line



Photograph Location: Viewing southeast off of Quail Creek Community Golf Course. Photo point is approximately 0.9 mile from nearest transmission line.

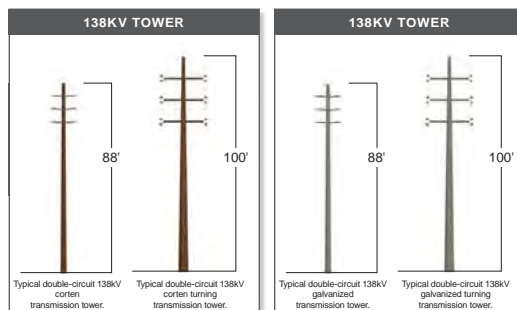


Photo Date and Time: 2-18-10, 2:37 p.m. Focal Length: 50mm

Structure models that were used in the simulations were created using diagrams provided by TEP.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.

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Existing Condition – Sahuarita Highlands residences along East Broadwater Way, Santa Rita Road, and Santa Rita Mountains



Simulated Condition – Proposed 138kV corten steel single-circuit transmission lines



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission lines



Photograph Location: Facing south from Sahuarita Highlands on East Broadwater Way towards Santa Rita Road. Photo point is approximately 0.50 mile from nearest transmission line.

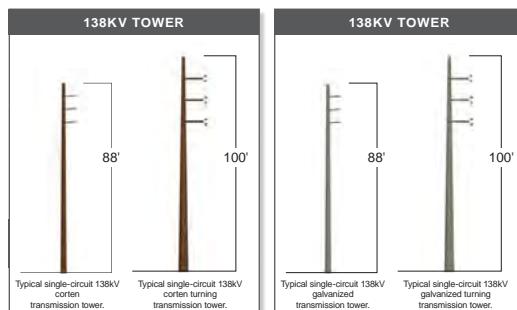


Photo Date and Time: 1-26-10, 11:45 a.m. Focal Length: 50mm

Structure models that were used in the simulations were created using diagrams provided by TEP.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.

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Existing Condition – Residences near Corona de Tucson, north of S. Kolb Road with views of the Santa Rita Experimental Range and Santa Rita Mountains



Simulated Condition – Proposed 138kV corten steel single-circuit transmission line



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission line



Photograph Location: Viewing southeast from residences, north of S. Kolb Road, towards the Santa Rita Mountains. Photo point is approximately 0.2 mile from nearest transmission line.

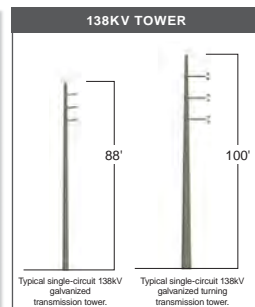
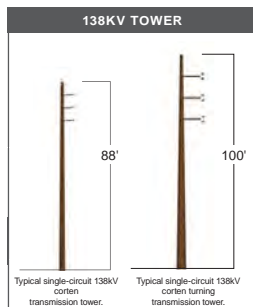


Photo Date and Time: 1-26-10, 1:19 p.m. Focal Length: 50mm

Structure models that were used in the simulations were created using diagrams provided by TEP.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.



**Rosemont Copper Transmission Line Project
Simulation 6 - Northern Route Family
Option 3**

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Alternative Route Families (Groups)

- Northern Route – generally follows northern boundary and a portion of eastern boundary of Santa Rita Experimental Range
- Santa Rita Road – generally follows Santa Rita Road alignment
- Adjacent 46kV line – generally follows existing 46kV power line alignment



Rosemont 138kV Transmission Line Project

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NORTH ROUTE FAMILY – ROSEMONT 138KV PROJECT ALTERNATIVE ROUTES COMPARISON SUMMARY

DRAFT 4-13-10

Alternative Routes	Links Included	Approximate Length (in miles)		Environmental	Engineering/Constructability	Mine Operations	Agency/Jurisdiction/Stakeholder Group Comments (received to date)	Public Comments	Comments
		Permanent	Temporary						
3	20, 25, 55, 85, 90, 95, 140, 170, 160, 190, 210	20.95	n/a	<ul style="list-style-type: none"> Primarily requires new access (may create additional trespass onto Santa Rita Experimental Range) New access creates disturbance to vegetation and wildlife resources Shared route with pipeline corridor along link 140 Adjacent to residences primarily along link 90 Requires new right-of-way from private and Arizona State Land Department Links 190 and 210 would be located within proposed mine plan of operations boundary Requires new access for a portion of link 160 	<ul style="list-style-type: none"> Access to links 160, 170, 190 and 210 was assumed to be by building spurs off of Box Canyon Road Link 95 and 140 require major improvement to existing access road Most of these links are in mountainous areas and will require special foundations Majority of these links reflect slow climbing access, therefore, they will require additional construction time and cost more, accordingly Also, links 160 and 190 reflect construction from mountain peaks to mountain peaks. This will be very time consuming from construction perspective and requires heavier structures Several very heavy angle structures will be required 	<p>Generally, North routes are not preferred due to the longer distance (schedule & cost). The preferred of the North Route Family is Route 3.</p> <p>Pros:</p> <ul style="list-style-type: none"> Redundancy - 2 lines into plant providing critical backup power in case of primary line loss Line for construction power would take less time to build <p>Cons:</p> <ul style="list-style-type: none"> Does not follow pipeline route so there are no shared access points 	<p>Second most preferable by Santa Rita Experimental Range</p> <p>Not supported by Town of Sahuarita</p> <p>Davis-Monthan airspace management considers this 2nd most compatible route</p>		
8	20, 25, 55, 85, 90, 95, 140, 120*, 130*, 135*	15.62	4.11	<ul style="list-style-type: none"> Primarily requires new access (may create additional trespass onto Santa Rita Experimental Range) New access creates disturbance to vegetation and wildlife resources Shared route with pipeline corridor along link 140 Adjacent to residences primarily along link 90 Requires new right-of-way from private and Arizona State Land Department Link 120 disturbs several repeat photograph sites Link 130 requires new access and avoids residences in the vicinity of links 105 and 155 	<ul style="list-style-type: none"> Access to links 120, 130, 135 was assumed to be off existing roads such as Helvetia with spurs built off of them Link 95 and 140 require major improvement to existing access road Links 95 and 140 are in mountainous areas and will require special foundations Links 140 and 95 will be slow climbing access, therefore, they will require additional construction time and will cost more accordingly There are also several very heavy angle structures 	<p>Not Preferred</p> <p>Pros: not specified</p> <p>Cons:</p> <ul style="list-style-type: none"> Links 120, 130, 135 are temporary and provide no valuable connection to system in future Line for construction power would require 2 additional months to build Does not follow pipeline route so there are no shared access points 	<p>Not supported by Santa Rita Experimental Range</p> <p>Link 120 is not supported by Santa Rita Experimental Range</p> <p>Not supported by Town of Sahuarita</p>		
10	20, 25, 55, 85, 90, 95, 140, 120*, 105*, 155*	15.62	4.38	<ul style="list-style-type: none"> Primarily requires new access (may create additional trespass onto Santa Rita Experimental Range) New access creates disturbance to vegetation and wildlife resources Shared route with pipeline corridor along link 140, 105, and 155 Adjacent to residences primarily along links 90, 105, and 155 Requires new right-of-way from private and Arizona State Land Department Link 120 disturbs several repeat photograph sites 	<ul style="list-style-type: none"> Access to link 105, 155 and 120 was assumed to be off of existing roads such as Helvetia road with spurs built off of these Link 95 and 140 require major improvement to existing access road Links 95 and 140 are in mountainous areas and will require special foundations These links also reflect slow climbing access over rocky terrain, therefore, construction will take longer and cost more There are also several very heavy angle structures 	<p>Not Preferred</p> <p>Pros:</p> <ul style="list-style-type: none"> If Link 120 is used, links 105, 155 are preferable over 130,135 due to less turns/dead-end structures and the structures along 155 can be placed on private rather than public land <p>Cons:</p> <ul style="list-style-type: none"> Links 120, 105, 155 are temporary and provide no valuable connection to system in future. Line for construction power would require 2 additional months to build Does not follow pipeline route so there are no shared access points 	<p>Not supported by Santa Rita Experimental Range</p> <p>Link 120 is not supported by Santa Rita Experimental Range</p> <p>Not supported by Town of Sahuarita</p>		
*Temporary interconnection for construction power and will be removed once the 138kV transmission line for operation power is constructed									

SANTA RITA ROUTE FAMILY – ROSEMONT 138KV PROJECT ALTERNATIVE ROUTES COMPARISON SUMMARY

DRAFT 4-13-10

Alternative Routes	Links Included	Approximate Length (in miles)		Environmental	Engineering/Constructability	Mine Operations	Agency/Jurisdiction/Stakeholder Group Comments (received to date)	Public Comments	Comments
1	20, 25, 60, 100, 105, 155, 140, 170, 160, 190, 210	18.24	n/a	<ul style="list-style-type: none"> Shared route with pipeline corridor, existing access for majority of the route New access creates disturbance to vegetation and wildlife resources Requires new access for a portion of link 160 Links 190 and 210 would be located within proposed mine plan of operations boundary Nearby residences primarily along links 105 and 155 Santa Rita Road is designated as scenic by Pima County (February 2010) Forest Service Concern Level 1 roads (i.e., Box Canyon Road) crossed by link 160 	<ul style="list-style-type: none"> Links 160, 190, 140, and 210 will require special foundations in rocky terrain Access to links 160, 170 and 190 was assumed to consist of spurs off of Box Canyon Road Major improvements to access roads for links 95 and 140 will be required Links 60, 100, 105 and 155 will be accessed off of Santa Rita Road Most of these links consist of slow going heavily sloped roads which result in longer construction time and cost Construction along links 160, 190 and 170 consist of mountain peak to mountain peak links that are both time consuming and difficult to build and will involve heavy structures 	<p>Generally, Santa Rita Road Family routes are preferred due to the more direct route and ability to provide electrical distribution services to the water wells and booster stations.</p> <p>The preferred of the Santa Rita Road Route Family is Option 1.</p> <p>Pros:</p> <ul style="list-style-type: none"> Redundancy - 2 lines into plant providing critical backup power in case of primary line loss Line for construction power would take less time to build. Power would be available when needed Links 105, 155 are preferable over 130,135 due to less turns/dead-end structures, and the structures along 155 can be placed on private rather than public lands Shared access to pipeline corridor <p>Cons: not specified</p>	<p>Most preferred by Santa Rita Experimental Range</p> <p>Supported by Arizona State Land Department</p> <p>Not supported by Town of Sahuarita</p> <p>Davis-Monahan airspace management considers this 1st most compatible route</p>		
3	20, 25, 60, 100, 130, 135, 95, 140, 170, 160, 190, 210	18.12	n/a	<ul style="list-style-type: none"> Shared route with pipeline corridor for majority of the route New access creates disturbance to vegetation and wildlife resources Link 130 requires new access and avoids residences in the vicinity of links 105 and 155 Requires new access for a portion of link 160 Links 190 and 210 would be located within proposed mine plan of operations boundary Santa Rita Road is designated as scenic by Pima County (February 2010) Forest Service Concern Level 1 roads (i.e., Box Canyon Road) crossed by link 160 	<ul style="list-style-type: none"> Links 160, 190, 140, and 210 will require special foundations in rocky terrain Access to links 160, 170 and 190 was assumed to consist of spurs off of box canyon road Major improvements to access roads for link 140 will be required Links 60 and 100 will be accessed off of Santa Rita Road Most of these links consist of slow going heavily sloped roads which result in longer construction time and cost Construction along links 160, 190 and 170 consist of mountain peak to mountain peak links that are both time consuming and difficult to build and will require heavy structures 	<p>Pros:</p> <ul style="list-style-type: none"> Redundancy - 2 lines into plant providing critical backup power in case of primary line loss Line for construction power would take less time to build. Power would be available when needed <p>Cons:</p> <ul style="list-style-type: none"> Links 130,135 require more turns and dead-end structures than links 105, 155 	<p>Supported by Santa Rita Experimental Range</p> <p>Supported by Arizona State Land Department</p> <p>Not supported by Town of Sahuarita</p>		
7	20, 25, 60, 100, 105, 155, 140, 120*	12.91	2.18	<ul style="list-style-type: none"> Shared route with pipeline corridor with existing access for majority of the route New access creates disturbance to vegetation and wildlife resources Requires new access for a portion of link 120 Nearby residences primarily along links 105 and 155 Link 120 disturbs several repeat photographs sites Santa Rita Road is designated as scenic by Pima County (February 2010) 	<ul style="list-style-type: none"> Link 140 will require special foundations in rocky terrain Major improvements to access roads for link 140 will be required Links 60, 100 and 105 will be accessed off of Santa Rita Road Access to link was assumed to be off of Helvetia Road Link 140 consists of slow going heavily sloped roads which result in longer construction time and cost 	<p>Pros:</p> <ul style="list-style-type: none"> Links 105, 155 are preferable over 130,135 due to less turns/dead-end structures and the structures along 155 can be placed on private rather than public lands Shared route with the pipeline corridor <p>Cons:</p> <ul style="list-style-type: none"> Line for temporary construction power would require 2 additional months 1 to build power is not available when needed Links 120 is temporary and provides no valuable connection to system in future 	<p>Not supported by Santa Rita Experimental Range</p> <p>Link 120 is not supported by Santa Rita Experimental Range</p> <p>Not supported by Town of Sahuarita</p> <p>Citizen member of Stakeholder Group – supports this route</p>		
9	20, 25, 60, 100, 130, 135, 95, 140, 120*	12.79	2.18	<ul style="list-style-type: none"> Shared route with pipeline corridor, existing access for majority of the route New access creates disturbance to vegetation and wildlife resources Link 130 requires new access and avoids residences in the vicinity of links 105 and 155 Requires new access for a portion of link 120 Link 120 disturbs several repeat photographs sites Santa Rita Road is designated as scenic by Pima County (February 2010) 	<ul style="list-style-type: none"> Links 140 and 95 will require special foundations in rocky terrain. Road improvements will be required along links 95 and 140 Links 95 and 140 consist of slow going heavily sloped roads that will extend construction time and cost. Access to links 60 and 100 are assumed to be off of Santa Rita Road Access to link 120, 130 and 135 was assumed off of Helvetia Road 	<p>Pros:</p> <ul style="list-style-type: none"> Shared route with the pipeline corridor <p>Cons:</p> <ul style="list-style-type: none"> Line for construction power would require 2 additional months to build power not available when needed Link 120 is temporary and provides no valuable connection to system in future Links 130,135 require more turns and dead-end structures than links 105, 155 	<p>Not supported by Santa Rita Experimental Range</p> <p>Link 120 is not supported by Santa Rita Experimental Range</p> <p>Not supported by Town of Sahuarita</p> <p>Citizen member of Stakeholder Group – supports this route</p>		

*Temporary interconnection for construction power and will be removed once the 138kV transmission line for operation power is constructed

ADJACENT 46KV ROUTE FAMILY – ROSEMONT 138KV PROJECT ALTERNATIVE ROUTES COMPARISON SUMMARY

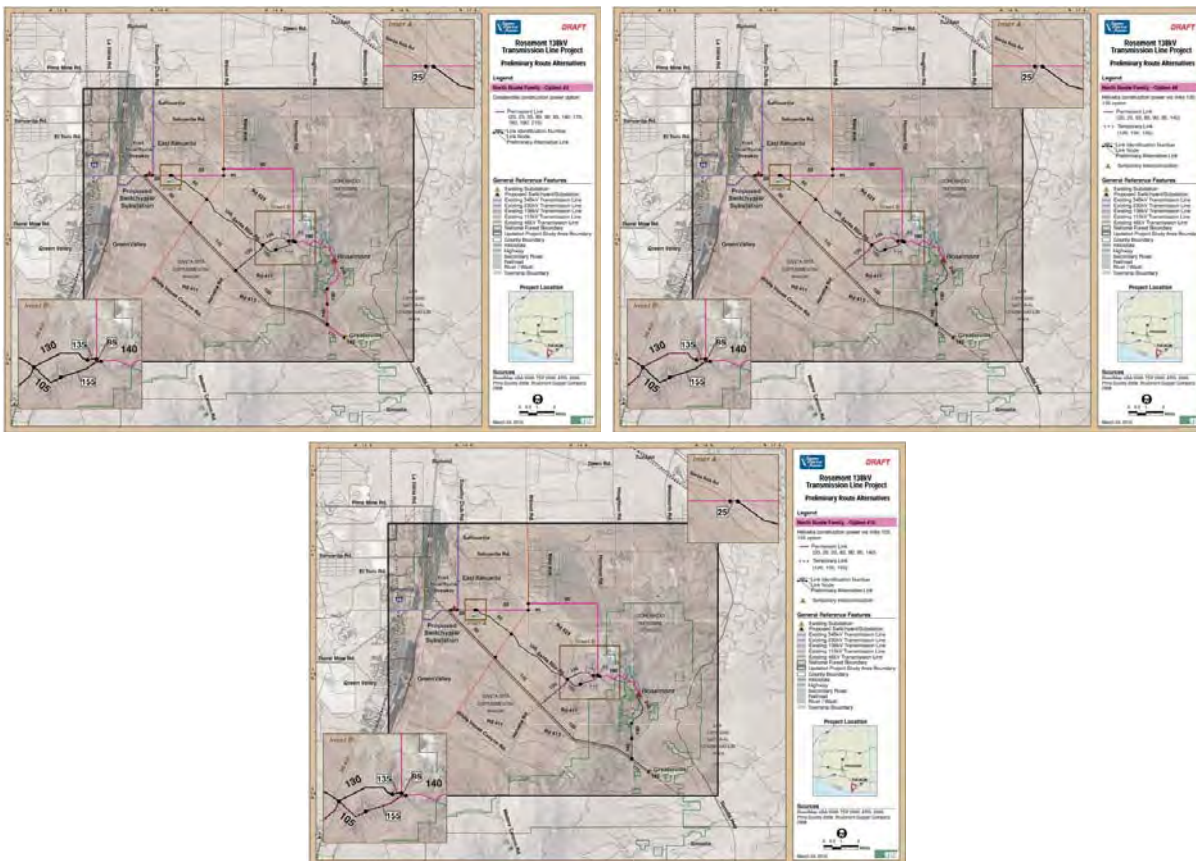
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Alternative Routes	Links Included	Approximate Length (in miles)		Environmental	Engineering/Constructability	Mine Operations	Agency/Jurisdiction/Stakeholder Group Comments (received to date)	Public Comments	Comments
1	30, 110, 120, 105, 155, 140	15.06	n/a	<ul style="list-style-type: none"> • Adjacent to existing 46kV transmission line and would require access upgrade for a portion of the route • Shared route with pipeline corridor for links 105, 155, 140 • New access creates disturbance to vegetation and wildlife resources • Requires new access for a portion of link 120 • Link 120 disturbs several repeat photographs sites • Nearby residences primarily along links 105 and 155 	<ul style="list-style-type: none"> • Link 140 will require special foundations in rocky terrain • Link 140 will be slow traveling and will take longer to construct • Access road improvement to link 140 will be required • Links 30, 110 will require improvement to existing access road • Access to link 120, 105 and 155 were assumed off of Helvetia or other existing roads 	<p>Pros:</p> <ul style="list-style-type: none"> • Links 130,135 require more turns and dead-end structures than links 105, 155 <p>Cons:</p> <ul style="list-style-type: none"> • Personnel safety risks and possible multiple outages required when installing a 138kV line with the 46kV line • Line for construction power would require 2 additional months to build, power not available when needed • This route does not follow the pipeline corridor so there is no shared access 	<p>Not supported by Santa Rita Experimental Range</p> <p>Link 120 is not supported by Santa Rita Experimental Range</p> <p>Citizen member of Stakeholder Group – supports this route</p>		
2	30, 110, 120, 130, 135, 95, 140	14.94	n/a	<ul style="list-style-type: none"> • Adjacent to existing 46kV transmission line and would require access upgrade for a portion of the route • Shared route with pipeline corridor for link 140 • New access creates disturbance to vegetation and wildlife resources • Requires new access for a portion of link 120 • Link 120 disturbs several repeat photographs sites • Link 130 requires new access and avoids residences in the vicinity of links 105 and 155 	<ul style="list-style-type: none"> • Links 95 and 140 will require special foundations in rocky terrain • Access road improvement to links 95 and 140 will be required • Existing access road improvements will be required for links 30 and 110 • Links 95 and 140 consist of slow going heavily sloped roads, which will take longer to construct and cost more • Access to links 120, 130 and 135 was assumed to be off of Helvetia Road 	<p>Pros: not specified</p> <p>Cons:</p> <ul style="list-style-type: none"> • Personnel safety risks and possible multiple outages required when installing a 138kV line with the 46kV line • Links 130,135 require more turns and dead-end structures than Links 105, 155 • Line for construction power would require 2 additional months to build, power not available when needed • This route does not follow the pipeline corridor so there is no shared access 	<p>Not supported by Santa Rita Experimental Range</p>		
4	30, 110, 150, 170, 160, 190, 210	19.49	n/a	<ul style="list-style-type: none"> • Adjacent to existing 46kV transmission line and would require access upgrade for majority of route • New access creates disturbance to vegetation and wildlife resources • Requires new access for a portion of link 120 • Portion of link 150 within Box Canyon area • Links 190 and 210 would be located within proposed mine plan of operations boundary • Requires new access for link 160 which crosses Forest Service Concern Level 1 (i.e., Box Canyon Road) 	<ul style="list-style-type: none"> • Links 160, 190 and 210 will require special foundations in rocky terrain • Access road or improvement to existing roads will be required along links 30, 110, 150, 170 and 210 • Access to links 160 and 190 was assumed to consist of spurs off of box canyon road • Some of these links consist of slow going heavily sloped roads, therefore, construction will be time consuming • Some of the construction will be from mountain peak to mountain peaks which will be difficult requiring special structures 	<p>Pros: not specified</p> <p>Cons:</p> <ul style="list-style-type: none"> • Personnel safety risks and possible multiple outages required when installing a 138kV line with the 46kV line • This route does not follow the pipeline corridor so there is no shared access 	<p>Preferred by Town of Sahuarita</p> <p>Not supported by Santa Rita Experimental Range</p> <p>Davis-Monthan airspace management considers this 3rd most compatible route</p>		
6	30, 110, 120, 105, 155, 140, 170, 160, 190, 210	21.78	n/a	<ul style="list-style-type: none"> • Adjacent to existing 46kV transmission line and would require access upgrade for a portion of the route • New access creates disturbance to vegetation and wildlife resources • Requires new access for a portion of link 120 • Link 120 disturbs several repeat photographs sites • Shared route with pipeline corridor for links 105, 155, 140 • Nearby residences primarily along links 105 and 155 • Links 190 and 210 would be located within proposed mine plan of operations boundary • Requires new access for link 160 which crosses Forest Service Concern Level 1 (i.e., Box Canyon Road) 	<ul style="list-style-type: none"> • Links 160, 190, 140, and 210 will require special foundations in rocky terrain • Access road or improvement to existing roads will be required along links 30, 110, 120, 170, and 210 • Access to links 160 and 190 was assumed to consist of spurs off of Box Canyon Road. Some of these links consist of slow going heavily sloped roads, therefore, construction will be time consuming • Some of the construction will be from mountain peak to mountain peaks which will be difficult requiring special structures 	<p>This is the preferred route for the Adjacent 46kV Family (assuming Link 120 is permanent)</p> <p>Pros: not specified</p> <p>Cons:</p> <ul style="list-style-type: none"> • Personnel safety risks and possible multiple outages require when installing a 139kV line with the 46kV line • This route does not follow the pipeline corridor so there is no shared access 	<p>Not supported by Santa Rita Experimental Range</p>		
*Temporary interconnection for construction power and will be removed once the 138kV transmission line for operation power is constructed									

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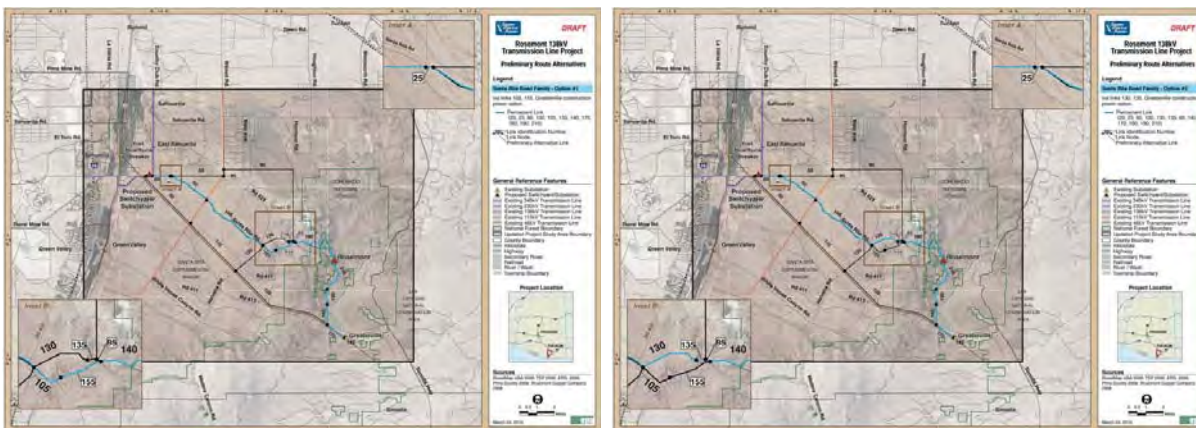
Alternative Routes

North Route Family



1-285

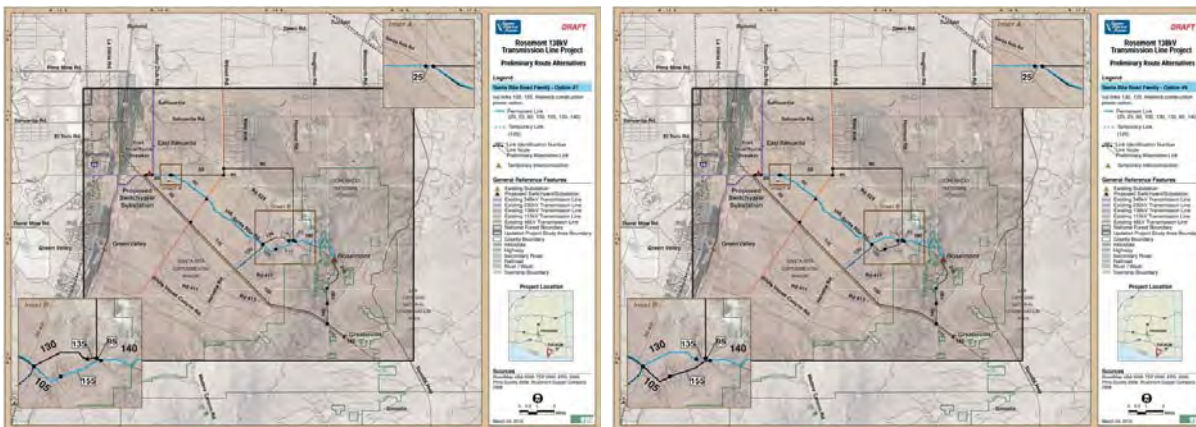
Santa Rita Road Route Family



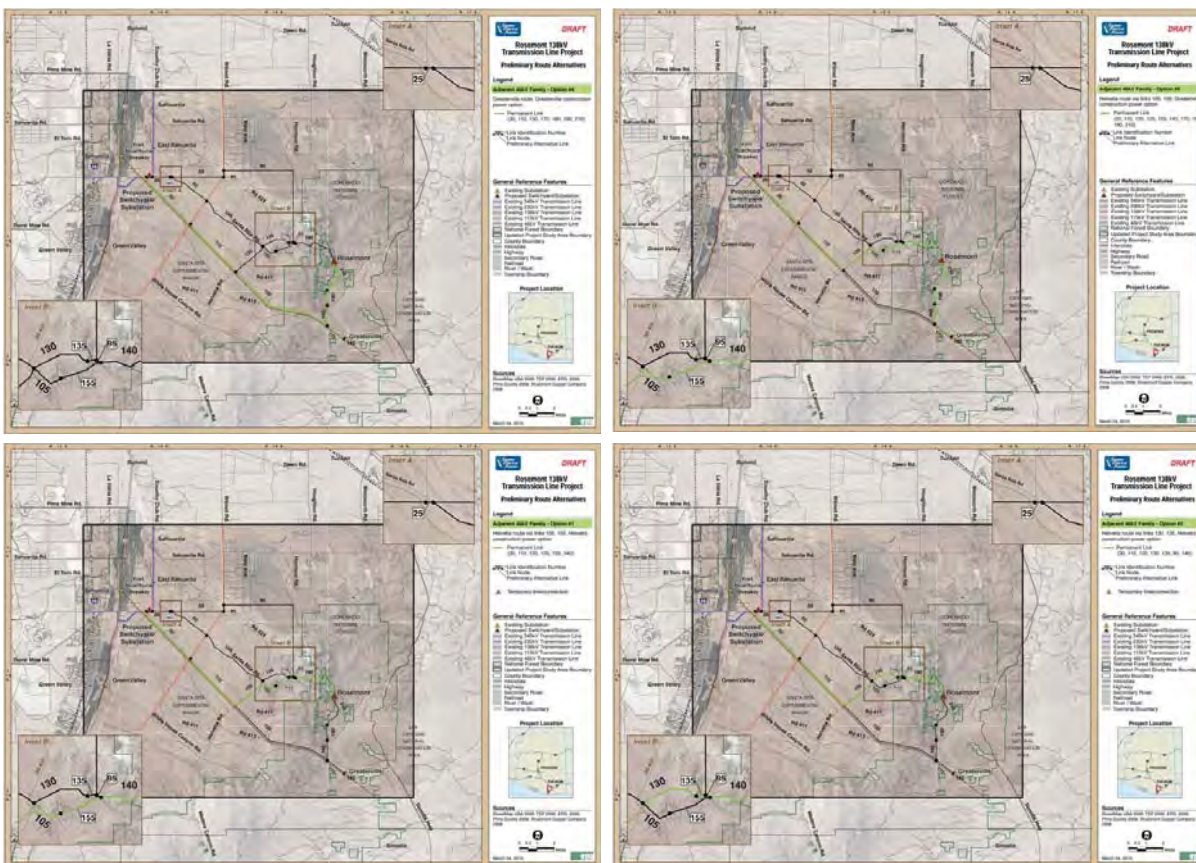
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Alternative Routes

Santa Rita Road Route Family (continued)



Adjacent 46kV Route Family



J-287

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Alternative Routes Recommended to be Carried Forward

- Santa Rita Road – options 1 and 3
 - Option 1 (uses links 130, 135, Greaterville for construction interconnection)
 - Option 3 (uses links 105, 155, Greaterville for construction interconnection)
- Adjacent 46kV Line – options 1, 2, and 4
 - Option 1 (uses links 105,155, Helvetia/46kV for construction interconnection)
 - Option 2 (uses links 120,130,135, Helvetia/46kV for construction interconnection)
 - Option 4 (uses link 150, Greaterville for construction interconnection)



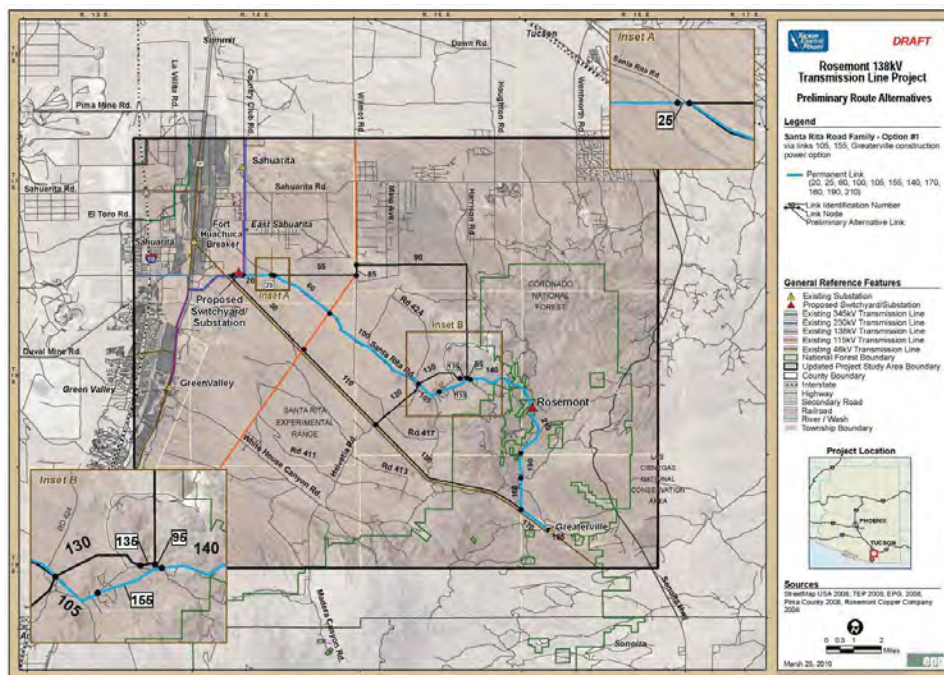
Rosemont 138kV Transmission Line Project

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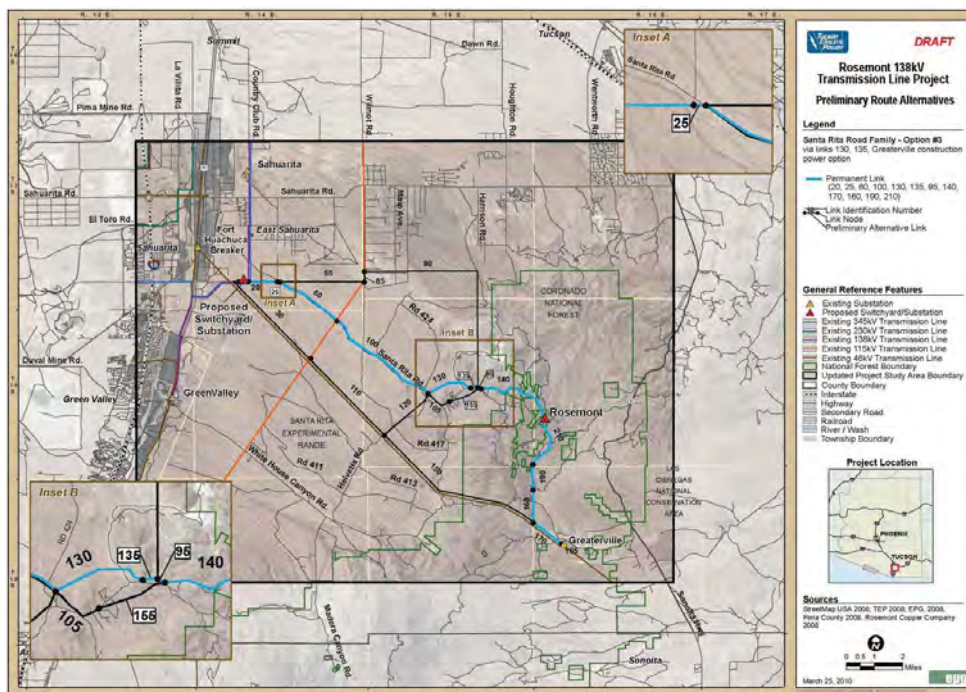
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Santa Rita Road – Options 1 & 3

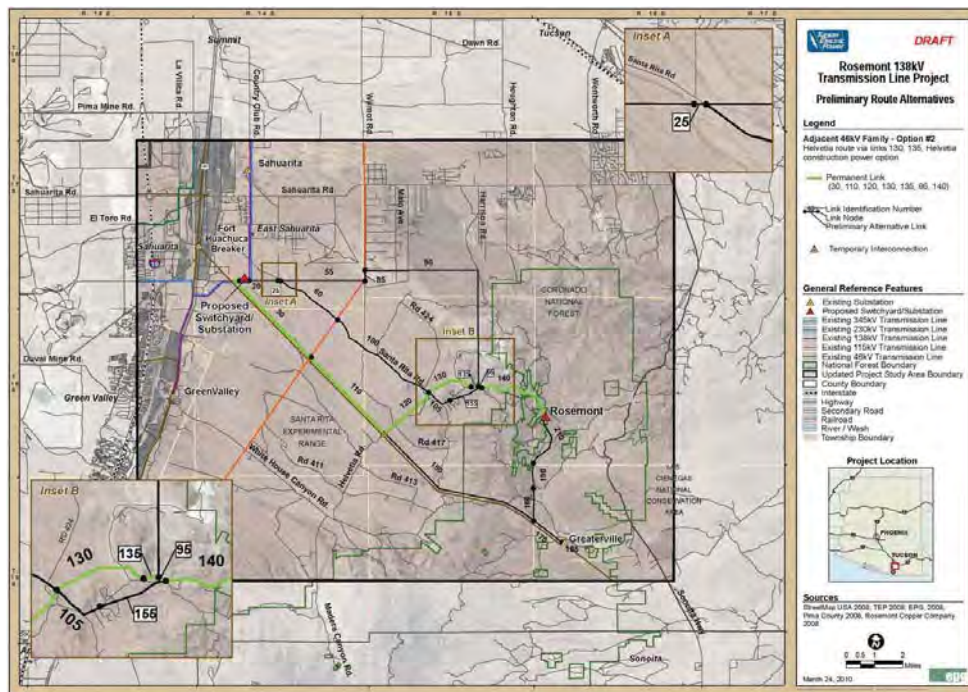
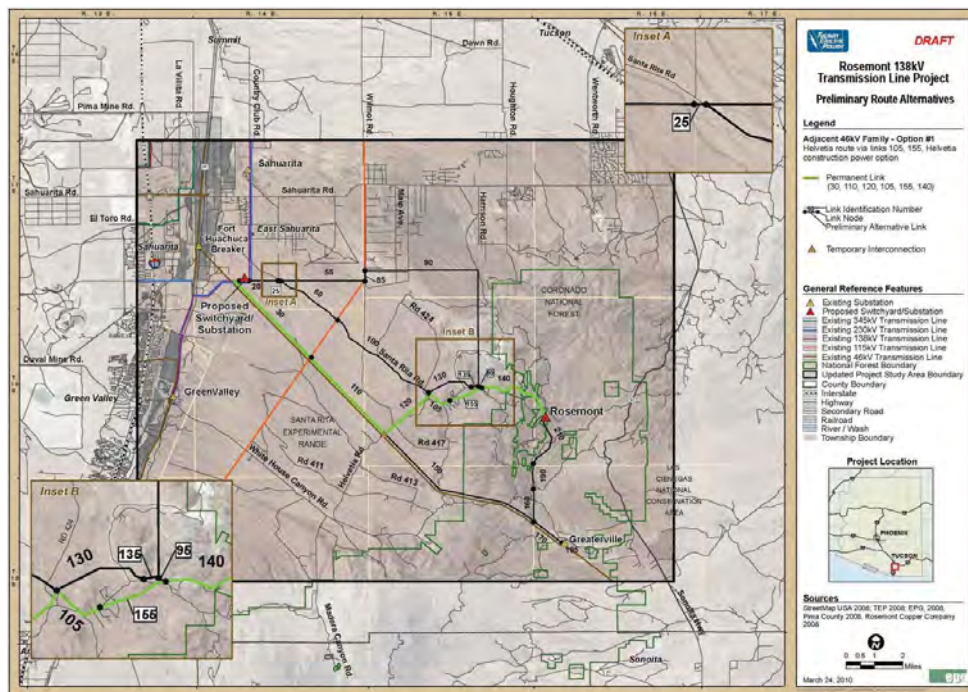


J-291



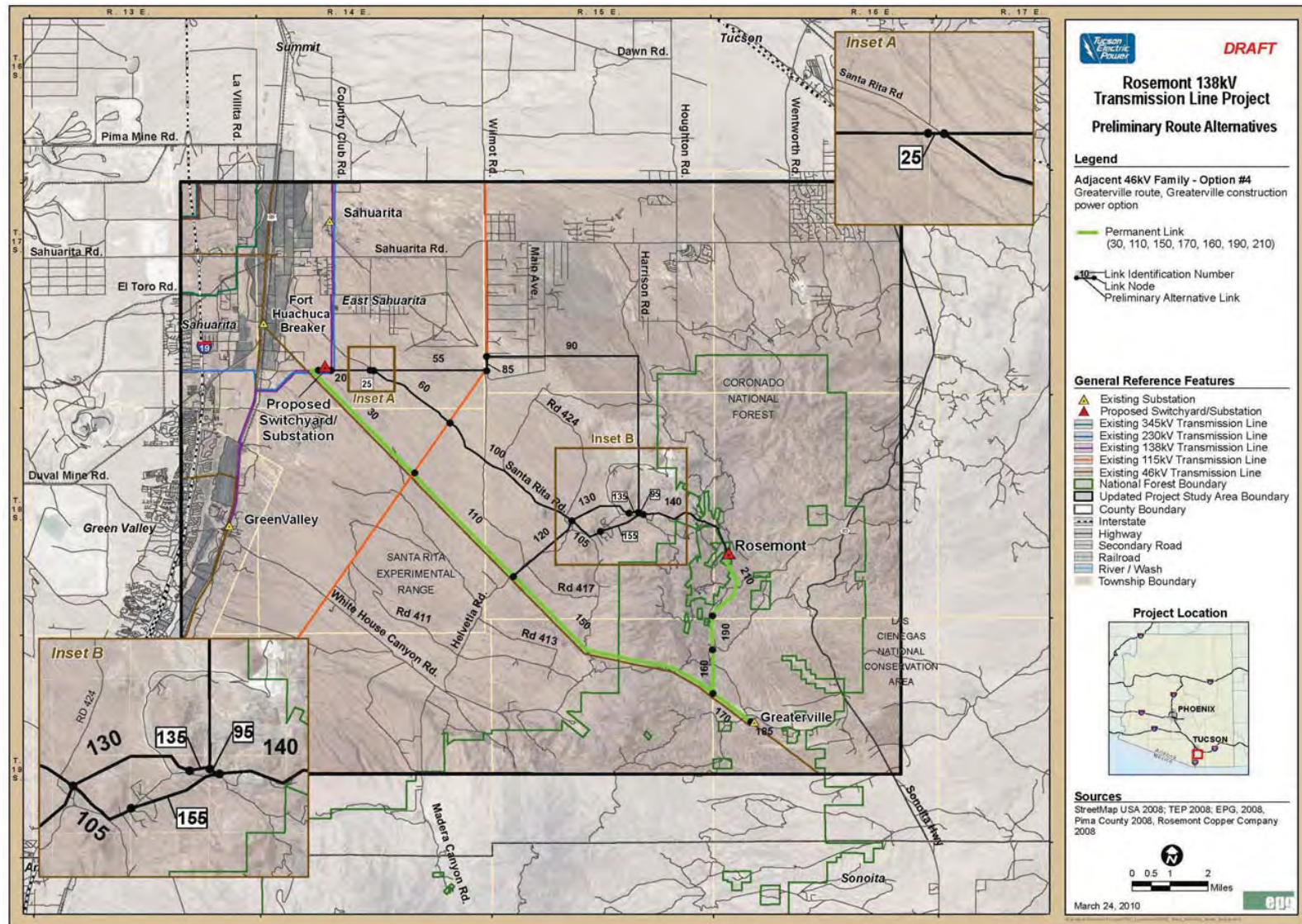
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Adjacent 46kV Line – Options 1 & 2



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Adjacent 46kV Line – Option 4



April 13, 2010

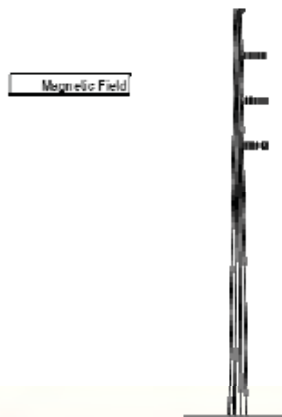
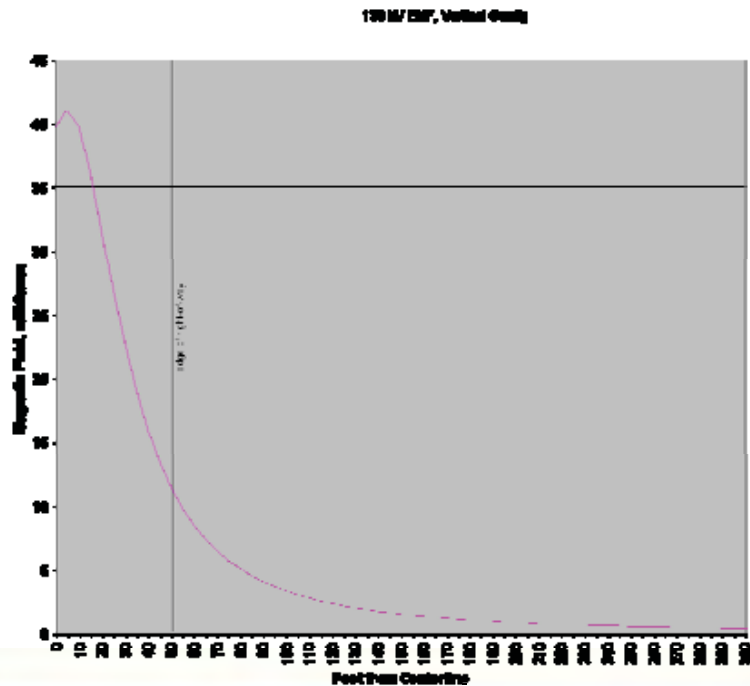
Electric and Magnetic Fields (EMF)

EMF STRENGTH OF VARIOUS ELECTRICAL SOURCES AT VARIOUS DISTANCES

EMF Source ¹	Distance	Strength	Distance	Strength	Distance	Strength
Microwave Oven	0.5 feet	200 mG	1.0 feet	4 mG	4.0 feet	2 mG
Vacuum Cleaner	0.5 feet	300 mG	1.0 feet	60 mG	4.0 feet	1 mG
Hair Dryer	0.5 feet	300 mG	1.0 feet	1 mG	4.0 feet	0 mG
Electric Shaver	0.5 feet	100 mG	1.0 feet	20 mG	4.0 feet	0 mG
138 kV Transmission Line, vertical ²	0 feet	40 mG	50 feet	11 mG	300 feet	0.4 mG

¹ Appliance magnetic field strengths are median values in milliGauss (mG) for typical 60 Hz electric current (source: USNIEHS, DOE 1995)

² 138kV power-line right-of-way is 100 ft wide, 0 feet values represent directly below the lines at lowest point of sag.



Additional EMF information resources are available from:

Environmental Health Information Service:
<http://www.niehs.nih.gov/health/topics/agents/emf/>

World Health Organization: www.who.int/emf



Rosemont 138kV Transmission Line Project

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Agency and Public Participation Activities

- Agency briefings
- Stakeholder group meetings
- Field trip
- Public open houses
- Community briefings
- Newsletters
- Telephone information line
- Website (TEP)



Rosemont 138kV Transmission Line Project

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Public Participation Opportunities

- Public open house meetings
- Telephone information line (866) 632-5944
- TEP website: www.tep.com/company/news/rosemont
- Arizona siting committee FAQs website:
www.cc.state.az.us/Divisions/Utilities/Electric/LineSiting-FAQs.asp
- Media briefings
- Comment forms within newsletters mailed to community, including residents and landowners, and other interested parties, or submit electronically at website



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Comments

- Your comments received will be reviewed and incorporated into the siting process
- A court reporter is available tonight to record in writing your verbal comments on the proposed project, if you desire
- Comments may also be submitted on the comment forms provided at the open house meetings and in Newsletter #3, or submitted electronically at the TEP website



Rosemont 138kV Transmission Line Project

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TEP Decision Elements

- Purpose and need
- Environmental analysis
- Public/agency input
- Permits
- Engineering analysis
- Ability to obtain right-of-way
- Overall cost



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Next Steps

- Finalize route analysis for CEC application
- File CEC application – timing depends upon publication of the Coronado National Forest's Rosemont Copper Project Draft Environmental Impact Statement



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ROSEMONT 138KV TRANSMISSION LINE SITING STUDY PROJECT

Public Open House Meeting #4

November 17, 2010

Rancho Resort Clubhouse

5:30pm – 8:00pm

Presentation and Question and Answer

6:30pm – 7:00pm

November 17, 2010

Project Overview

- Tucson Electric Power (TEP), as a part of its obligation to serve, is proposing to construct and operate a new 138kV transmission line for the proposed Rosemont Copper operations
- Planning process includes environmental studies and public input conducted to assist in identification and comparison of alternative transmission line routes and environmental impacts. Similar to any customer requesting service at the transmission voltage, Rosemont is paying for the transmission line siting study.
- Project area is south of I-10 and east of I-19, with lands managed by Arizona State Land Department in conjunction with the University of Arizona, Forest Service, Bureau of Land Management, and privately-owned lands under the planning jurisdictions of the Town of Sahuarita and Pima County.
- Project requires review by the Arizona Corporation Commission's (ACC) Power Plant and Transmission Line Siting Committee resulting in a recommendation to, and a final determination by, the ACC prior to construction.



Rosemont 138kV Transmission Line Project

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Purpose and Need

- Electric utilities are required by the State of Arizona to provide electrical service to customers, upon request.
- Rosemont Copper Company has requested TEP to provide electric power to the Rosemont Copper operations.
- The primary purpose and need for the proposed transmission line is to provide adequate and reliable power for the proposed Rosemont Copper operations.
- Currently, there are no existing transmission lines and substations to serve this proposed operation.



Rosemont 138kV Transmission Line Project

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Project Description

- Up to approximately 20 miles of 138kV transmission line
- A 500-foot-wide corridor will be requested, and within that corridor a 100-foot-wide right-of-way would be obtained
- Approximately 3+ acres of land for construction, operation, and maintenance for the proposed Rosemont Substation, westernmost switchyard/substation, Greaterville Substation, Helvetia Road/46kV temporary interconnection
- Three connection points:
 - New switchyard/substation for connection to TEP system
 - New Rosemont switchyard/substation at Rosemont Copper operations
 - Greaterville Substation or temporary switchyard/substation interconnection (Helvetia Road & 46kV intersection) for construction power and possible long-term reliability purposes

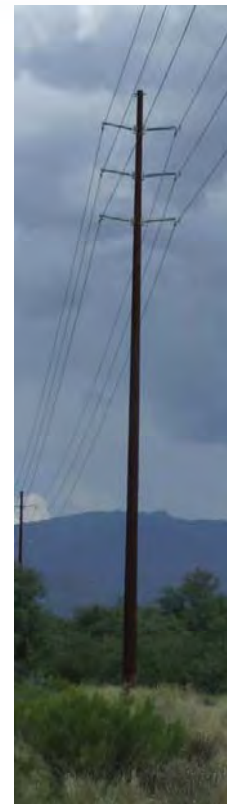
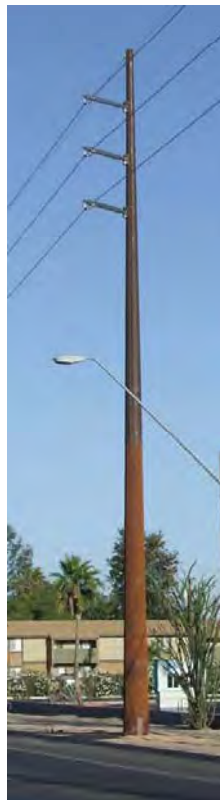
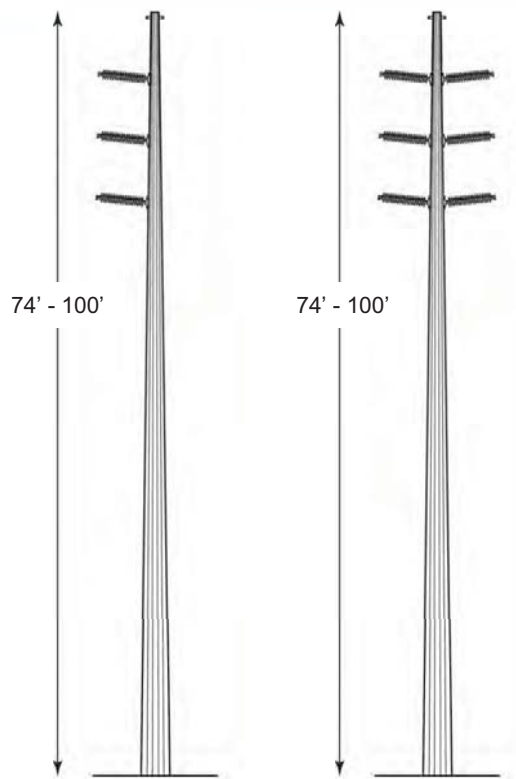


Rosemont 138kV Transmission Line Project

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Proposed Structure Type(s)



Rosemont 138kV Transmission Line Project

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Proposed Switchyard/Substation

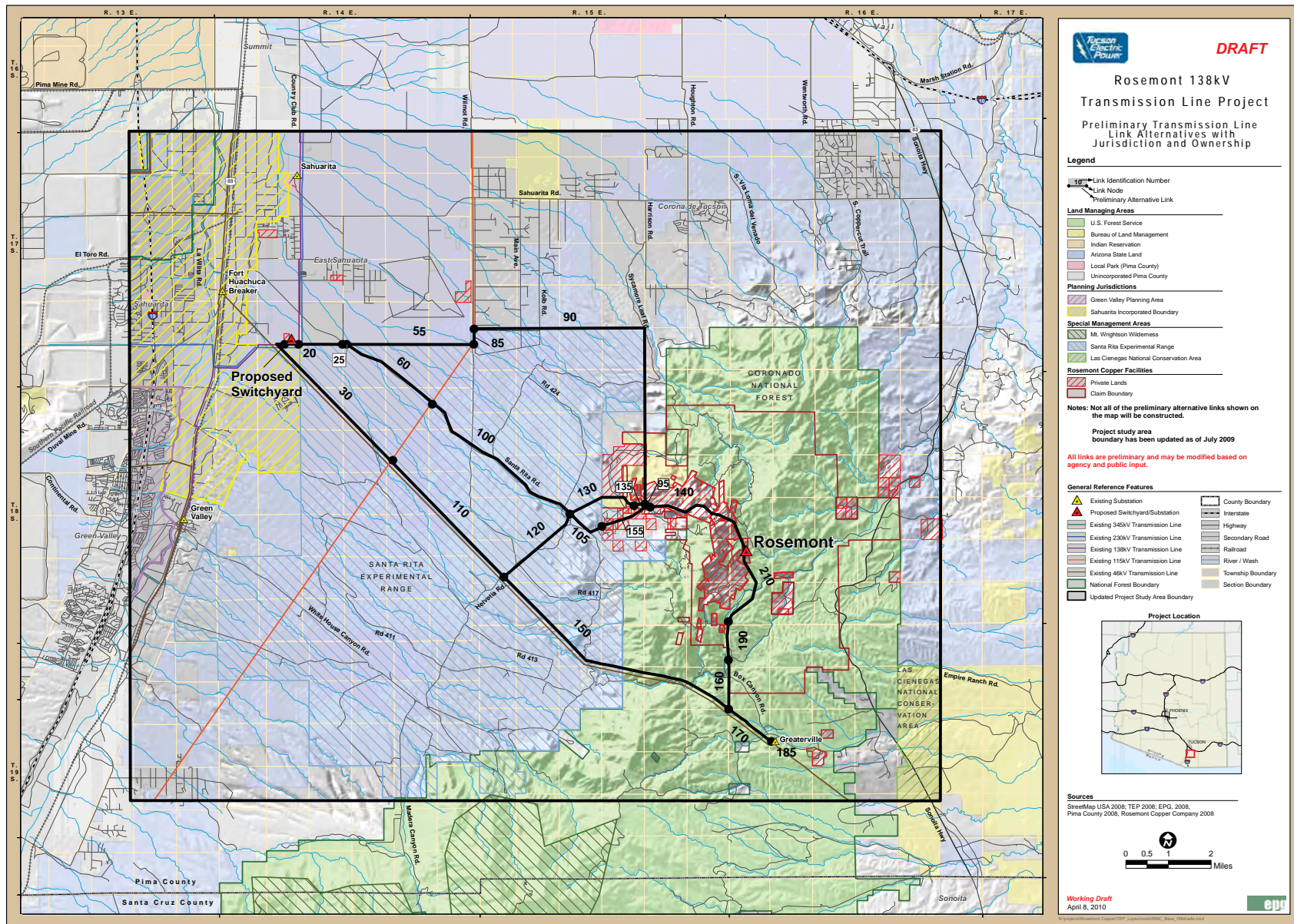
- Photograph is of a typical TEP switchyard that resembles the proposed switchyard/substation(s)
- Proposed facility for interconnection with the existing TEP transmission system
- Approximately 3+ acres in size
- Located on private land



Rosemont 138kV Transmission Line Project

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Planning Process

- Comprehensive planning process consisting of six key tasks. Studies include environmental and engineering analysis, along with agency/public input .
- Identification and evaluation of alternatives that meet project purpose and need
- TEP will identify a preferred route(s), as well as alternative routes, for permitting and construction.
- TEP will prepare and file a Certificate of Environmental Compatibility (CEC) application to be reviewed by the Arizona Power Plant and Transmission Line Siting Committee.
- The ACC will make a final decision to approve or deny the CEC application (with any conditions).

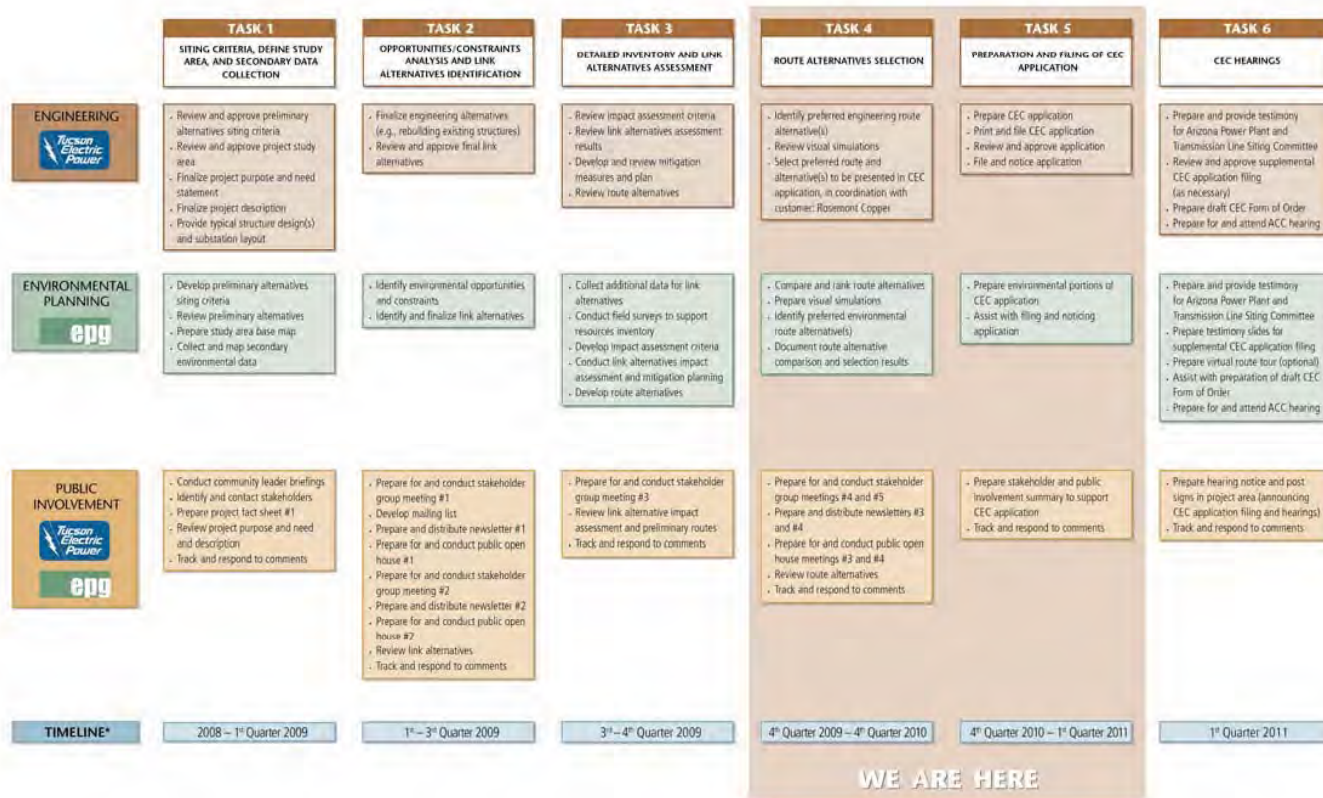


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Planning Process Chart



*Timeline is estimated

Planning Process and Responsibilities
Rosemont 138kV Transmission Line Project

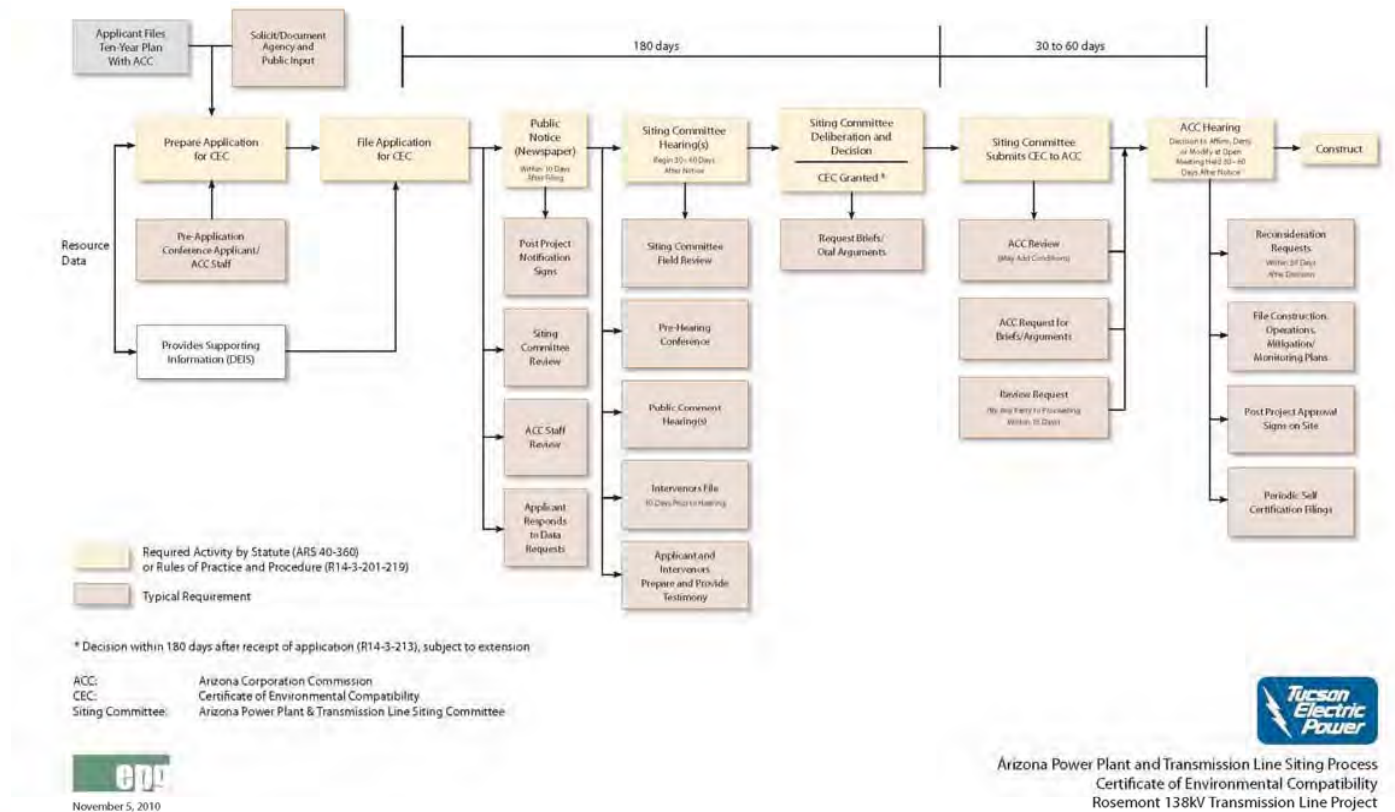


Rosemont 138kV Transmission Line Project

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Certificate of Environmental Compatibility Application Process



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Key Considerations for Selection of Recommended Routes

- Project construction and operation power needs
- Minimizing environmental impacts
- Electrical system planning requirements and timeframes
- Engineering
 - Constructability
 - Cost
 - Right-of-way
- Public and agency input
- Regulatory permits
- One or more alternative routes may be carried forward in application for a CEC to be submitted to the Siting Committee and ACC

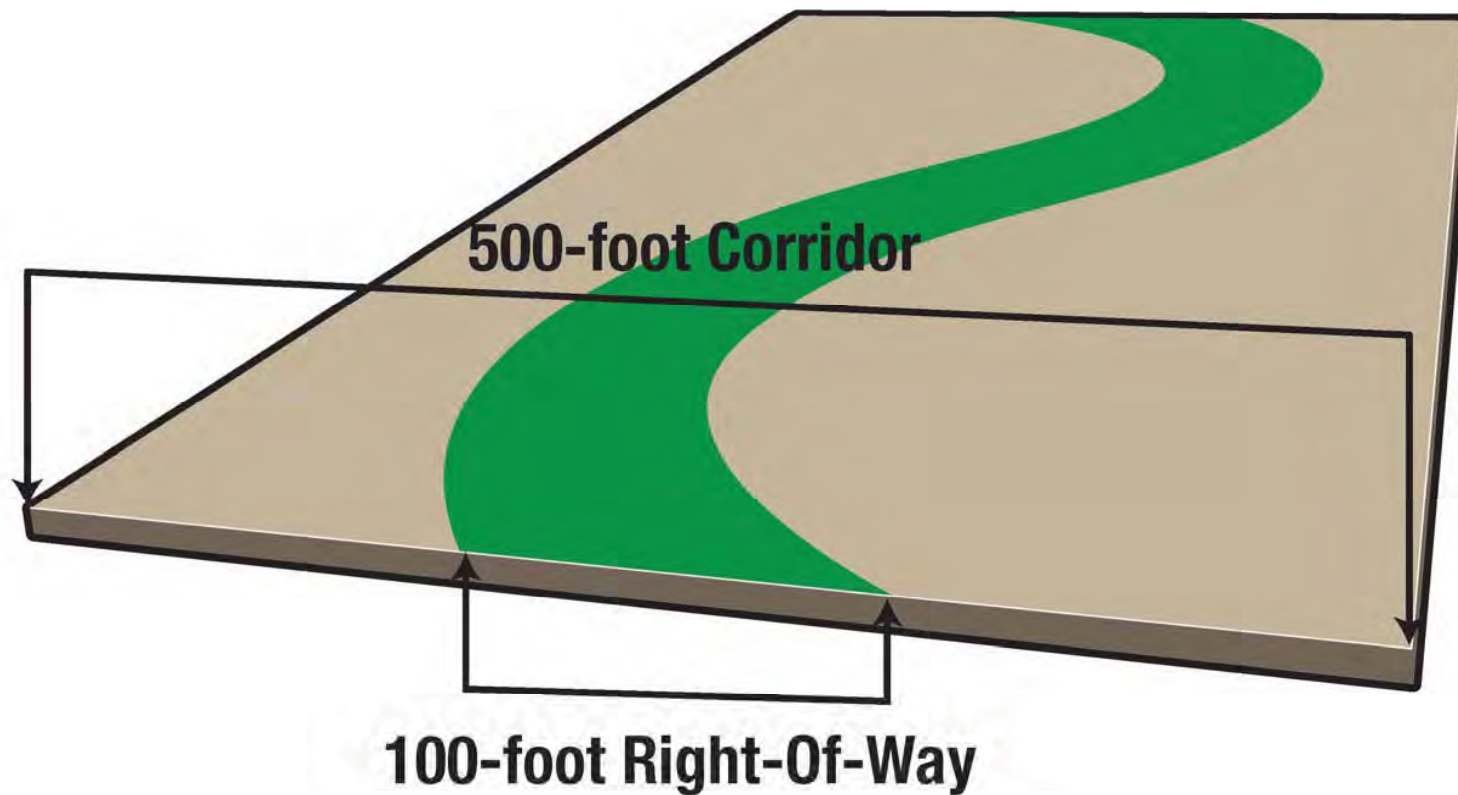


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Example Corridor and Right-of-Way Configuration

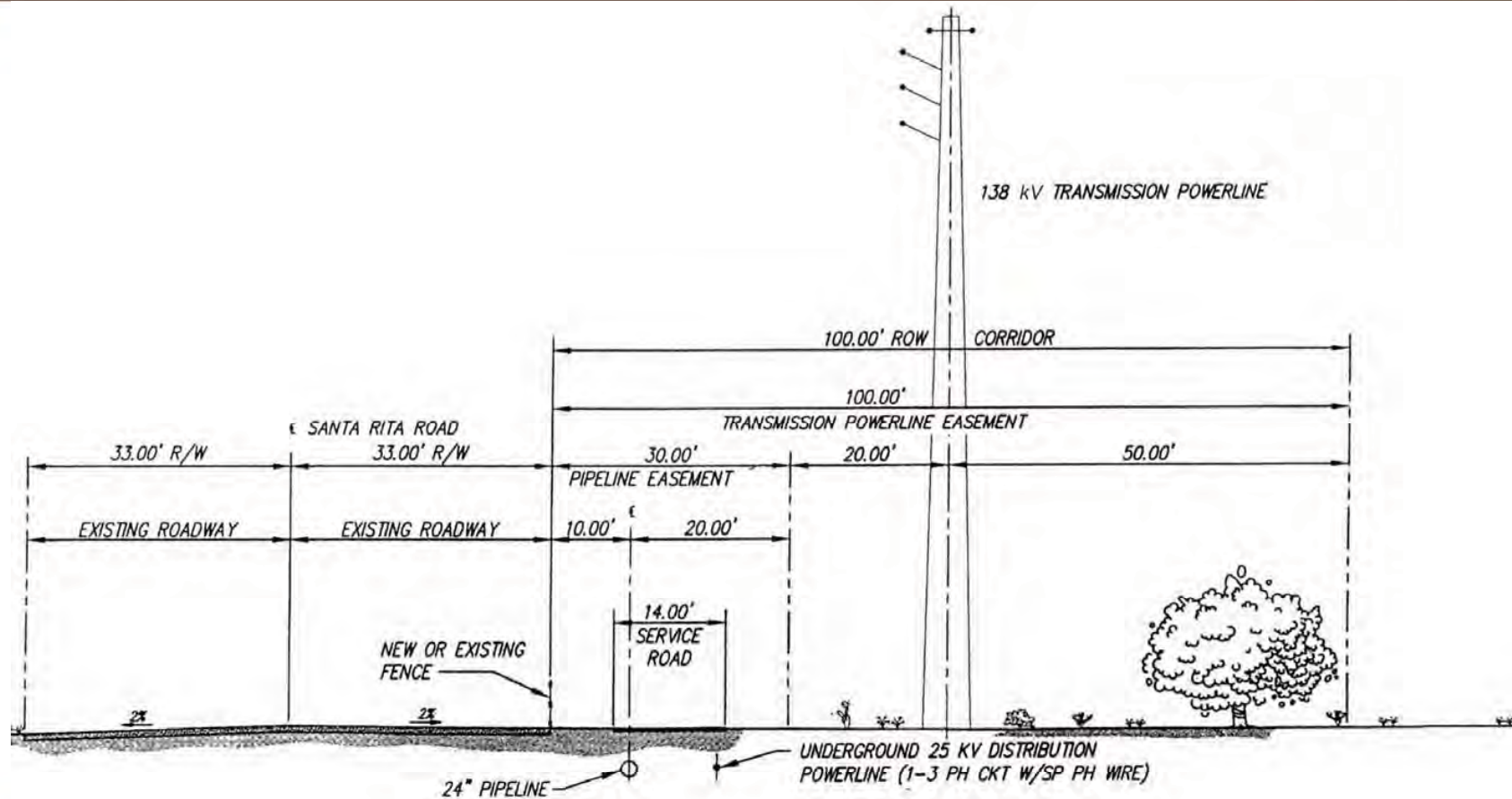


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Example Section of Transmission Line and Pipeline Right-of-Way



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Environmental Analysis Summary

Land Use

- Existing land use
- Future land use

Visual Resource

- Landscape scenic quality
- Sensitive viewers
(residences, roads/trails,
trailheads)
- Scenic management
guidelines

Cultural Resource

- Known historic properties
considered
 - Eligible
 - Not eligible
 - Not evaluated

Biological Resource

- Biological conservation
areas
- Vegetation
- Wildlife

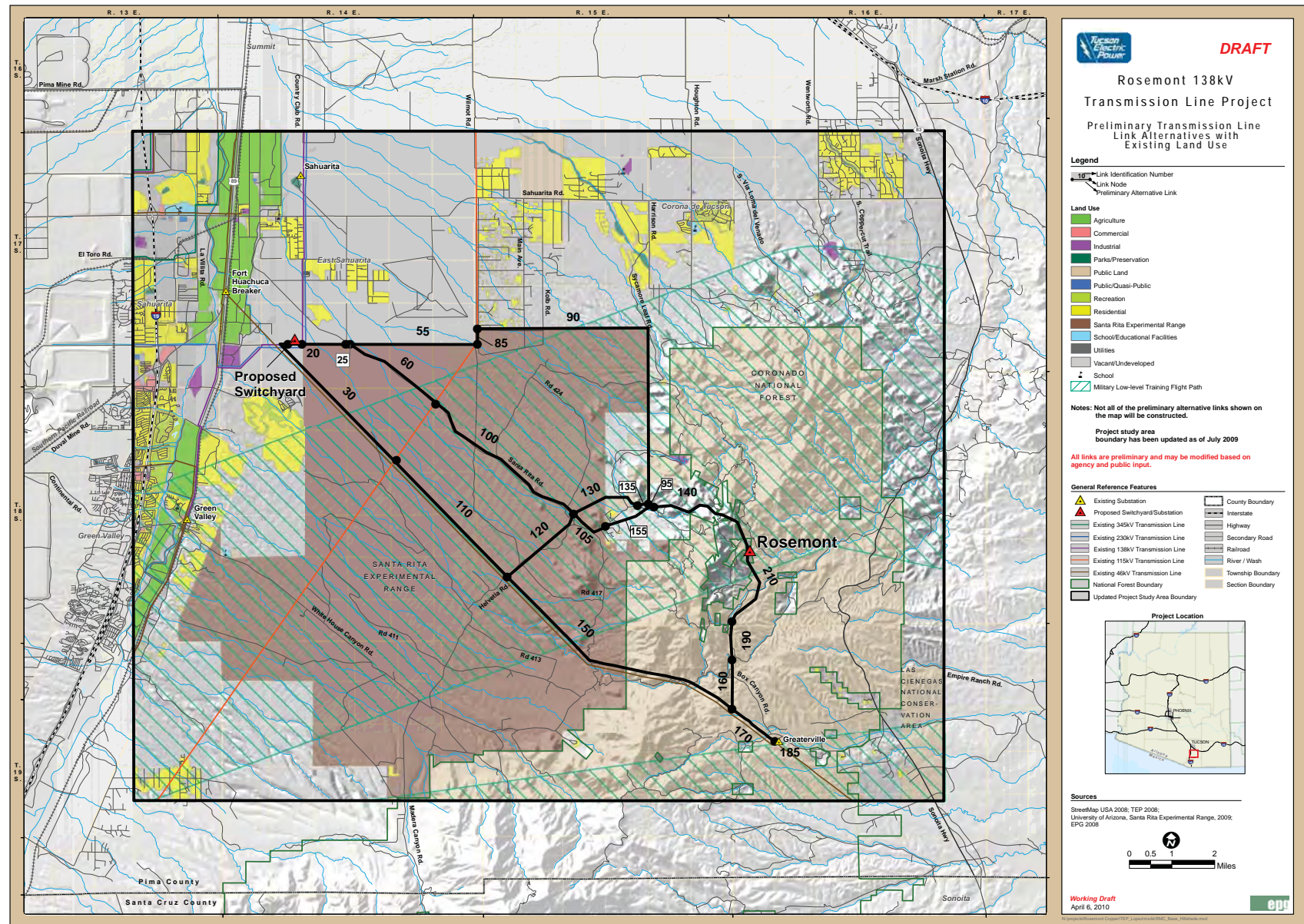


Rosemont 138kV Transmission Line Project

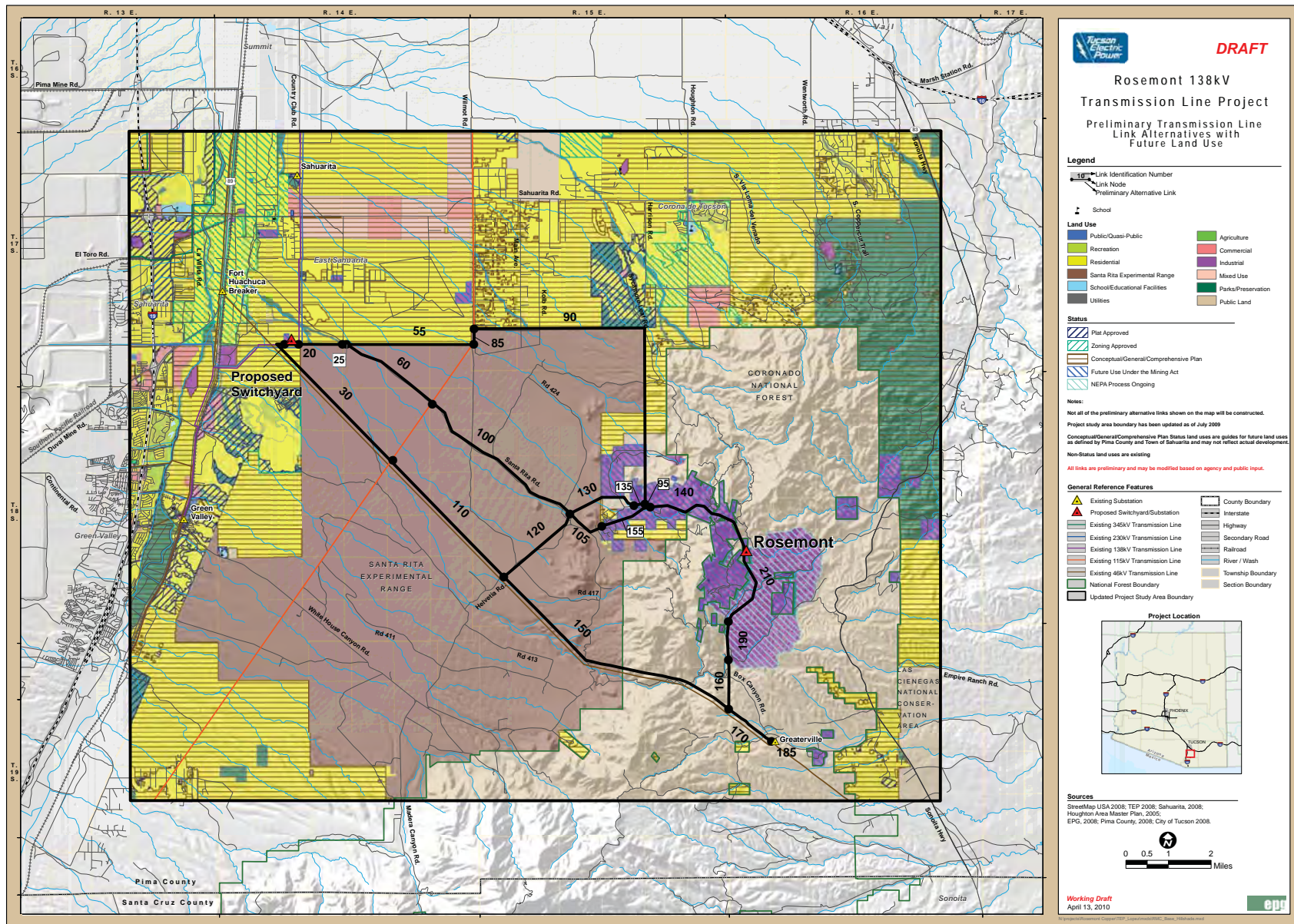
November 17, 2010

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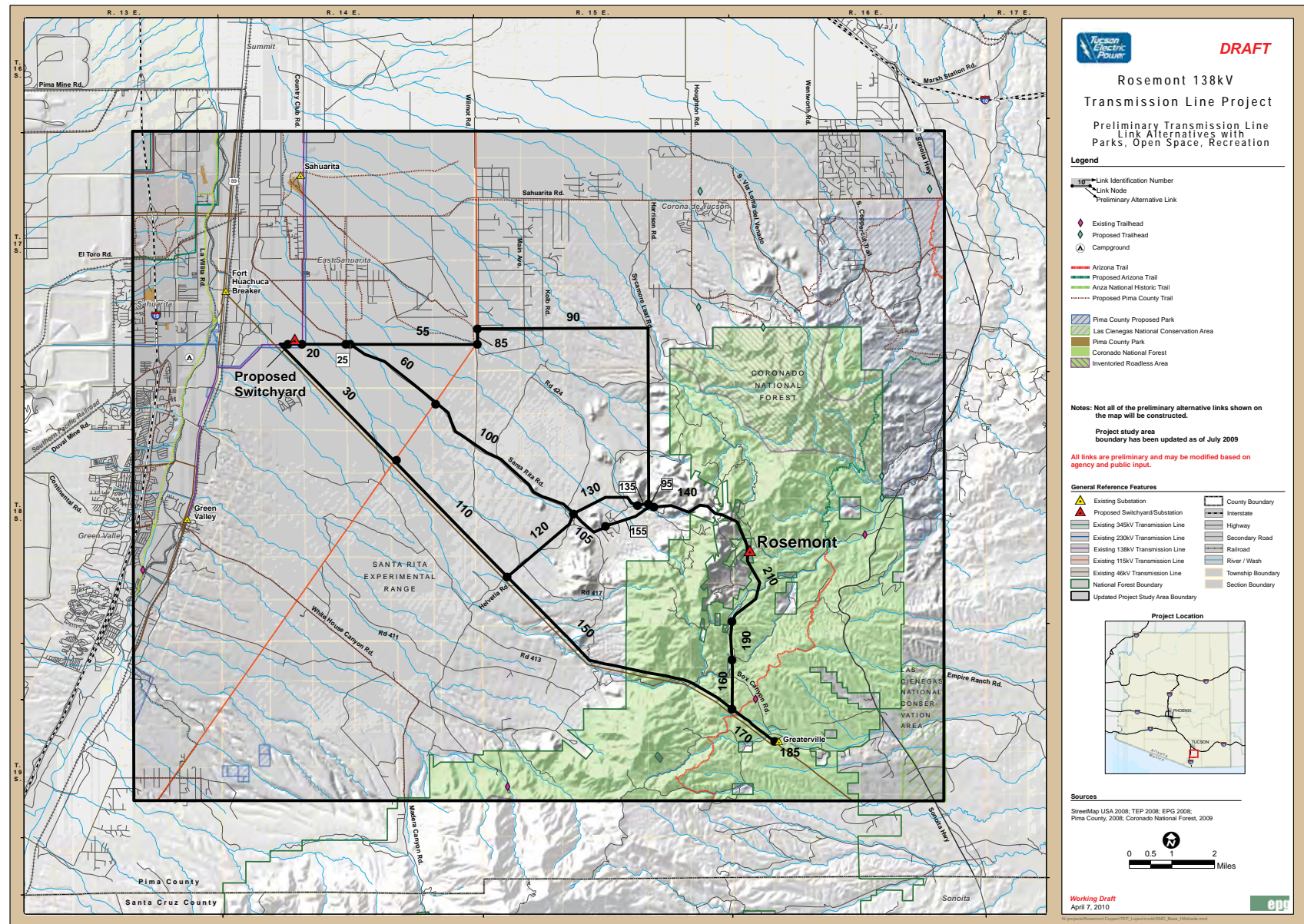
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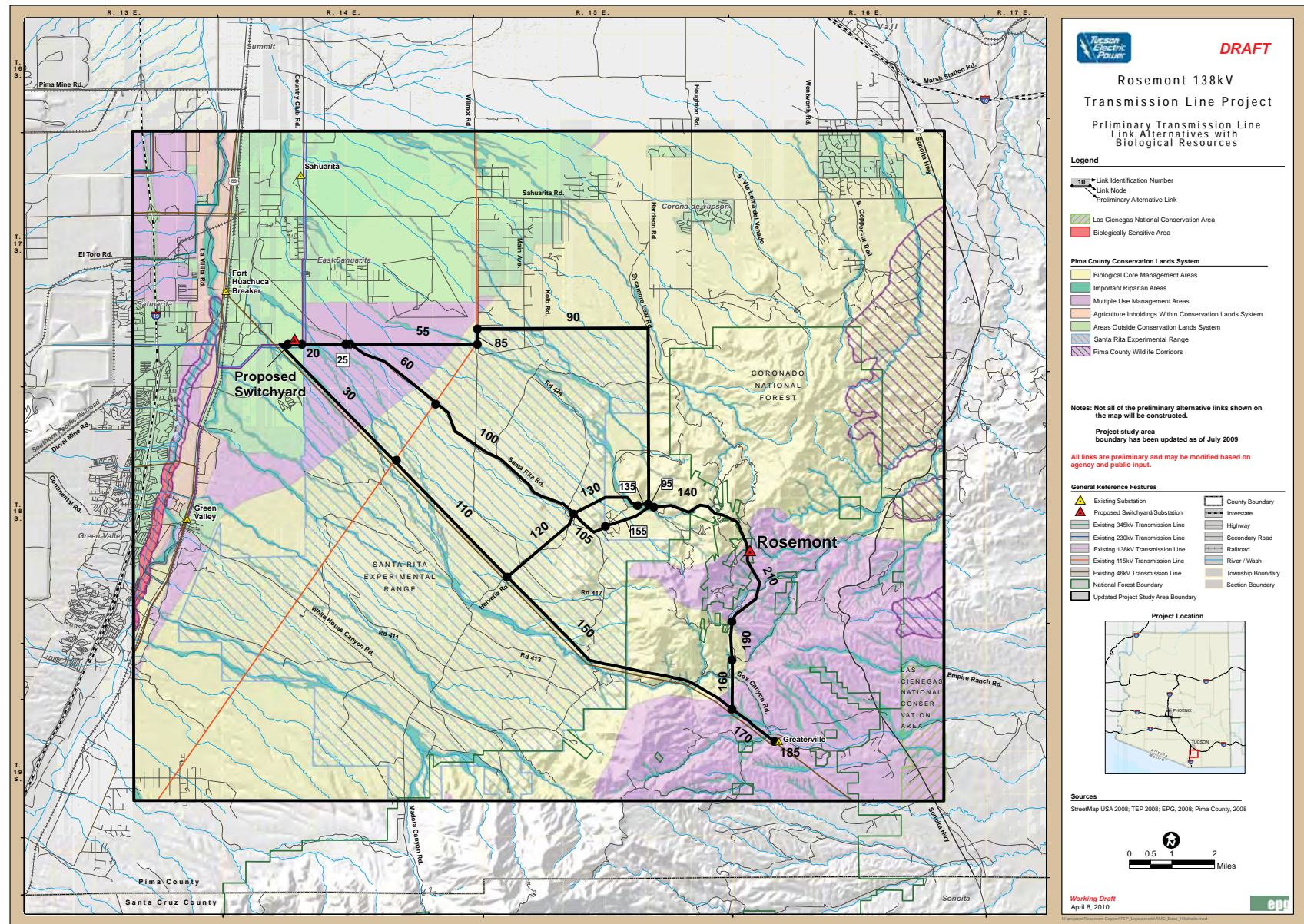
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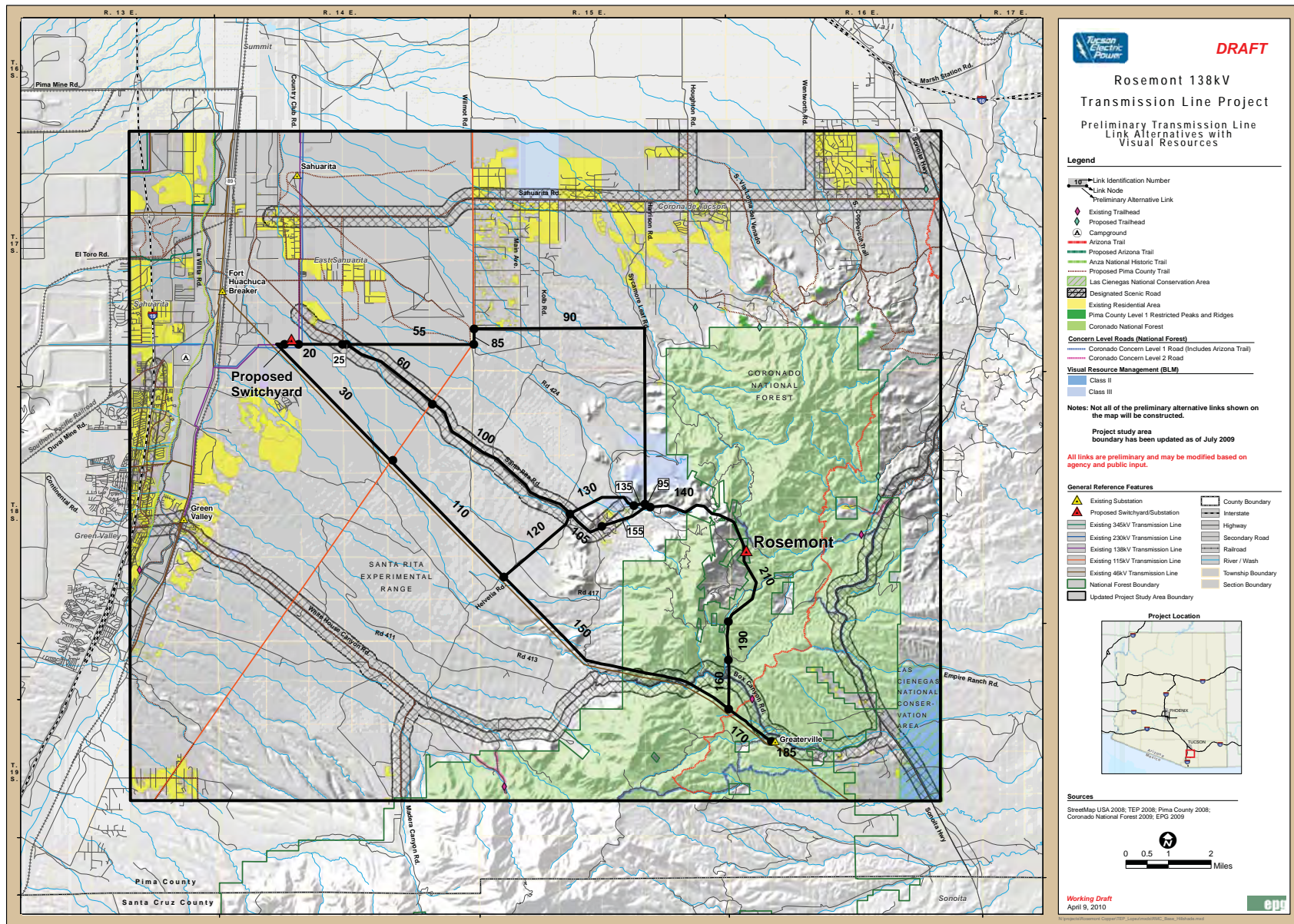
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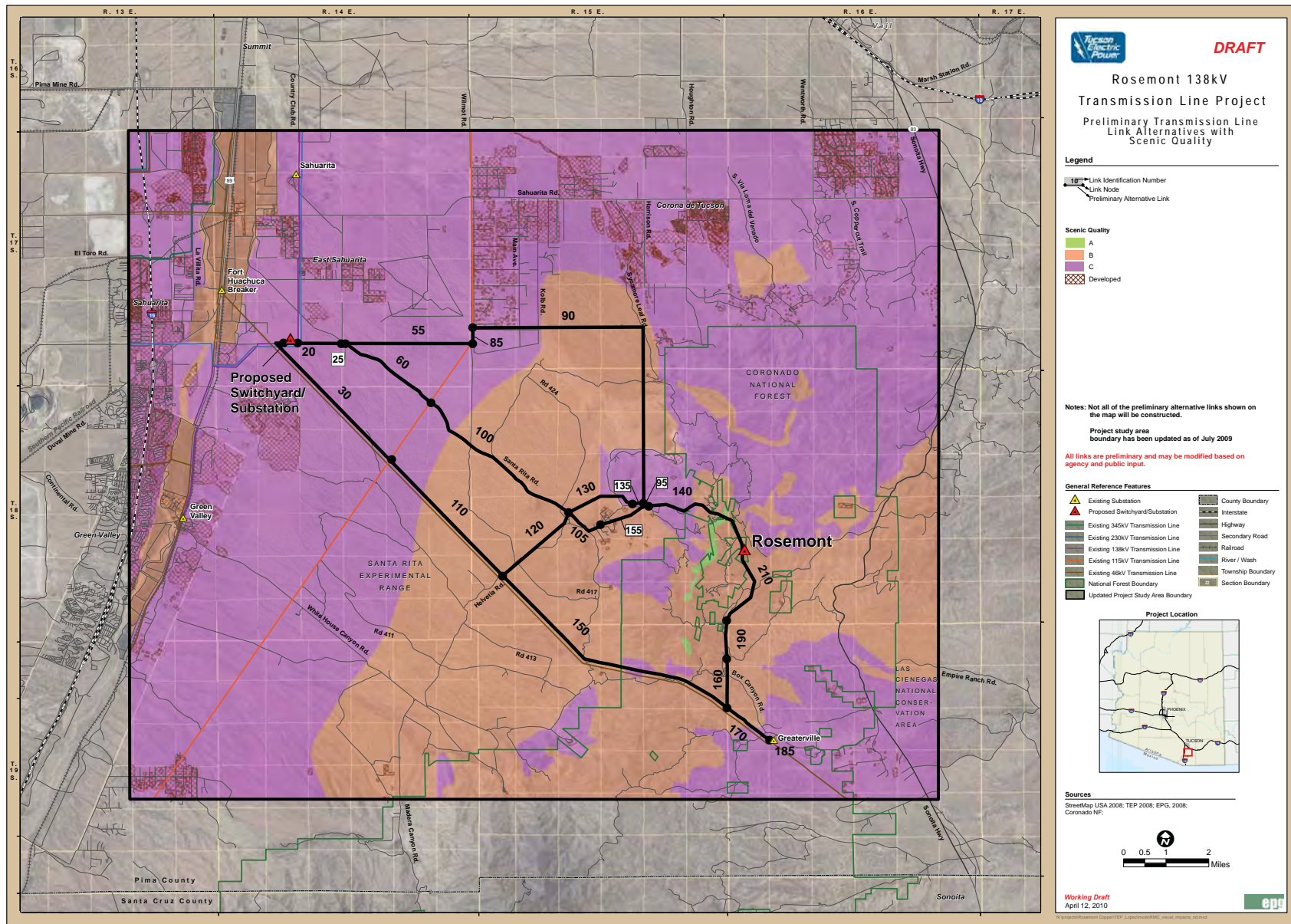
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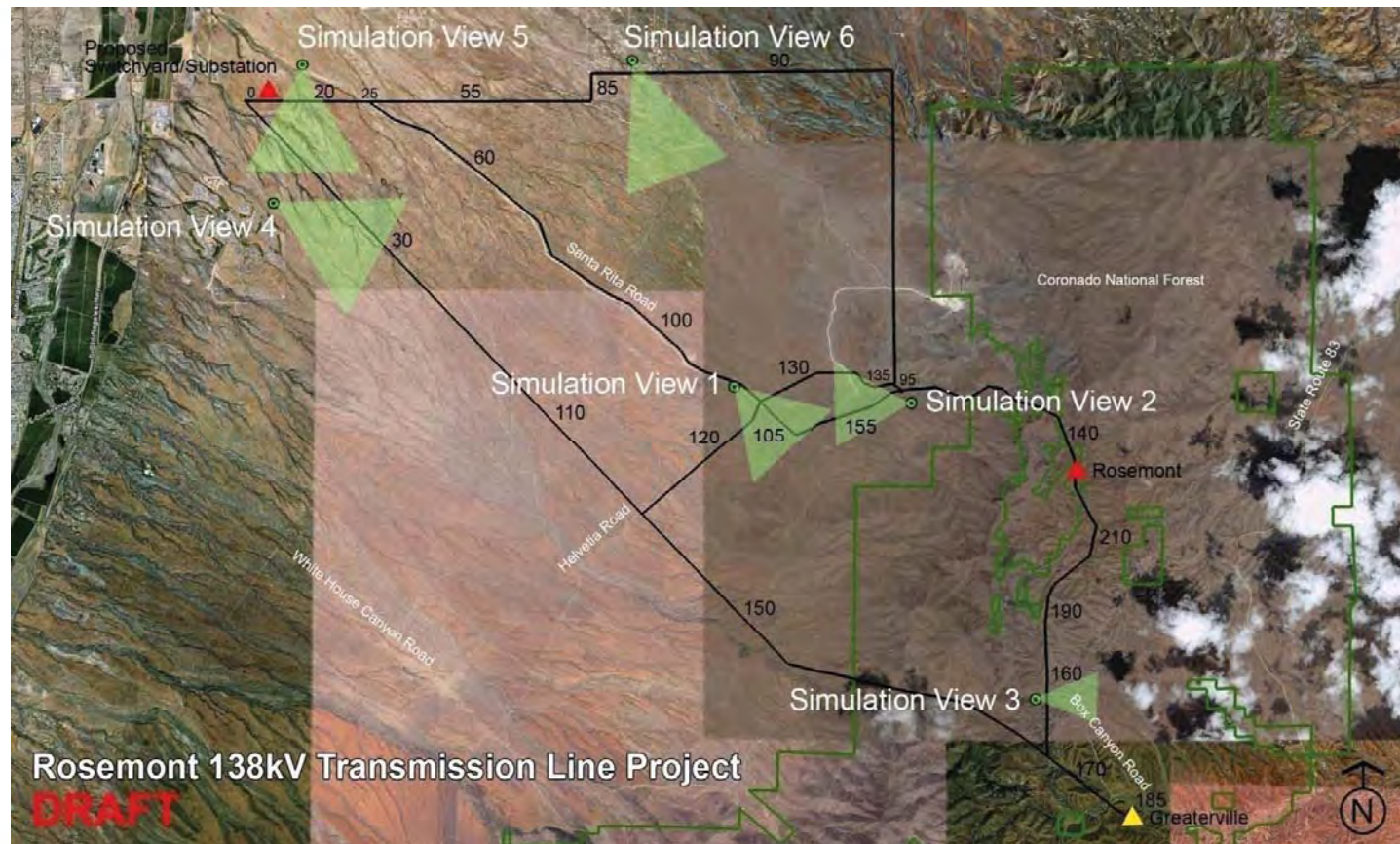


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Simulations



Rosemont 138kV Transmission Line Project

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Existing Condition – Santa Rita Road within the Santa Rita Experimental Range



Simulated Condition – Proposed 138kV corten steel single-circuit transmission lines and water pipeline with shared access road



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission lines and water pipeline with shared access road



Photograph Location: Santa Rita Road Route facing southeast on Santa Rita Road.

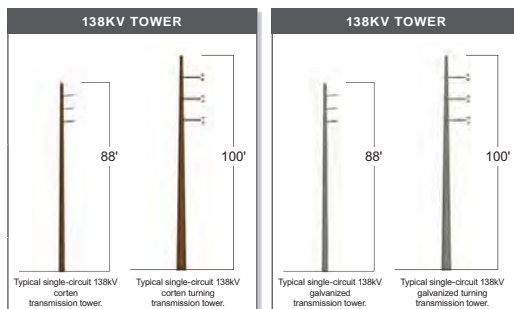


Photo Date and Time: 11-11-09, 2:14 p.m. Focal Length: 50mm

Structure models that were used in the simulations were created using diagrams provided by TEP. Pipeline information provided by Rosemont Copper.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.



**Rosemont Copper Transmission Line Project
Simulation 1 - Preferred Route**

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Existing Condition – Existing distribution lines and residences along Helvetia Road



Simulated Condition – Proposed 138kV corten steel double-circuit transmission line and water pipeline with shared access road



Simulated Condition – Proposed 138kV galvanized steel double-circuit transmission line and water pipeline with shared access road



Photograph Location: Viewing west off of Helvetia Road toward Green Valley, Arizona. Photo point is approximately 0.3 mile from nearest transmission line.

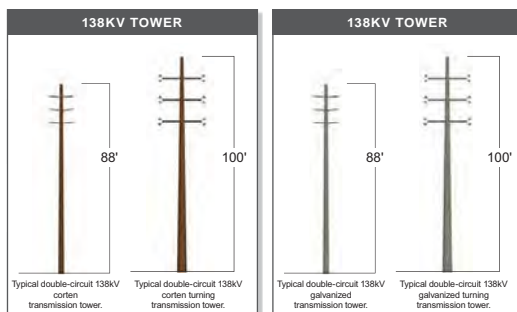


Photo Date and Time: 1-25-10, 10:50 a.m. Focal Length: 50mm
Structure models that were used in the simulations were created using diagrams provided by TEP. Pipeline information provided by Rosemont Copper.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.

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Existing Condition – Box Canyon Road within the Santa Rita Mountains



Simulated Condition – Proposed 138kV corten steel single-circuit transmission line



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission line



Photograph Location: Box Canyon facing east down Box Canyon Road. Photo point is approximately 0.14 mile from nearest transmission line. Simulation location and viewpoint selected by Coronado National Forest Landscape Architect.

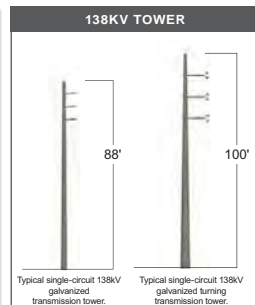
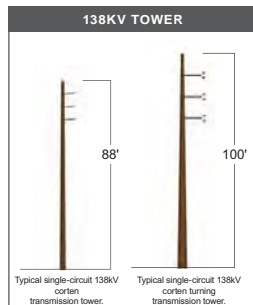


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Structure models that were used in the simulations were created using diagrams provided by TEP.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.



**Rosemont Copper Transmission Line Project
Simulation 3 - Preferred Route,
Alternative 1, Alternative 4**

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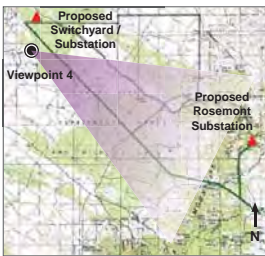
Existing Condition – Quail Creek Community Golf Course and existing 46kV transmission lines



Simulated Condition – Proposed consolidated 138kV corten steel double-circuit transmission line with co-located 46kV line



Simulated Condition – Proposed consolidated 138kV galvanized steel double-circuit transmission line with co-located 46kV line



Photograph Location: Viewing southeast off Quail Creek Community Golf Course. Photo point is approximately 0.9 mile from nearest transmission line.

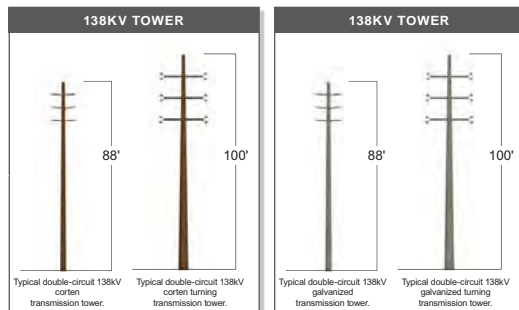


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Structure models that were used in the simulations were created using diagrams provided by TEP.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.

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Existing Condition – Sahuarita Highlands residences along East Broadwater Way, Santa Rita Road, and Santa Rita Mountains



Simulated Condition – Proposed 138kV corten steel single-circuit transmission lines



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission lines



Photograph Location: Viewing south from Sahuarita Highlands on East Broadwater Way toward Santa Rita Road. Photo point is approximately 0.50 mile from nearest transmission line.

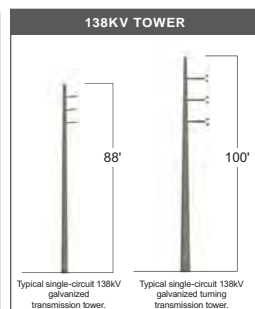
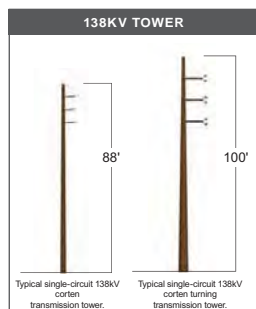


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Structure models that were used in the simulations were created using diagrams provided by TEP.

This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.

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Existing Condition – Residences near Corona de Tucson, north of S. Kolb Road with views of the Santa Rita Experimental Range and Santa Rita Mountains



Simulated Condition – Proposed 138kV corten steel single-circuit transmission line



Simulated Condition – Proposed 138kV galvanized steel single-circuit transmission line



Photograph Location: Viewing southeast from residences, north of S. Kolb Road, toward the Santa Rita Mountains. Photo point is approximately 0.2 mile from nearest transmission line.

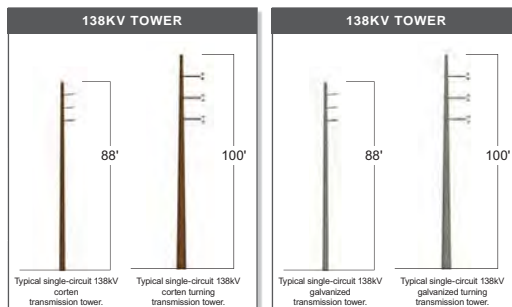


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Structure models that were used in the simulations were created using diagrams provided by TEP.

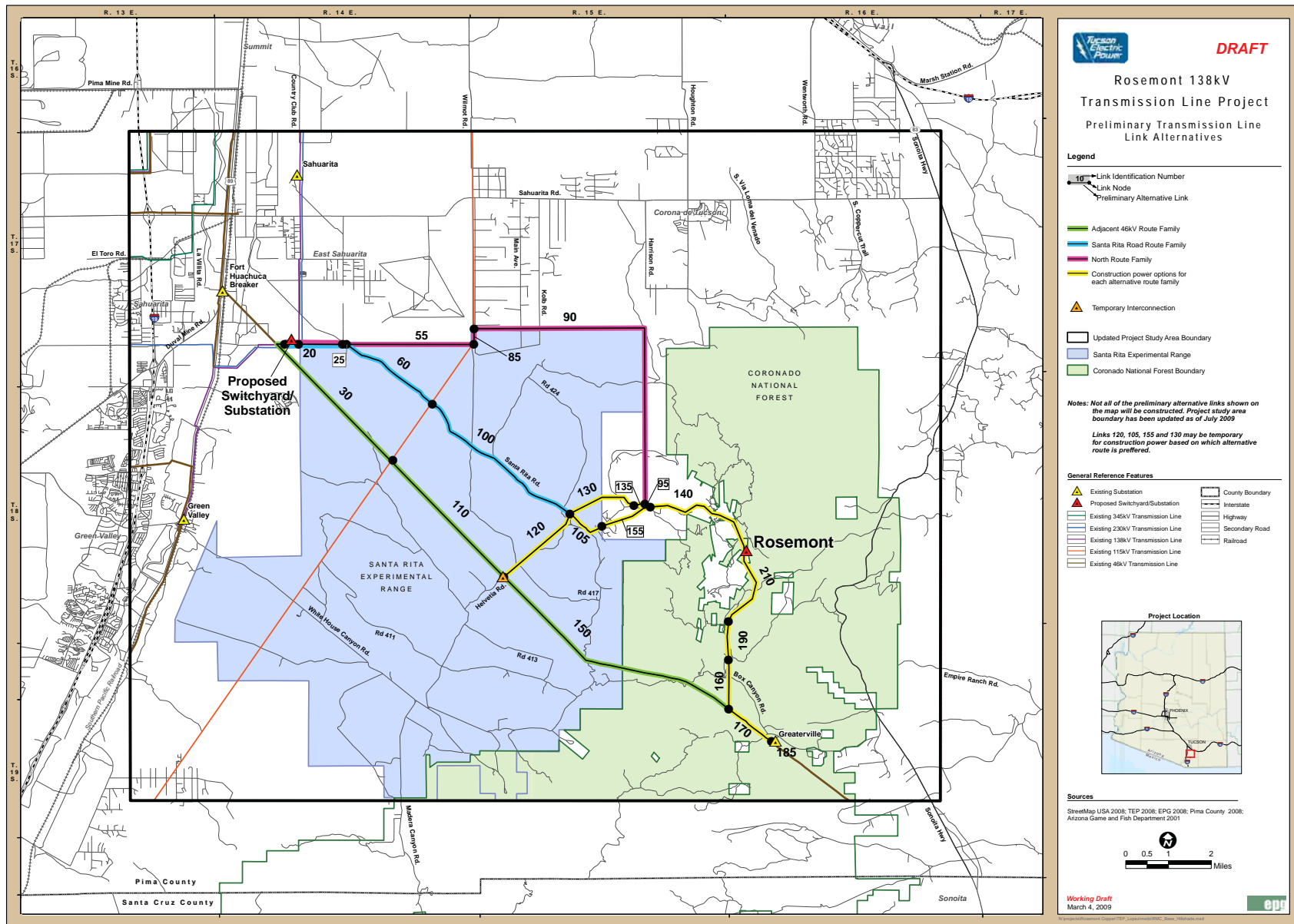
This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, and conductor sag will vary on a case-by-case basis.



**Rosemont Copper Transmission Line Project
Simulation 6 - Northern Route
Option 3 (Eliminated)
November 16, 2010**

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Alternative Routes Summary Table

Alternative Routes	Links Included	Approximate Length (in miles)		Route Considerations
		Permanent Power	Construction Power*	
Preferred Route	20, 25, 60, 100, 105, 155, 140, 170*, 160*, 190*, 210*	12.9	5.3 (separate from permanent power route)	<ul style="list-style-type: none"> Permanent line co-located with proposed water pipeline Preferred by Santa Rita Experimental Range and Arizona State Land Department Santa Rita Road designated scenic route by Pima County (February 2010) Residences near link 155
Alternative 1	20, 25, 60, 100, 130, 135, 95, 140, 170*, 160*, 190*, 210*	12.8	5.3 (separate from permanent power route)	<ul style="list-style-type: none"> Permanent line co-located with proposed water pipeline Majority of route supported by Santa Rita Experimental Range and Arizona State Land Department, with the exception of link 130 Santa Rita Road designated scenic route by Pima County (February 2010) Link 130, 135: new corridor, no co-location with pipeline, farther from residences
Alternative 2	30, 110, 120*, 105*, 155*, 140*	15.1	7.2 (common with permanent power route)	<ul style="list-style-type: none"> Co-located with and replaces 46kV structures to link 120 Requires new access for a portion of link 120 and temporary disturbance for interconnection Co-located with proposed water pipeline at Santa Rita Road Santa Rita Experimental Range concern for impacts associated with link 120 as well as links 30 and 110, prefers co-location with proposed pipeline Residences near link 155
Alternative 3	30, 110, 120*, 130*, 135*, 95*, 140*	15	7.1 (common with permanent power route)	<ul style="list-style-type: none"> Co-located with and replaces 46kV structures to link 120 Requires new access for a portion of link 120 and temporary disturbance for interconnection Co-located with proposed water pipeline at Santa Rita Road Santa Rita Experimental Range concern for impacts associated with link 120 and 130, as well as links 30 and 110, prefers co-location with proposed pipeline Link 130, 135: new corridor, no co-location with pipeline, farther from residences
Alternative 4	30, 110, 150, 170*, 160*, 190*, 210*	19.5	5.3 (common with permanent power route)	<ul style="list-style-type: none"> Co-located with and replaces 46kV structures to Greaterville Preferred by Town of Sahuarita Coronado National Forest stated least preferred for visual impacts Coronado National Forest concern with link 150 within Box Canyon Area New access required for link 160, which crosses Box Canyon Road (designated scenic road) Longest route
*Connection for construction power				

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Alternative Routes Recommended to be Carried Forward

- **Preferred Route** (Santa Rita Road – option 1)
 - Uses links 105, 155, Greaterville for construction interconnection
- **Alternative 1** (Santa Rita Road – option 3)
 - Uses links 130, 135, Greaterville for construction interconnection
- **Alternative 2** (Adjacent 46kV Line – option 1)
 - Uses links 105, 155, Helvetia Road/46kV for construction interconnection
- **Alternative 3** (Adjacent 46kV Line – option 2)
 - Uses links 120, 130, 135, Helvetia/46kV for construction interconnection
- **Alternative 4** (Adjacent 46kV Line – option 4)
 - Uses link 150, Greaterville for construction interconnection

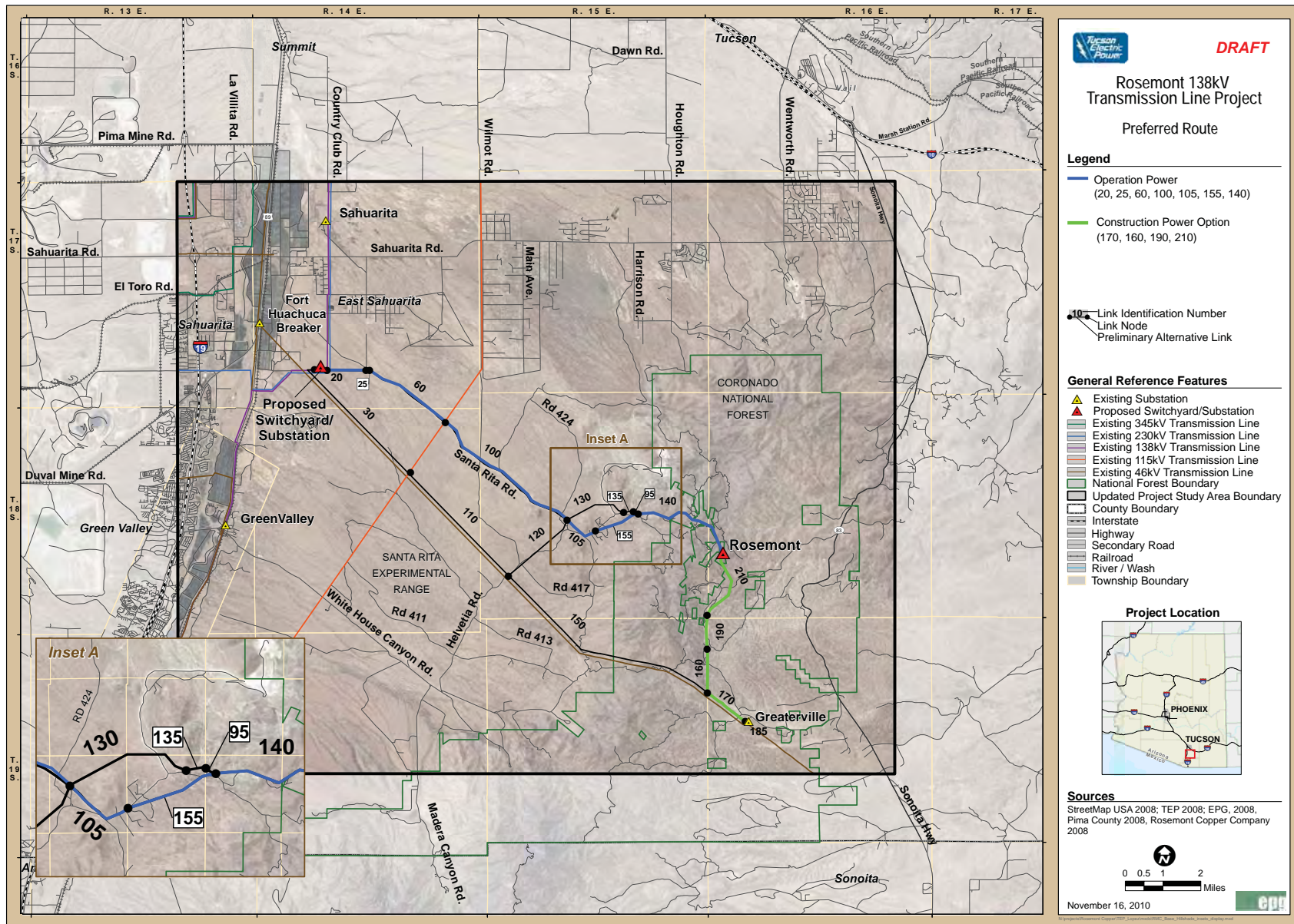


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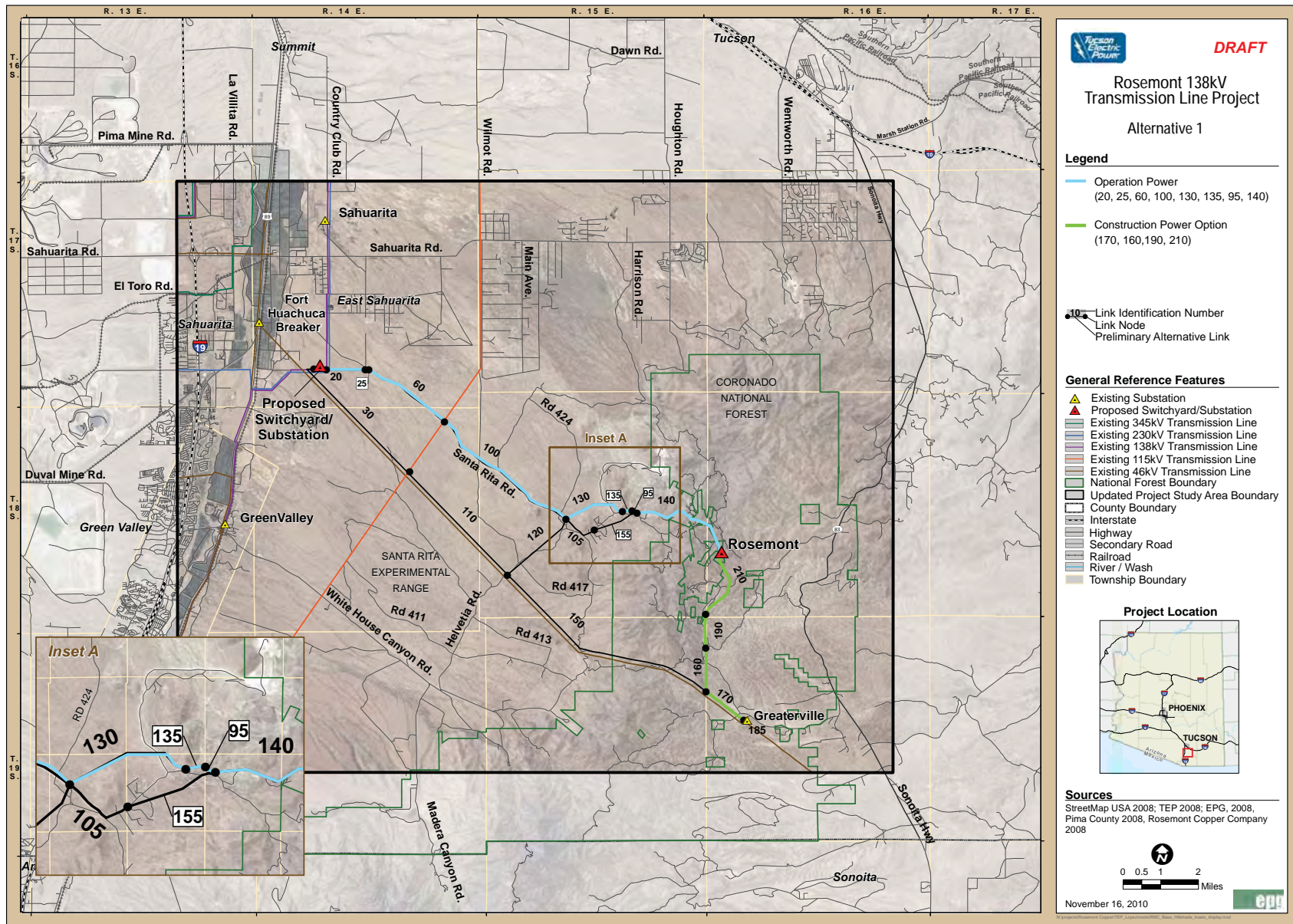
November 17, 2010

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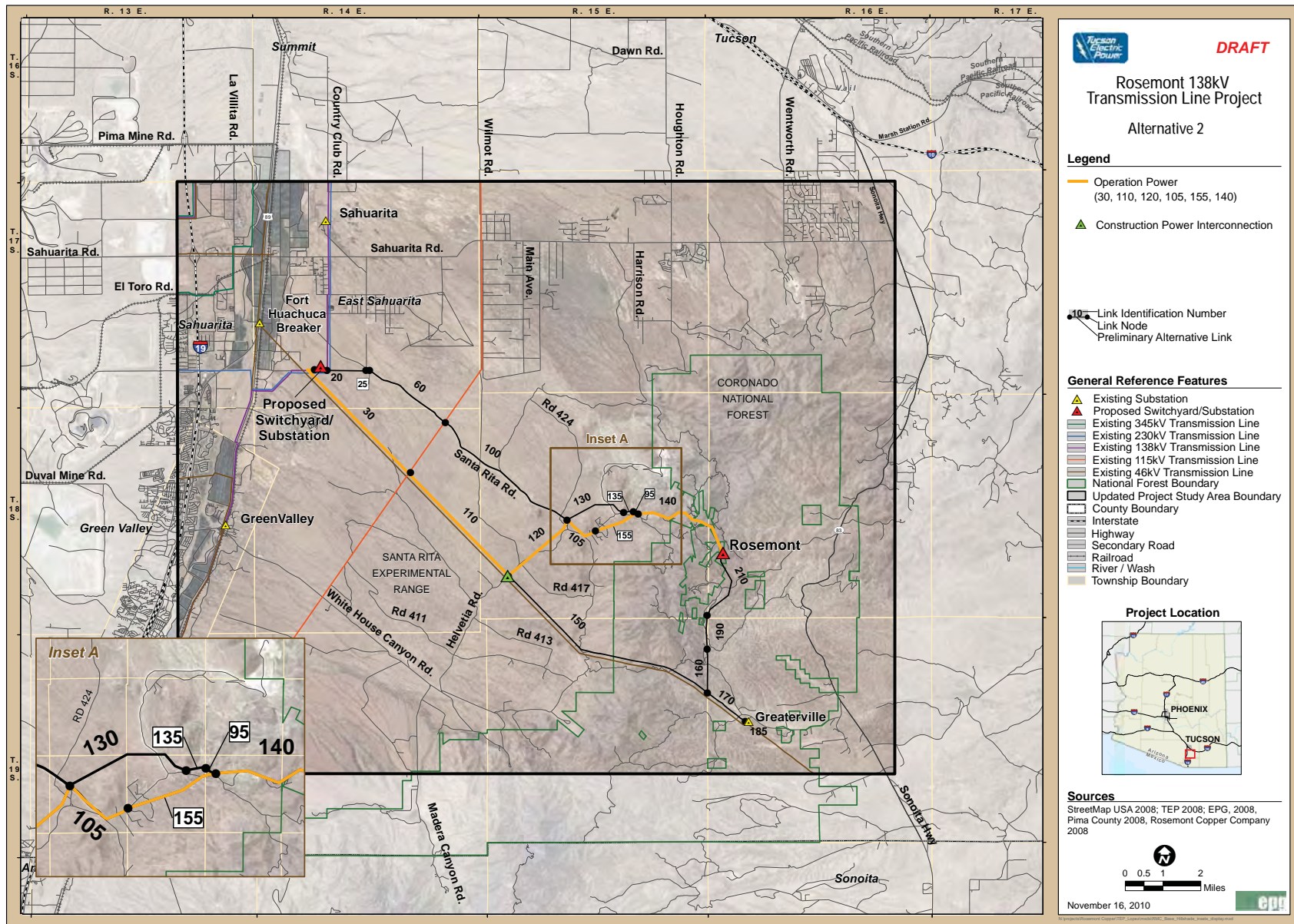
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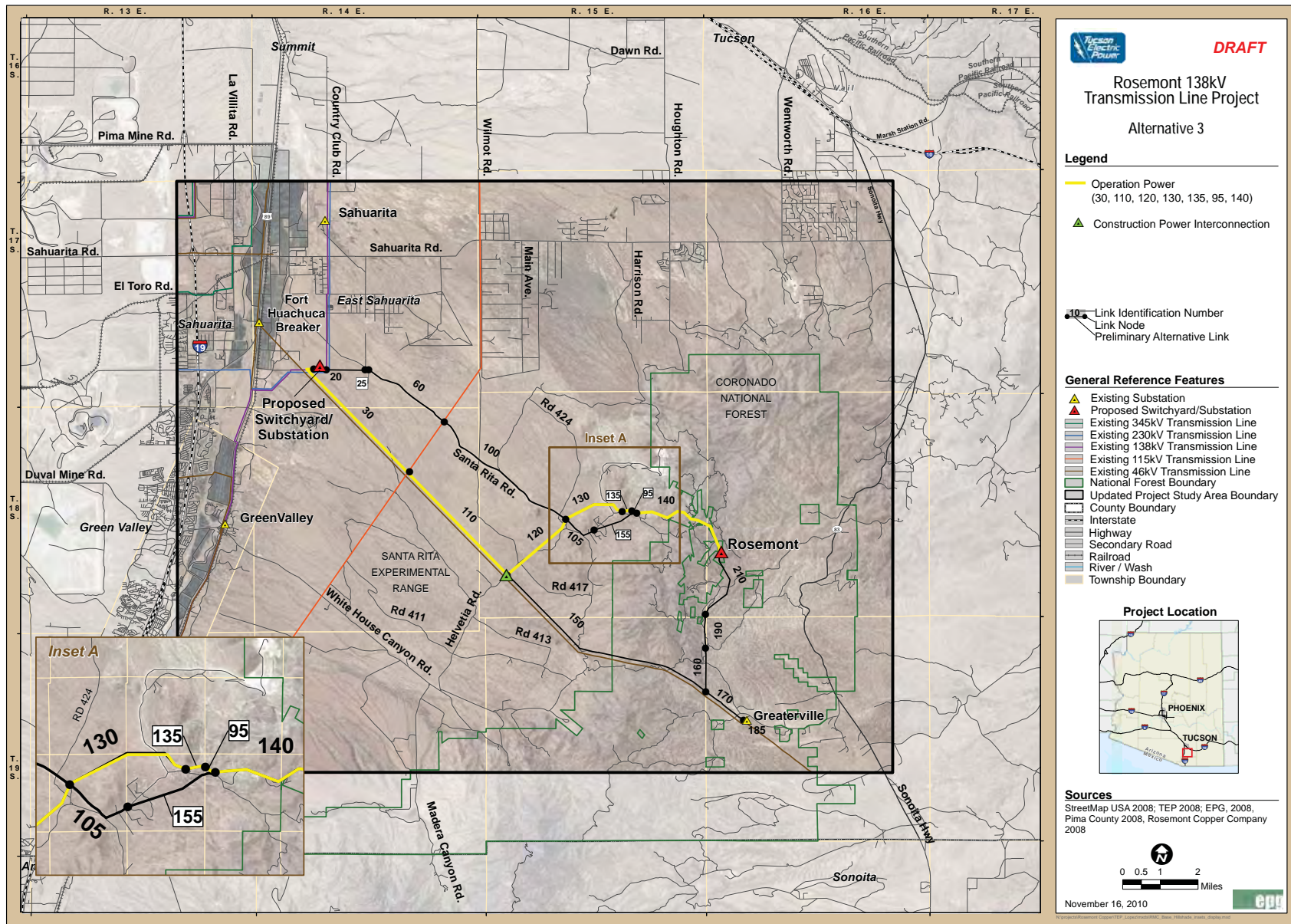
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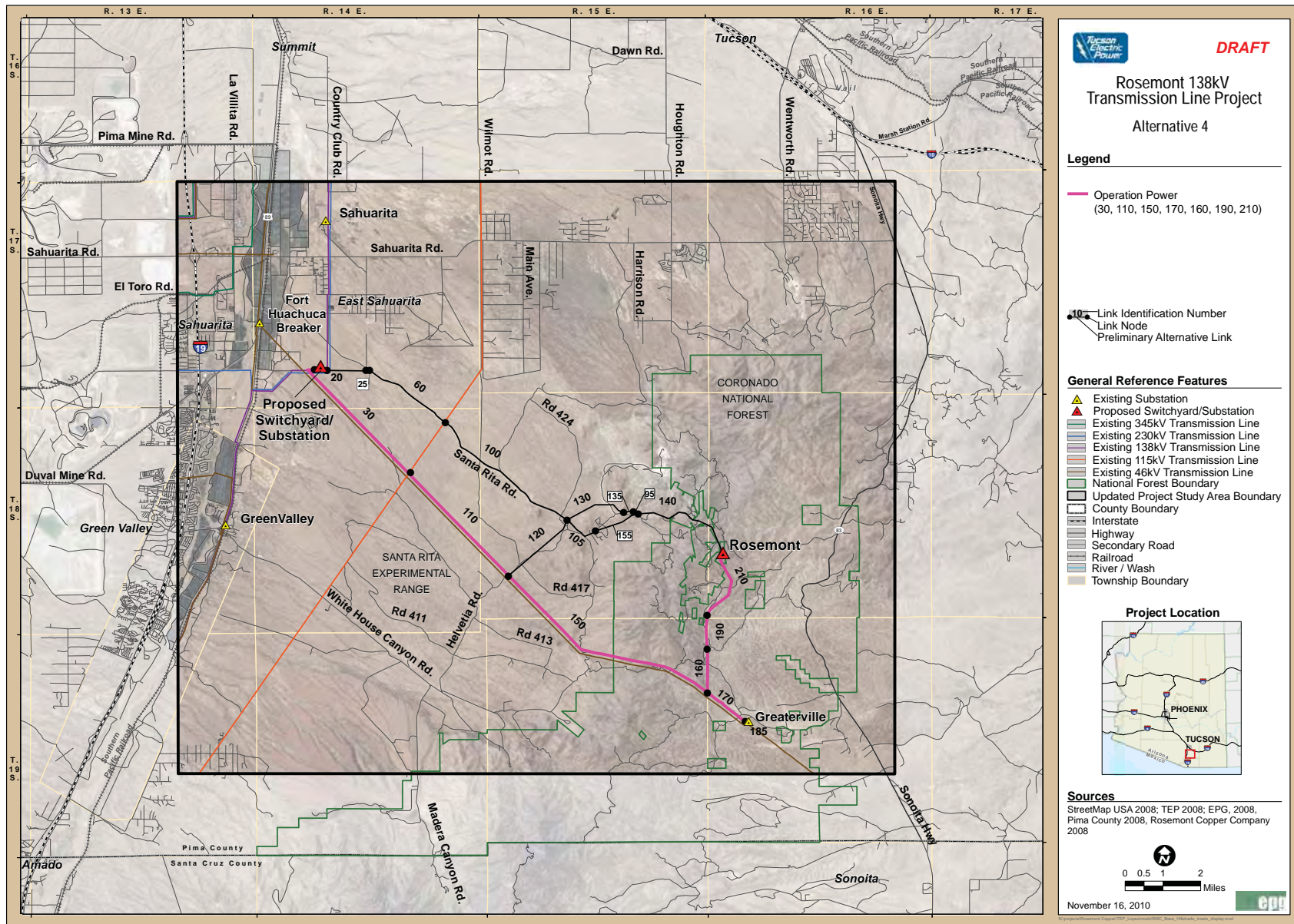
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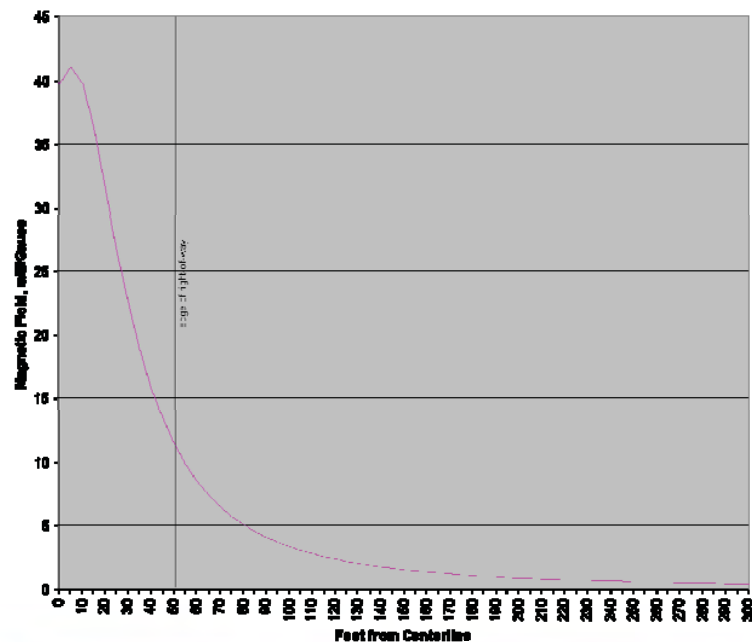
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Electric and Magnetic Fields (EMF)

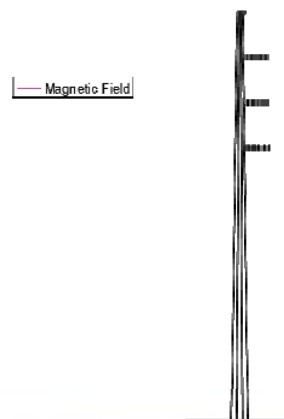
138 kV EMF, Vertical Config



EMF STRENGTH OF VARIOUS ELECTRICAL SOURCES AT VARIOUS DISTANCES						
EMF Source ¹	Distance	Strength	Distance	Strength	Distance	Strength
Microwave Oven	0.5 feet	200 mG	1.0 feet	4 mG	4.0 feet	2 mG
Vacuum Cleaner	0.5 feet	300 mG	1.0 feet	60 mG	4.0 feet	1 mG
Hair Dryer	0.5 feet	300 mG	1.0 feet	1 mG	4.0 feet	0 mG
Electric Shaver	0.5 feet	100 mG	1.0 feet	20 mG	4.0 feet	0 mG
138 kV Transmission Line, vertical ²	0 feet	40 mG	50 feet	11 mG	300 feet	0.4 mG

¹ Appliance magnetic field strengths are median values in milliGauss (mG) for typical 60 Hz electric current (source: USNIEHS, DOE 1995)

² 138kV power-line right-of-way is 100 ft wide, 0 feet values represent directly below the lines at lowest point of sag.



Additional EMF information resources are available from:

Environmental Health Information Service:
<http://www.niehs.nih.gov/health/topics/agents/emf/>
 World Health Organization: www.who.int/emf



Rosemont 138kV Transmission Line Project

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Agency and Public Participation Activities

- Agency briefings
- Stakeholder group meetings
- Field trip
- Public open house meetings
- Community briefings
- Newsletters
- Telephone information line
- Website (TEP)



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Public Participation Opportunities

- Public open house meetings
- Telephone information line (866) 632-5944
- TEP website: www.tep.com/company/news/rosemont
- Arizona siting committee FAQs website:
www.cc.state.az.us/Divisions/Utilities/Electric/LineSiting-FAQs.asp
- Media briefings
- Comment forms



Rosemont 138kV Transmission Line Project

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Comments

- Your comments will be reviewed and incorporated into the siting process.
- A court reporter is available tonight to record in writing your verbal comments on the proposed project, if you desire.
- Comments may also be submitted on the comment forms provided at the open house meetings or submitted electronically at the TEP website. Please submit comments by December 6, 2010.



Rosemont 138kV Transmission Line Project

November 17, 2010

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TEP Decision Elements

- Purpose and need
- Environmental analysis
- Public/agency input
- Permits
- Engineering analysis
- Ability to obtain right-of-way
- Overall cost



Rosemont 138kV Transmission Line Project

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Next Steps

- Finalize routes to be carried forward in CEC application
- File CEC application – first quarter 2011



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