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Transcript Exhibit(s)

Docket #(s): L-00000D-11-0068-00160

Exhibit # : A1- A10

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Date: Friday, April 01, 2011

Re:

APS Mazatzal 345kV Interconnection
L-00000D-11-0068-00160
Line Siting Committee Case No. 160
Evidentiary Hearing, taken on 03-22-2011

STATUS OF ORIGINAL EXHIBITS

FILED WITH DOCKET CONTROL

Applicant - Arizona Public Service Company - Exhibits A

1	Admitted
2	Admitted
3	Admitted
4	Admitted
5	Admitted
6	Admitted
7	Admitted
8	Not Offered
9	Admitted
10	Admitted

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Copy to: Via USPS
Line Siting Committee Chairman John Foreman
APS – Albert H. Acken, Esq.

Application for a Certificate of Environmental Compatibility

Mazatzal Substation and 345kV Interconnection Project

Prepared for:

Arizona Corporation Commission
Arizona Power Plant and Transmission Line Siting Committee

Submitted by:

Arizona Public Service Company

January 2011
Case No. ___

EXHIBIT
A-1
ADMITTED

BEFORE THE
POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

In the matter of the Application of Arizona Public Service Company, in conformance with the requirements of Arizona Revised Statutes 40-360, et seq., for a Certificate of Environmental Compatibility authorizing the Mazatzal Substation and 345kV Interconnection Project, which includes the construction of two 345kV transmission lines and a new 345/69/21kV substation, Section 4, Township 8 North, Range 10 East, adjacent to the intersection of the existing Four Corners–Cholla–Pinnacle Peak 345kV transmission lines and Forest Road 379, within the Tonto National Forest in Gila County, Arizona.

APPLICATION
FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

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LIST OF ACRONYMS AND ABBREVIATIONS

APS	Arizona Public Service Company
Arizona Register	Arizona Register of Historic Places
ARS	Archaeological Research Services
ASM	Arizona State Museum
AZGFD	Arizona Game and Fish Department
AZHGIS	Arizona Heritage Data Management System – Online Environmental Tool
BLM	Bureau of Land Management
CEC	Certificate of Environmental Compatibility
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
FR	Forest Road
GLO	General Land Office
HPTP	Historic Properties Treatment Plan
NEP	National Energy Policy
NRHP	National Register of Historic Places
OHV	Off-highway Vehicle
Project	Mazatzal Substation and 345kV Interconnection Project
RMP	Resource Management Plan
SHPO	State Historic Preservation Office
SR	State Route
TNF	Tonto National Forest
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VQO	Visual Quality Objective
WSC	wildlife species of special concern

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INTRODUCTION

Arizona Public Service Company (APS), as the project manager and Applicant, is seeking a Certificate of Environmental Compatibility (CEC) for the proposed Mazatzal Substation and 345kV Interconnection Project (Project). APS plans to construct and interconnect existing 345kV transmission lines, a new substation, and new sub-transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas of Gila County, Arizona. The length of the proposed 345kV interconnection transmission lines are approximately 600 feet. The Project study area is located on the east side of State Route (SR) 87, north of Arizona 188, and is entirely located on land administered by the U.S. Forest Service (USFS) Tonto National Forest (TNF) Tonto Basin Ranger District (Figure 1). APS has applied to the TNF for a Special Use Permit for construction, operation, and maintenance of the Project. As part of the requirements for the Special Use Permit, the National Environmental Policy Act (NEPA) process was engaged, including preparation of an Environmental Assessment (EA), a copy of which can be found in Exhibit B. The EA analyzed and eliminated several alternatives and evaluated two alternatives in greater detail. A Finding of No Significant Impact (FONSI) was issued in August 2010.

Even though the Project is located solely on federal lands managed by the Forest Service, and APS completed all required environmental diligence through the NEPA process, APS is requesting a CEC for the following reasons. First, in general, state requirements are not preempted so long as they do not conflict with federal law. In addition, A.R.S. § 40-360, et seq., does not explicitly exempt projects located on federal land. This approach is also consistent with the past practice of the Committee and the Commission to accept jurisdiction of CEC applications for projects located on federal lands managed by the Forest Service. Second, A.R.S. § 40-360(10) is relatively vague as to the type of projects that require a CEC. In an abundance of caution, APS decided to request a CEC for this Project.

PROJECT OVERVIEW

The Project involves the construction of a new 345/69/21kV substation and an interconnection with the existing eastern Cholla to Pinnacle Peak 345kV line which consists of two new 345kV transmission lines. The two 345kV transmission lines would interconnect in and out of the new substation. The new substation will also have two 69/21kV sub-transmission lines connecting the new substation to an existing 69/21kV transmission line (Figure 2). Construction of the Project would require improvements to the existing forest roads (FR), as well as structure modifications for the existing 345kV transmission structures in the corridor, including adding turning structures to the eastern line and a taller structure to the western line allowing the interconnection to cross underneath. The Project would be constructed with lattice structures for the 345kV lines.

PROJECT PURPOSE AND NEED

APS is the electric power supplier to the communities in the Payson, Rye, Gisela, Roosevelt Lake, Punkin Center, Mt. Ord, and adjacent areas. These areas have been experiencing considerable growth for the past several years. APS electric infrastructure is nearing its capacity

because of current and projected future growth. Currently, the Payson and Rye communities are supplied with electricity from the Preacher Canyon Substation, located approximately 10 miles east of Payson. Loss of the Preacher Canyon Substation source into Payson will result in load shedding affecting approximately 2,800 customers in the area. APS has determined that a new 345/69/21kV substation is needed, to ensure reliable service to existing customers and to expand the system to serve new development in the region.

Construction of the Project would ensure reliable electric service to both existing and future area residents and accomplish the following:

- Provide a looped transmission system and the ability to restore power in a timely manner in the event of an outage
- Provide capacity for projected load growth in the Payson, Rye, and Tonto Basin areas, and develop the 69kV system for meeting long-term needs
- Improve power quality in the area by providing a stable voltage source

The improvements would occur adjacent to an existing transmission line easement, which is consistent with the TNF Plan, as amended (U.S. Department of Agriculture 1985).

The Project is consistent with the National Energy Policy (NEP). The NEP's purpose is to increase domestic energy supplies, modernize and improve our nation's energy infrastructure, and improve the reliability of the delivery of energy from its sources to points of use. The use and occupancy of federal land, including NFS land, is an important element in facilitating the exploration, development, and transmission of affordable and reliable energy to meet these NEP goals.

PRELIMINARY ALTERNATIVES

APS evaluated alternative substation sites and eliminated the alternative sites from detailed study after initial consideration, because they would either (1) not adequately meet the Project purpose and need or (2) result in the potential for greater environmental resource impacts. Alternative sites considered included a site on private land; however, no appropriate sites were identified in the region that met engineering criteria or were of suitable size for the Project.

ENVIRONMENTAL STUDIES AND ROUTE SELECTION PROCESS

Beginning in early 2007, APS, in conjunction with its environmental consultant, EPG, Inc., studied and evaluated potential alternative sites as part of the initial scoping for the development of an EA for the Project (see Exhibit B-1). The EA was prepared for the TNF on behalf of APS. Several alternatives were studied and eliminated from further consideration, because they would either (1) not adequately meet the Project purpose and need, or (2) result in the potential for greater environmental resource impacts. However, two were carried forward to be studied in detail, the No Action Alternative and Proposed Action Alternative. The No Action Alternative provides a scenario without utility improvements. The Proposed Action would provide reliable

power year-round to the Payson, Rye, and Tonto Basin areas, as well as providing a second source of power to the region, which would help support future load growth and increased capacity. The TNF issued a FONSI for the Proposed Action on August 24, 2010, a copy of which can be found in Exhibit J. For additional information on the environmental studies prepared for this application, see Section 6, Description of the Environmental Studies, of this application.

PUBLIC INVOLVEMENT OVERVIEW

APS and EPG conducted public participation activities for the Project as part of the public involvement process (see Exhibit J for additional details of public involvement opportunities for the Project). APS began their public involvement process in February 2008. During this time, the following activities were completed: sent informational mailings (scoping letter), sent electronic communications (emails), and provided the opportunity for the public to comment. By APS performing this outreach, the public received information about the Project; thus able to comment on the Project; in turn, the Project team was better positioned to address questions or concerns, and incorporate changes to avoid issues later in the planning process. No objections to the Proposed Action Alternative were received from the local area residents. The Gila County Board of Supervisors supports the Project.

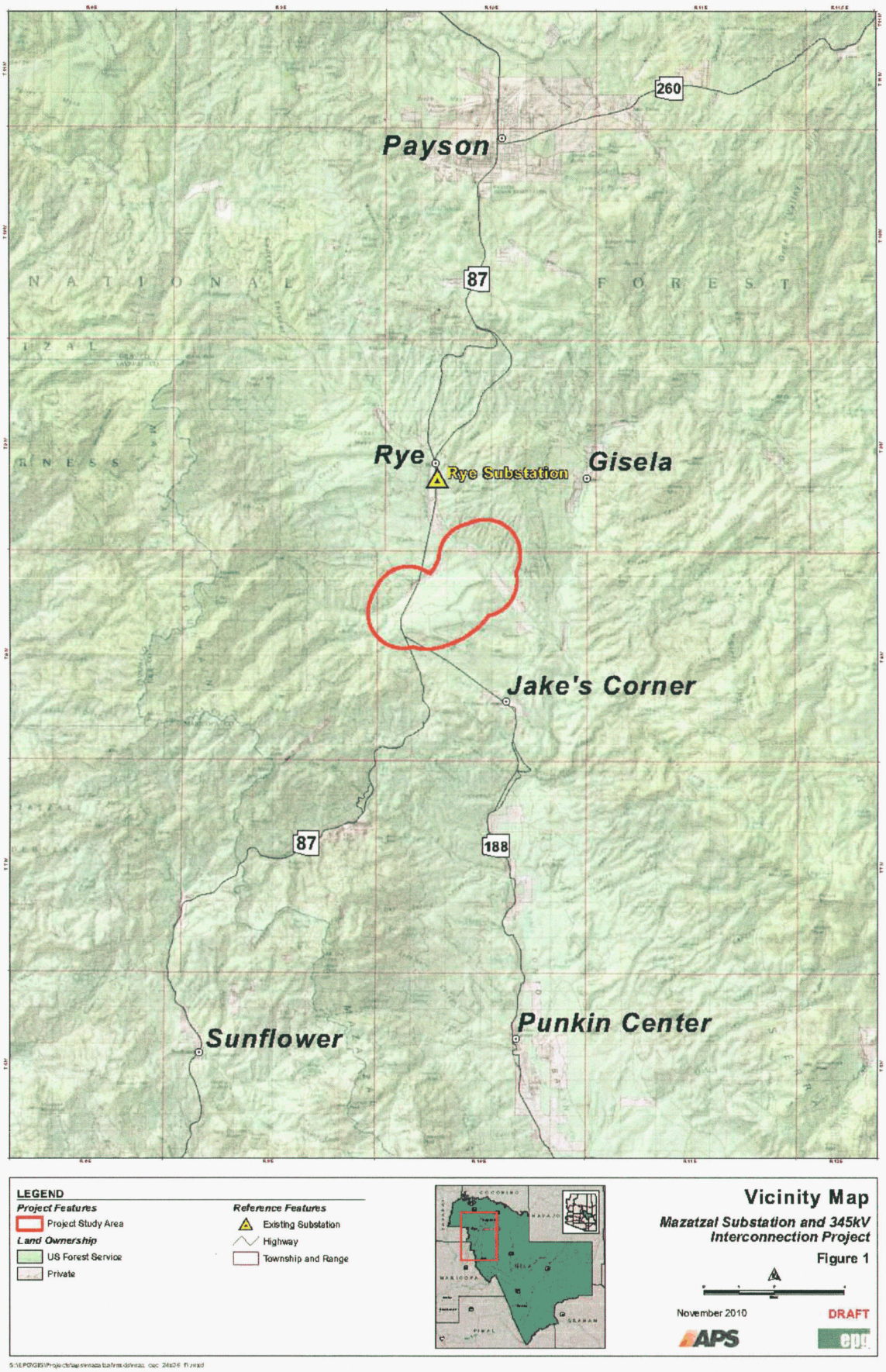

Figure 1 – Vicinity Map

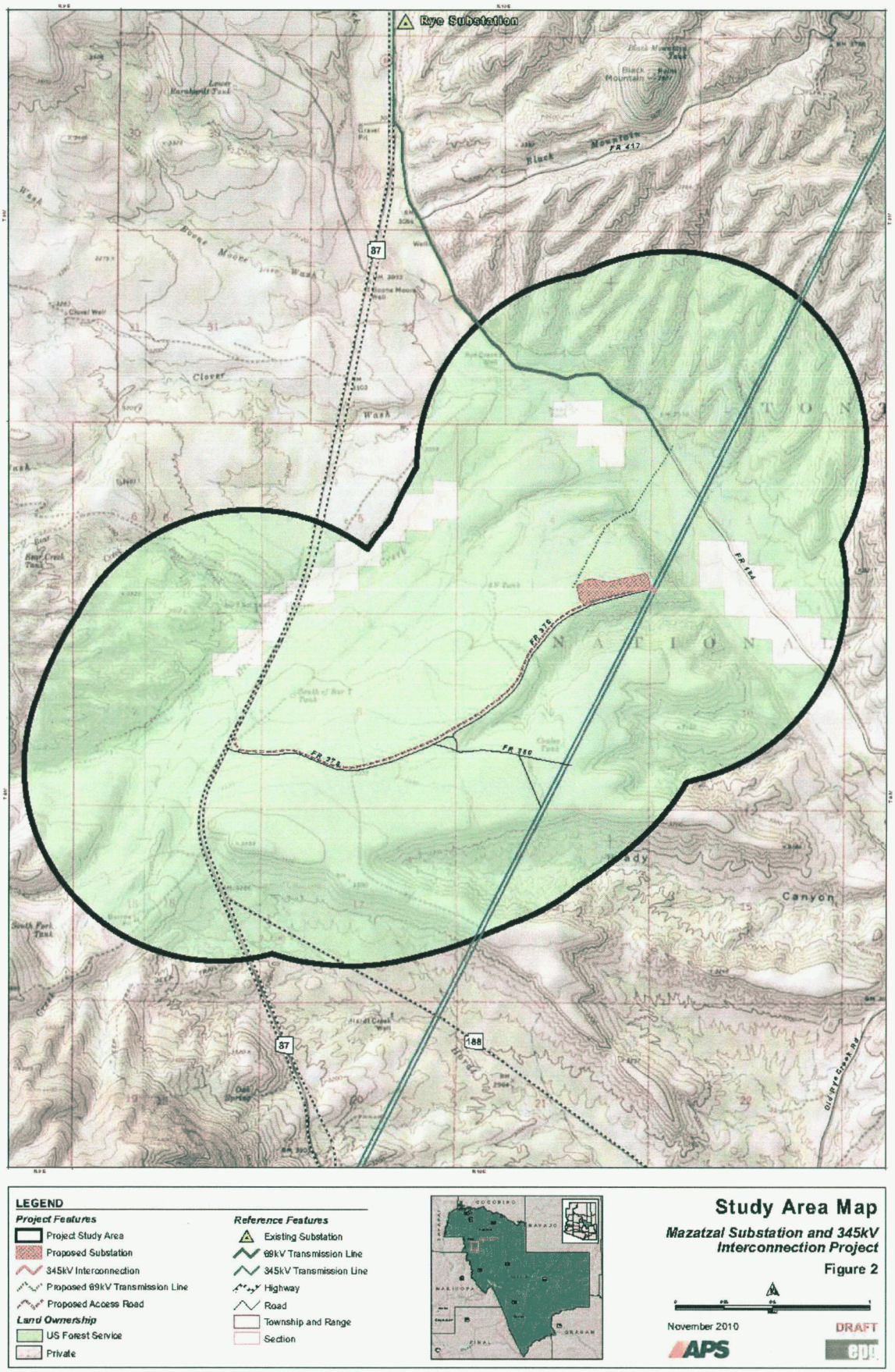

Figure 2 – Study Area Map

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APPLICATION FOR
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

(Pursuant to A.R.S. § 40-360.03 and 40-360.06)

1. ***Name and address of Applicant:***

   Arizona Public Service Company (APS)
   P.O. Box 53933
   Phoenix, Arizona 85072-3933

2. ***Name, address and telephone number of a representative of Applicant who has access to technical knowledge and background information concerning this application, and who will be available to answer questions or furnish additional information:***

   Brad Larsen
   Project Manager Transmission and Facility Siting
   Arizona Public Service Company
   P.O. Box 53933, M.S. 4030
   Phoenix, AZ 85072-3933
   (602)493-4338

3. ***Dates on which Applicant filed a Ten Year Plan in compliance with A.R.S. § 40-360.02, in which the facilities for which this application is made were described:***

2010	2006
2009	2005
2008	2004
2007	2003

4. ***Description of the proposed facilities:***

   a. ***Description of electric generating plant:***

      There is no electrical generating plant that is part of the Project.

   b. ***Description of the proposed transmission line:***

      i. ***Nominal voltage for which the lines are designed:***

         345kV alternating current single circuit

      ii. ***Description of proposed structures:***

         The transmission line will be constructed using lattice structures. The new structure on the west line will be approximately 130 to 140 feet tall. The two new dead-end structures to be installed on the east line cutting into the substation will be approximately 80 to 90 feet tall. The average span length between structures will be approximately 600 feet apart. The lattice structures will have a dulled gray finish, and conductors will have a non-specular finish in order to reduce visibility.

Exhibit G contains conceptual illustrations of the proposed structures to be used for the Project.

iii. Description of proposed substation:

The proposed 345/69/21kV substation site will be approximately 2,080 feet long by an average of 420 feet wide. An 8-foot tall chain link security fence will be installed around the substation facilities. Three strands of barbed wire will be located on top of the fence, making the total height of the fence approximately 9 feet. The fenced area of the substation will be no more than 20.1 acres. The new 345kV transmission line interconnections will enter the southeast corner of the substation and exit from the same general location (Figure 3).

iv. Purpose for constructing said transmission line and substation:

The Project will ensure reliable electric service to both existing and future area residents. It will achieve reliability by providing a stable voltage source, providing capacity for projected growth, and having a looped transmission system giving the ability to restore power in a timely manner if an outage should occur.

c. General Location

i. Description of the geographic points between which the transmission line will run:

The first 345kV transmission line interconnection will originate from the easternmost existing 345kV transmission line of the two existing 345kV transmission lines in the corridor, and proceed to the new substation, located approximately 600 feet to the west.

The second 345kV transmission line interconnection will proceed from the new substation, approximately 600 feet east to the new lattice structure on the existing easternmost 345kV transmission line of the two existing 345kV transmission lines in the corridor.

ii. Straight line distance between such geographic points:

The straight-line distance of the new 345kV transmission lines from the easternmost existing 345kV transmission line to the new substation, and from the new substation back to the easternmost existing 345kV transmission line is approximately 600 feet.

iii. Length of the transmission line for each alternate route:

The length of the 345kV transmission lines are approximately 600 feet.

d. Detailed Dimensions:

i. Nominal width of right-of-way requested:

ii. The Applicant is requesting approval of a total right-of way width of 400 feet for the 345kV transmission line interconnection.

iii. Nominal length of span:

The nominal length of span is 600 feet.

iv. Typical height of structures above ground:

Maximum height of supporting structures:

The maximum height will be 195 feet. The typical height of the supporting structures will vary from 130 feet to 140 feet for the new structure on the west line, and 80 to 90 feet for the two dead-end structures that will be installed on the east line and cut into the substation.

Minimum height of conductor above ground:

The minimum height of the 345kV transmission line conductor above existing grade will be 24.7 feet.

e. Estimated costs of proposed transmission lines and substation:

	Total Length of Transmission Line	Right-of-way Costs ($ millions)	Construction Costs ($ millions)	Total of Right-of-Way and Construction Costs ($ millions)
Proposed Route	600'	$1.0	$22.6	$23.6

f. Description of the proposed route:

The Project involves the construction and interconnection of a new 345/69/21kV substation and two new 345kV transmission lines that would connect from the easternmost existing Cholla to Pinnacle Peak 345kV lines in the corridor to the new substation, and from the new substation back to the same existing 345kV transmission line in the corridor. Construction of the Project would require improvements to the existing forest roads (primarily FR 379), as well as structure modifications for the two existing 345kV transmission lines in the corridor. The Project will be constructed with lattice structures for the 345kV lines.

g. Land Ownership:

The entire area on which the Project is located is federal land managed by the Tonto National Forest (TNF).

5. ***Jurisdictions:***

a) ***Areas of jurisdiction (as defined in A.R.S. Section 40-360) affected by this route:***

The Project is entirely within unincorporated Gila County, Arizona in the TNF, Tonto Basin Ranger District.

b) ***Designation of proposed sites or routes, if any, which are contrary to the zoning ordinances or master plans of affected areas of jurisdiction:***

The Project is not contrary to zoning ordinances or master plans of any affected areas of jurisdiction. Based on the environmental analysis and the decision process, the U.S. Forest Service has determined that the Project is compatible and consistent with the TNF Forest Plan. A Finding of No Significant Impact was issued by the TNF on August 24, 2010. The Project is consistent with the Gila County Comprehensive Plan.

6. ***Description of the environmental studies Applicant has performed:***

The environmental consulting firm EPG coordinated the preparation of the environmental assessment (EA) supporting the application. EPG worked as the third-party contractor to the TNF and conducted environmental studies that were utilized in the preparation of the EA (Exhibit B), pursuant to the National Environmental Policy Act. The Project is located entirely on the TNF.

Public and agency scoping, environmental resources inventory, and impact assessments were conducted for the Project. Impacts to land use, visual resources, cultural resources, biological resources, socioeconomics, geology, soils, water, noise, and air were evaluated. An inventory of the existing environment, as well as an assessment of potential environmental consequences as a result of this Project, was completed (see Exhibit B).

7. ***Rationale for alternative selection:***

The TNF granted the right-of-way for the substation adjacent to the corridor with the two existing 345kV transmission lines after analyzing the alternative substation sites for the Project. The analysis concluded that this location would pose the least amount of environmental impacts while meeting the purpose and need for the Project. The most logical alternative for interconnecting the two new 345kV transmission lines was within the substation right-of-way and corridor. By staying within these authorized and previously disturbed areas, environmental impacts and surface disturbances will be minimized.

ARIZONA PUBLIC SERVICE COMPANY

By: Brad Larsen

Brad Larsen, APS Project Manager

I HEREBY CERTIFY that on this 3rd day of February 2011, I have delivered to the Arizona Corporation Commission twenty-five (25) copies of this Application for a Certificate of Environmental Compatibility.

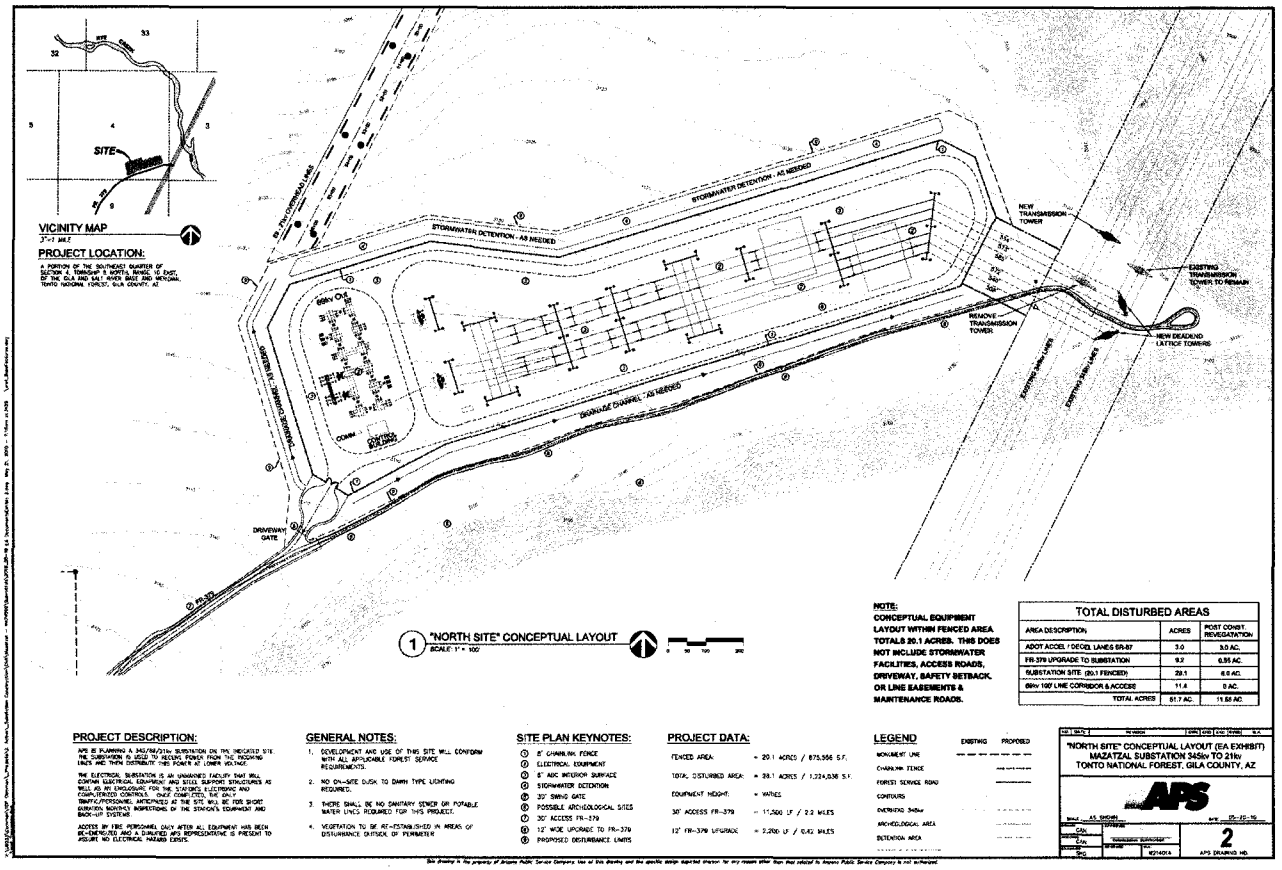

Figure 3 – North Site Conceptual Layout

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EXHIBIT A: LOCATION AND LAND USE MAPS

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit A(3) reads as follows:

"Where commercially available, a topographic map, 1:250,000 scale, showing any proposed transmission line route of more than 50 miles in length and the adjacent area. For routes less than 50 miles in length, use a scale of 1:62,500. If application is made for alternative transmission line routes, all routes may be shown on the same map, if practicable, designated by the applicant's order of preference."

Exhibit A-1 – Land Ownership
Exhibit A-2 – Existing Land Use
Exhibit A-3 – Future Land Use

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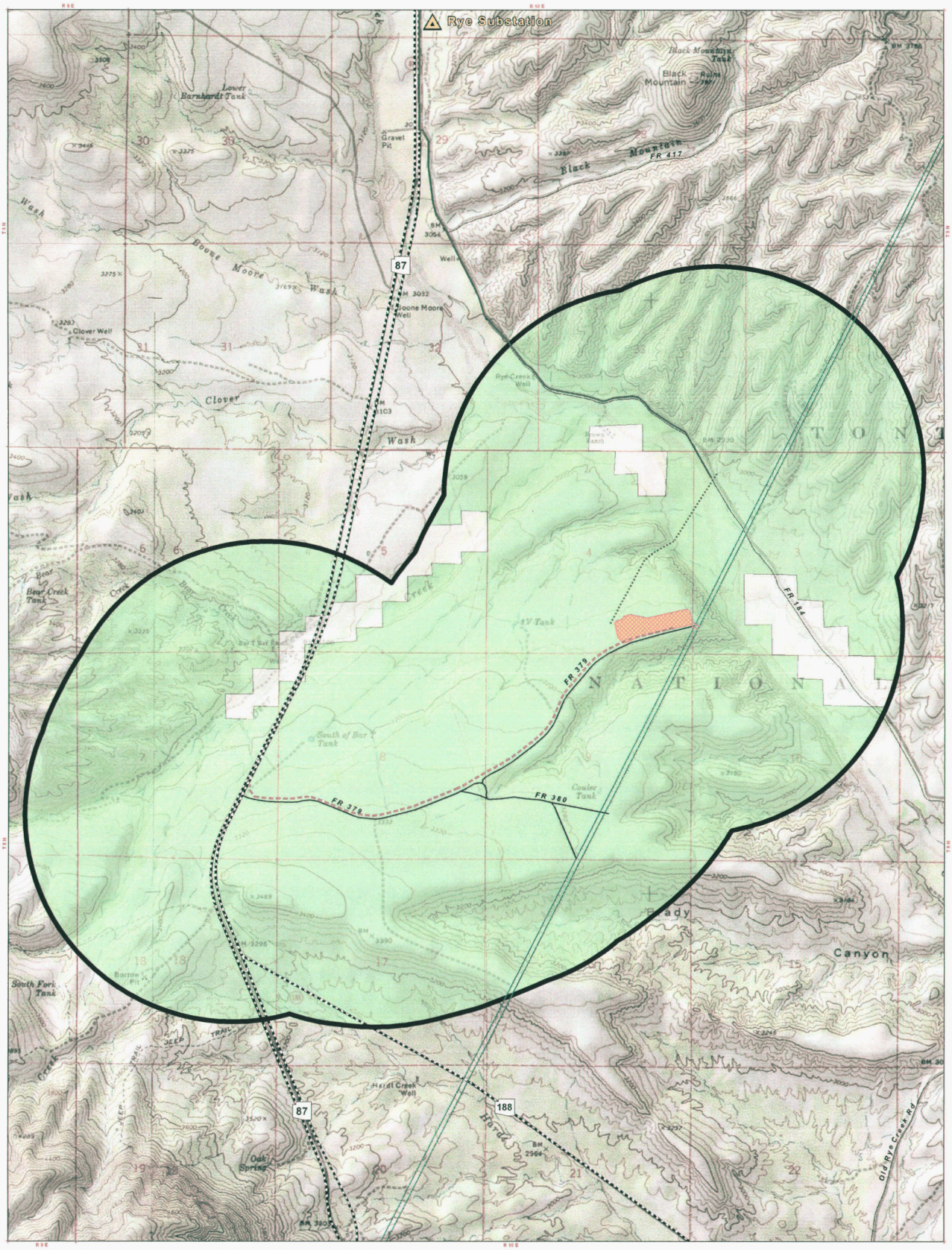


LEGEND

Project Features

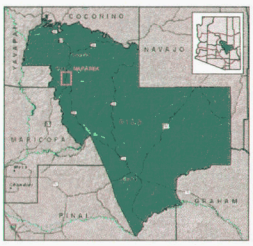
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

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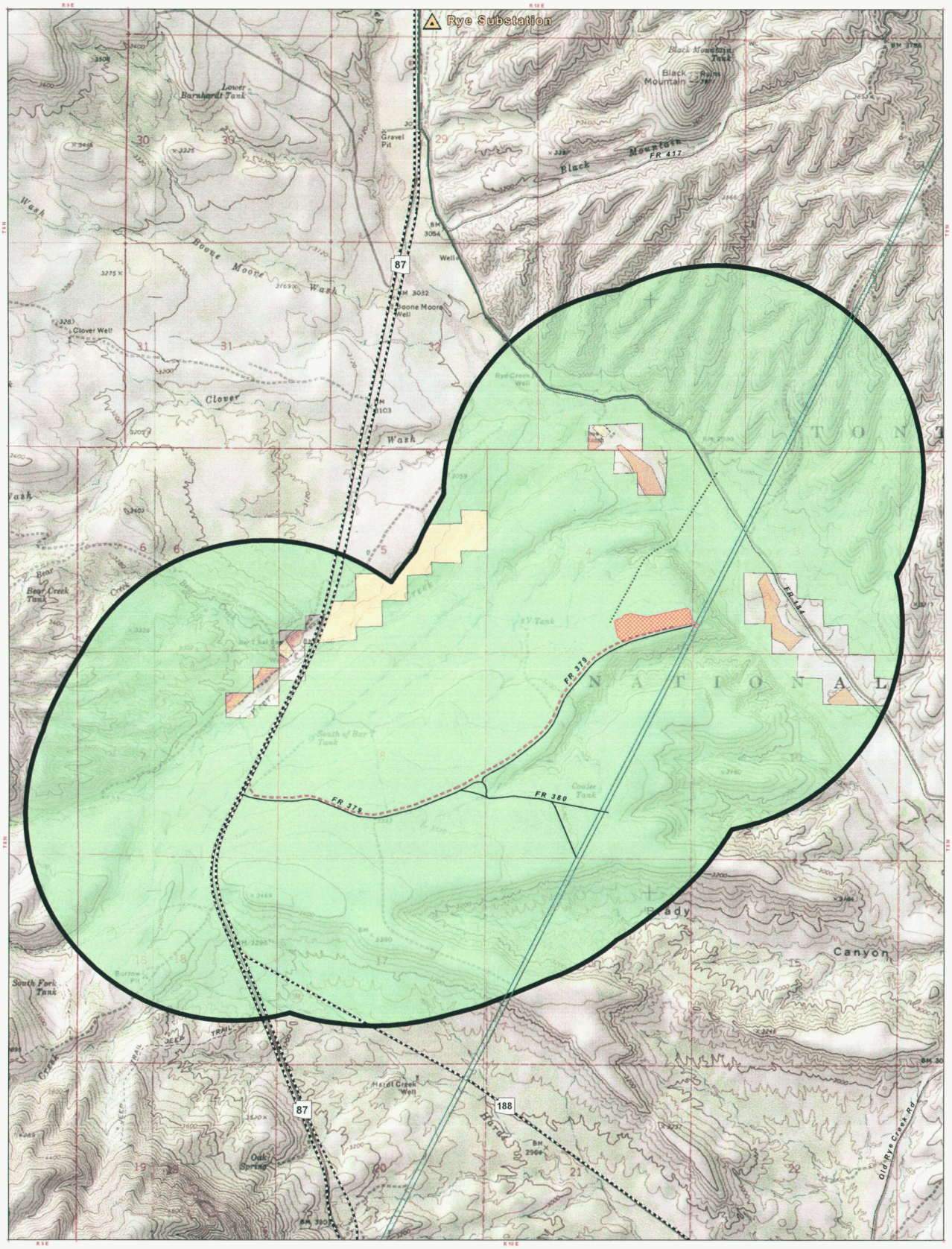


LEGEND

Project Features

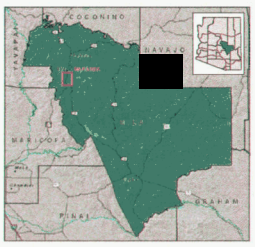
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Existing Land Use

- US Forest Service
- Agriculture
- Residential
- Vacant

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Existing Land Use

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-2

0 0.25 0.5 1 Miles

January 2011

APS

epg

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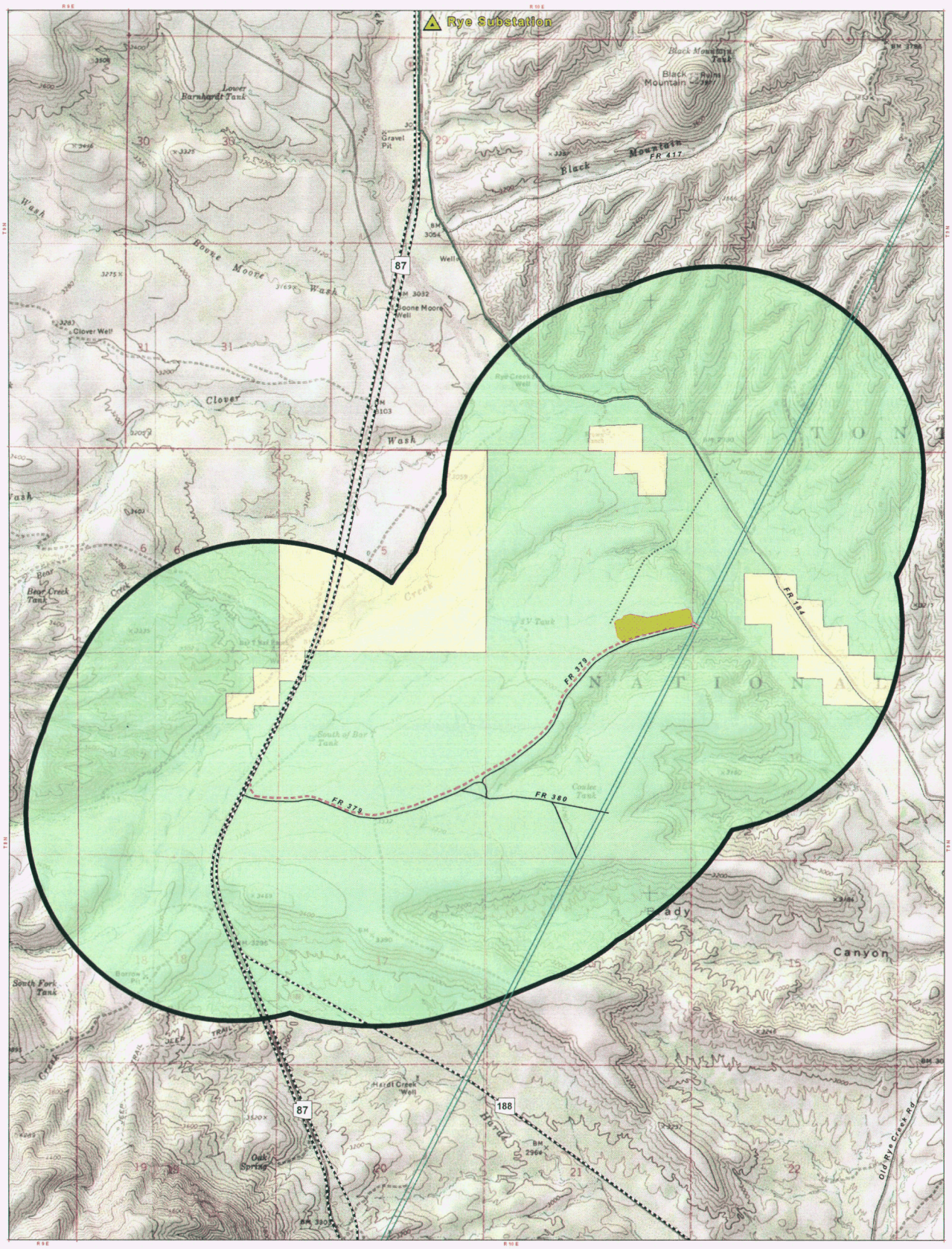


LEGEND

Project Features

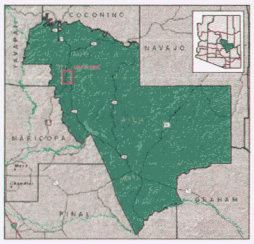
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Future Land Use

- US Forest Service
- Residential

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Future Land Use

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-3

January 2011

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EXHIBIT B: ENVIRONMENTAL REPORT

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit B reads as follows:

"Attach any environmental studies which applicant has made or obtained in connection with the proposed site(s) or route(s). If an environmental report has been prepared for any federal agency or if a federal agency has prepared an environmental statement pursuant to Section 102 of the National Environmental Policy Act, a copy shall be included as part of this exhibit."

Under the direction of the USFS, the environmental consulting firm EPG, Inc., third-party contractor, conducted environmental studies that were utilized in the preparation of an EA (Exhibit B-1). The EA was prepared for the proposed construction, operation, and maintenance of a 345/69/21kV substation, with two 345kV transmission interconnection lines and two 69/21kVsub-transmission lines (see the EA, attached as Exhibit B-1, for a more detailed discussion of all of the resources evaluated during the planning process).

LAND USE

Overview

The study area for the land use resources inventory was defined as a 1-mile buffer around the Project footprint that included the Project, plus ancillary facilities such as access roads, and distribution line structures. Data were collected and updated between January 2008 and June 2010. The land use inventory considered existing and future land uses within the study area, and was compiled through the review and interpretation of secondary data such as existing maps and planning documents, field reconnaissance, and contacts with the TNF and Gila County Community Development Department.

A description of conditions of the Project is described initially in this section, followed by a description of potential impacts to land use resources resulting from the Project.

Jurisdictions and Land Ownership

The jurisdictions and land ownership within the study area are shown in Exhibit A-1.

The Project is entirely within the TNF in unincorporated Gila County, Arizona.

Existing Land Use

The following categories of existing land use were identified and mapped based on information from aerial photography, existing maps, the TNF forest plan, and the *Gila County Comprehensive Plan*, and verified through field reconnaissance.

Residential

The majority of the study area has either no residences or widely dispersed rural residences, including a few ranches along FR 184. The only residential subdivision within the study area is Deer Creek Village made up of approximately 130 homes, along SR 87 and Deer Creek Drive; it is approximately 1 mile away from the existing 345kV transmission lines and the proposed substation. The residential areas range from low (0-2 dwelling units per acre) to medium density (2.1–8 dwelling units per acre). Other communities near to the study area would benefit from the construction of the Project, and no direct impacts would result.

Livestock Grazing

The majority of the land within the study area is NFS land that is primarily open rangeland used for livestock grazing. Two grazing allotments occur within the study area, Hardt Creek and Deer Creek (formerly the Bar T Bar). The Project occurs primarily within the Hardt Creek allotment, including the substation. A portion of FR 379 occurs within the Deer Creek allotment, which has 2,985 acres within the study area. The Hardt Creek grazing allotment encompasses 14,313 acres in total, 3,608 of which occur in the study area, and allows grazing of up to 200 adult cattle per year, plus 200 yearlings seasonally; the allotment is currently authorized to graze 125 cow/calf pairs. The Deer Creek allotment is also currently authorized to graze 125 cow/calf pairs. The Deer Creek term grazing permit is for a maximum of 310 adult cattle, plus a maximum of 40 yearlings seasonally, and up to 10 horses annually (Cress 2009). Two stock tanks associated with the Deer Creek allotment are located within the study area.

Transportation

The study area encompasses a mix of federal, state, county, and private roadways; the primary highways in the study area include SR 87 and SR 188. Regularly maintained and non-maintained NFS roads that provide access to TNF land also are present within the study area. FR 379, currently a two-track road, would be improved and used as an access road for the proposed substation and 345kV interconnection.

There are no other known improvements or additions planned for any federal, state, county, or private roadways within the study area.

Utilities

There are three existing power lines within the study area, all owned and operated by APS. The existing Four Corners–Cholla–Pinnacle Peak 345kV lines cross the study area running northeast to southwest, and as a result of the Project will interconnect with the proposed substation. An existing 69/21kV line begins in Rye, and then parallels SR 87 and FR 184. A 21kV distribution line and telephone lines are also present in the study area.

Other

There are no commercial, industrial, public, or airport facility land uses within the study area.

Future Land Use

Future land use was mapped based on information contained in existing planning documents (including the *Gila County Comprehensive Plan* and the TNF Plan), as well as correspondence with staff and officials representing federal, state, and county agencies. The TNF forest plan information was the primary basis of this analysis and represents guidelines for development until specific development plans are proposed.

Tonto National Forest

The TNF Plan provides an in-depth description of current and future management directions and emphases for 47 Management Areas within the TNF. The Management Area identified within the study area is 6J (General Management Area). Within this area, the emphasis is to manage for a variety of renewable resources, with primary emphasis on wildlife habitat improvements, livestock forage production, and dispersed recreation. Watersheds would be managed to improve them to a satisfactory or better condition. Other management emphases include improving and managing riparian areas to benefit riparian-dependent resources; prescribed fire would be used as a tool to meet or achieve desired resource objectives (U.S. Department of Agriculture 1985).

Gila County

The Gila County Comprehensive Plan (2003) is intended to help maintain and enhance opportunities and qualities that attract people, and to assist the county to realize its potential through logical and planned decision making. The plan discusses the future land uses envisioned for unincorporated portions of the county.

Within the study area, the majority of land is not categorized by the comprehensive plan, including the substation site, because it is under NFS jurisdiction. The areas that are classified are shown as residential. The Deer Creek Village subdivision is shown as a core of "Residential – 2 to 3.5 dwelling units per acre" surrounded by an area of "Residential – 0.4 to 1.0 dwelling units per acre." The private lands along FR 184/Rye Creek Road are shown as "Residential – 0 to 0.1 dwelling units per acre" (Gila County Comprehensive Plan 2003).

Recreation

Recreational uses on the TNF land within the study area are primarily of a dispersed nature, including hiking, wildlife viewing, bird-watching, Off-highway Vehicle (OHV) driving, and hunting. Deer Creek Trailhead is the only recreation site within the vicinity of the study area and is located approximately 2.5 miles from the proposed substation and interconnection. Hunting is allowed on the TNF, under permit from the Arizona Game and Fish Department (AZGFD). The study area is within the AZGFD's Game Management Unit 22. Game species include Bighorn

Sheep, Black Bear, elk, javelina, Merriam's Turkey, Mountain Lion, Mule Deer, White-tailed Deer, Tree Squirrel, and quail. The study area is generally within an area where elk, javelina, deer, and quail are hunted. Hunting seasons vary by species, but generally occur between the months of August and January.

The Project falls entirely within the Roaded Natural class, which is characterized by predominantly natural-appearing environments with moderate evidences of the sight and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for construction standards and design of facilities.

Potential Impacts

Short-term impacts include the disturbance of land during construction of the Project, and potential restrictions on access to FR 379. Long-term impacts include the removal of approximately 41 acres for the Project from areas available for dispersed recreation. The Project would also remove approximately 33 acres of the Hardt Creek and 4 acres of the Deer Creek allotments from use for grazing. The Project would not modify the ROS classification in the area and would be in compliance with management objectives. Because existing access (FR 379) would be upgraded, new access roads would not be necessary for the substation.

Mazatzal Substation Project Environmental Assessment

Exhibit B-1

August 2010

Prepared for the Tonto National Forest

On behalf of APS

Prepared by EPG, Inc.

MAZATZAL SUBSTATION PROJECT
ENVIRONMENTAL ASSESSMENT

Prepared for:
Tonto National Forest
Tonto Basin Ranger District

On behalf of:
APS

Prepared by:
EPG, Inc.

August 2010

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

Arizona Public Service Company (APS) is the electric power supplier to communities in the Payson, Rye, Roosevelt Lake, and adjacent areas in Gila County, Arizona. APS is proposing to construct a 345/69/21 kilovolt (kV) substation and approximately 1 mile of two parallel double-circuit 69/21kV sub-transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas. The proposed substation and sub-transmission lines corridor would be located entirely on land administered by the U.S. Forest Service (USFS) Tonto National Forest (TNF) Tonto Basin Ranger District. Construction of the Proposed Action would require improvements to the existing Forest roads. APS has applied to the TNF for a Special Use Permit for the construction, operation, and maintenance of the proposed facilities. Because the Proposed Action would be located on federal land, the Mazatzal Substation Project (Project) must comply with the National Environmental Policy Act of 1969 (NEPA), as amended, 42 United States Code, § 4321 *et seq.* As required by NEPA, this Environmental Assessment (EA) has been prepared to document the potential effects of the Project and to provide information to assist the TNF in making a decision.

DOCUMENT STRUCTURE

The purpose of an EA is to disclose the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action. This EA has been prepared in compliance with NEPA and other relevant federal and state laws and regulations. The document is organized into seven parts, as follows:

- Chapter 1 – Purpose and Need: This section includes information on the purpose of and need for the Project, the Project proponent's proposal for achieving that purpose and need, and the relationship of the Project with the TNF Land Management Plan (Forest Plan). This section also details the public involvement efforts of the USFS for this Project.

- Chapter 2 – Alternatives Considered: This section describes the alternatives considered, including the No Action Alternative, the proponent's Proposed Action, and potential mitigation measures.

- Chapter 3 – Affected Environment and Environmental Consequences: For each resource area, the affected environment is described, followed by the anticipated effects of each alternative on the resource. Cumulative impacts and other reasonably foreseeable actions are also described.

- Chapter 4 – Consultation and Coordination: This section provides a list of agencies and individuals consulted during the development of the EA.

- Chapter 5 – List of Preparers and Reviewers: This section provides a list of the preparers and reviewers of the document.

- Chapter 6 – References
- Appendix A – The appendix provides detailed information about the biological resources that may occur in the vicinity of the Proposed Action.

PROJECT LOCATION

The Project study area is located on National Forest System (NFS) land on the east side of State Route (SR) 87, north of Arizona 188, in the Tonto Basin Ranger District of the TNF, Gila County, Arizona. The proposed substation would be located adjacent to the intersection of the existing Four Corners–Cholla–Pinnacle Peak 345kV transmission lines and Forest Road (FR) 379, in Section 4, Township 8 North, Range 10 East. The proposed 69/21kV sub-transmission lines would be approximately 1 mile in length and would originate at the proposed substation, connecting with the endpoint of an existing 69/21kV sub-transmission line located in Section 33, Township 9 North, Range 10 East. Construction of the Proposed Action would require improvements to FR 379 (Sections 4, 7, 8, and 9, Township 8 North, Range 10 East). See Figure 1 for a location of the study area and the Proposed Action.

PURPOSE AND NEED FOR ACTION

APS is the electric power supplier to the communities in the Payson, Rye, Gisela, Roosevelt Lake, Punkin Center, Mt. Ord, and adjacent areas. These areas have been experiencing considerable growth for the past several years. Due to the current and projected future growth of these areas, the APS electric infrastructure is nearing its capacity. Currently, the Payson and Rye communities are supplied with electricity from the Tonto Substation, located in Payson, which feeds a substation in Rye. The Tonto Substation is nearing its capacity during peak summer loads, as well as during icing conditions in winter. APS has determined that a new 345/69/21kV substation is needed, to ensure reliable service to existing customers and to expand the system to serve new development in the region.

Construction of the proposed Mazatzal 345/69/21kV Substation and associated 69/21kV sub-transmission lines would ensure reliable electric service to both existing and future area residents and accomplish the following:

- Provide a looped transmission system and the ability to restore power in a timely manner in the event of an outage
- Provide capacity for projected load growth in the Payson, Rye, and Tonto Basin areas and develop the 69kV system for meeting long-term needs
- Improve power quality in the area by providing a stable voltage source

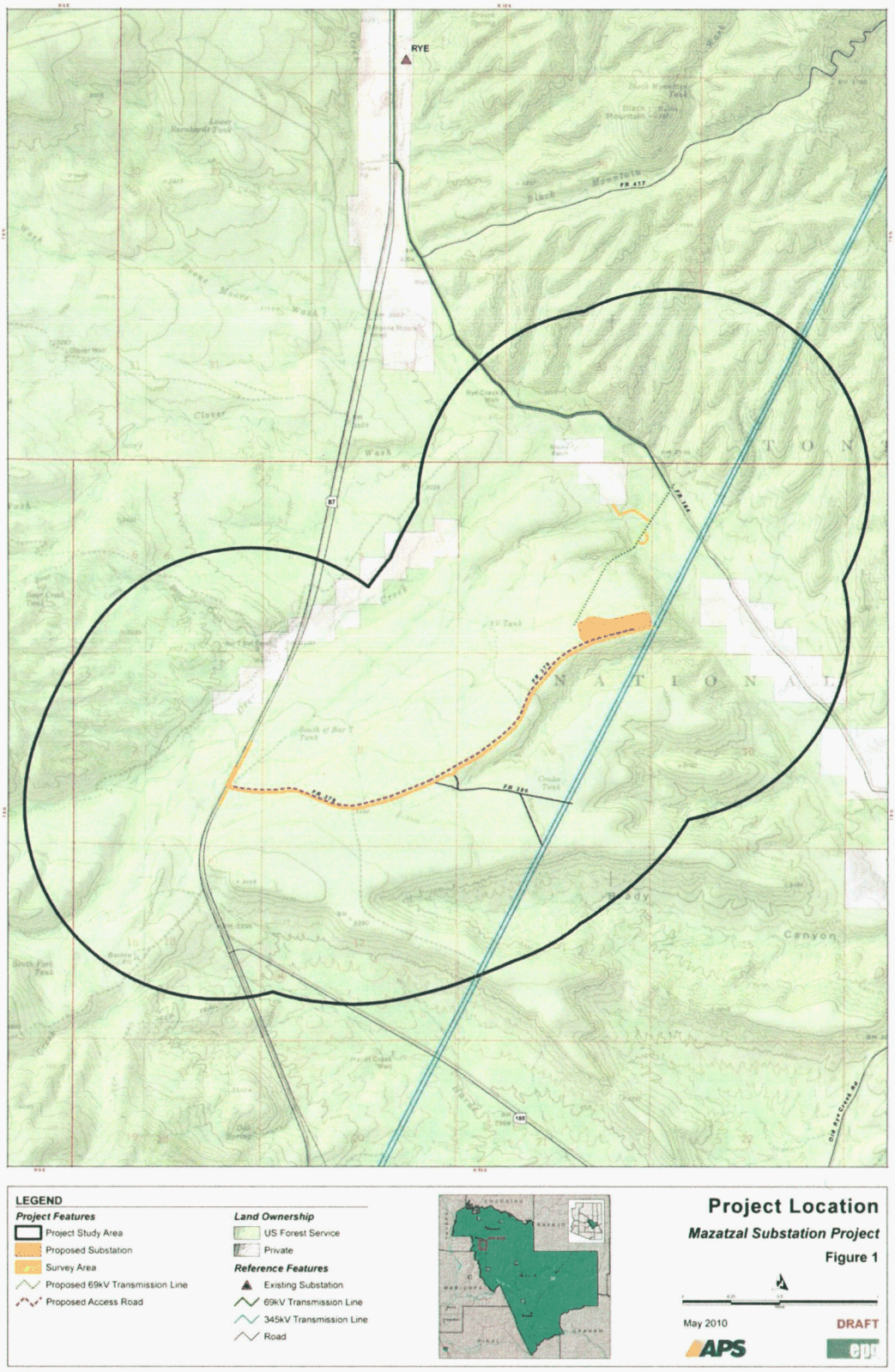

Figure 1 Study Area Map

The improvements would occur adjacent to an existing transmission line easement, which is consistent with the TNF Plan, as amended (U.S. Department of Agriculture [USDA] 1985).

The Project is consistent with the National Energy Policy (NEP). The NEP's purpose is to increase domestic energy supplies, modernize and improve our nation's energy infrastructure, and improve the reliability of the delivery of energy from its sources to points of use. The use and occupancy of federal land, including NFS land, is an important element in facilitating the exploration, development, and transmission of affordable and reliable energy to meet these NEP goals.

PROPOSED ACTION

The action proposed by APS to meet the purpose and need is to construct, operate, and maintain a 345/69/21kV substation and two double-circuit 69/21kV sub-transmission lines. The Project would require the TNF to authorize a Special Use Permit for a 50-year term. The proposed substation would be located adjacent to the existing Four Corners–Cholla–Pinnacle Peak 345kV transmission lines and FR 379, and require up to 28.1 acres for construction and maintenance. Approximately 1 to 2 miles of new parallel, 69/21kV sub-transmission lines would connect the proposed substation to existing facilities. The 69/21kV sub-transmission lines are proposed to be built on 75–95 foot steel poles; some poles may need to be taller due to terrain and environmental constraints. The proposed sub-transmission line routes would require a right-of-way width of 100 feet for the majority of the route.

Construction of the Proposed Action would require improvements to the existing access roads for the delivery of materials, transformers, equipment, and all-weather maintenance access. Approximately 2.5 miles of existing unimproved road would need to be widened and improved to an all-weather surface to allow for the specialized equipment transport passage. Temporary deceleration/acceleration turning lanes from SR 87 to FR 379 may be added for construction. The temporary lanes could include the following:

- 400' by 12' (with a 140' taper) northbound deceleration lane in the right shoulder
- 400' by 12' (with a 140' taper) southbound deceleration lane in the median
- 1,350' by 16' northbound acceleration lane in the right shoulder
- 2,000' by 16' southbound acceleration lane in the median
- Crossover lane between southbound deceleration lane and northbound SR 87 lanes in the median

Some modifications would be needed at the intersection of SR 87 and FR 379, along with the Arizona Department of Transportation (ADOT) right-of-way fence to improve the turning radius and to allow for heavy hauling equipment. Expected ground disturbance totals are shown in Table 1-1, and are shown on Figure 2.

Table 1-1 Ground Disturbance	
Project Component	**Expected Disturbance**
Substation Site (includes 345kV right-of-way)	28.1 acres
FR 379 to substation	8.5 acres
FR 379 sub-site to tower access	0.74 acre
SR 87 deceleration lane north	0.4 acre
SR 87 acceleration lane south	1.3 acres
SR 87 median	0.1 acre
SR 87 acceleration lane north	0.77 acre
SR 87 deceleration lane south	0.4 acre
69kV/21kV right-of-way	11.4 acre
Total	**51.71 acres**

DECISION FRAMEWORK

The TNF is the lead agency for this EA, and the Forest Supervisor is the deciding official for the Project. If the analysis demonstrates no significant impacts, the responsible official would then issue a Decision Notice and Finding of No Significant Impact. The decision to be made is whether to approve a right-of-way grant for the construction, operation, and maintenance of the proposed substation and sub-transmission lines on National Forest land, as proposed. The deciding official can:

- select the No Action Alternative
- select the Proposed Action and apply mitigation measures
- apply monitoring requirements if necessary
- approve or deny a special use permit for the construction of the proposed substation and sub-transmission lines

If implementation occurs, construction is estimated to begin as early as summer of 2010 and be completed in spring of 2013.

REGULATORY REQUIREMENTS AND COORDINATION

The primary legal basis for granting easements across NFS land is the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1715). Under FLPMA, the Secretary of Agriculture is authorized to grant, issue, or renew rights-of-way over, upon, or through such land for utility corridors, roads, trails, highways, railroads, canals, etc. Issuance of permits, leases, and easements under FLPMA is guided by the regulations of 36 CFR 251. Rights-of-way permits are granted across NFS land when the need for such is consistent with planned uses.

A Cultural Resource Clearance Report and Biological Assessment and Evaluation Report have been completed for the Project. No further environmental analysis is needed for these resources. Stipulations for coordination of implementation activities are specified in the Cultural Resource Clearance Report and Biological Assessment and Evaluation Report.

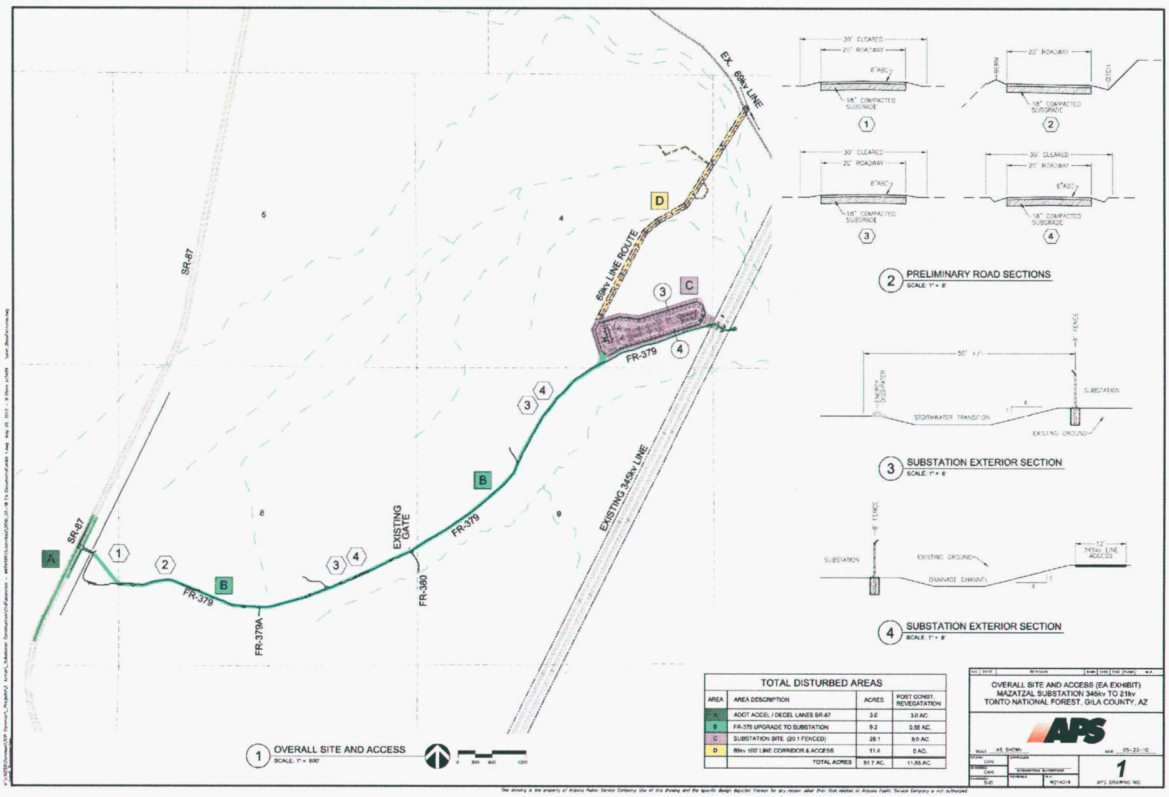

Figure 2 Planned Disturbance Areas

Before construction surveying begins, required permits would be obtained to conduct engineering surveys on federal land.

APPLICABLE LAWS AND EXECUTIVE ORDERS

Shown below is a partial list of federal laws and executive orders pertaining to project-specific planning and environmental analysis on federal land. While most pertain to all federal land, some of the laws are specific to Arizona. Disclosures and findings required by these laws are contained in Chapter 3 of this document.

- NEPA, as amended
- FLPMA of 1976
- National Historic Preservation Act of 1966 (NHPA), as amended
- Multiple Use – Sustained Yield Act of 1960
- Clean Air Act of 1970, as amended
- Endangered Species Act of 1973 (ESA)
- Forest and Rangeland Renewable Resources Planning Act of 1974
- National Forest Management Act of 1976
- Clean Water Act of 1977
- American Indian Religious Freedom Act of 1978 (AIRFA)
- Archaeological Resource Protection Act of 1980
- Executive Order 11593 (cultural resources)
- Executive Order 12898 (environmental justice)
- Executive Order 12962 (aquatic systems and recreational fisheries)
- Executive Order 13112 (Invasive Species)
- Executive Order 13186 (Migratory Bird Treaty Act)

FOREST PLAN CONSISTENCY

Based on the environmental analysis and the decision process, the USFS has determined that the Project is compatible and consistent with the TNF Forest Plan. Applicable Forest Plan standards and guidelines and the rationale for how the Project meets the standards and guidelines are discussed below.

The Forest Plan provides the following management directions:

> *Provide that right-of-way grants are confined to designated corridors to the extent practicable.* *-Forest Plan, page 20-1*
>
> *Requests for utility corridors will be coordinated to locate needed facilities within existing corridors where feasible. Design and construction practices will meet the standards defined in National Forest Landscape Management Volume 2, Chapter 2, USDA Handbook 478.* *-Forest Plan, Page 46*

To meet the standards and guidelines stated above, the action alternative evaluates siting adjacent to the existing Four Corners–Cholla–Pinnacle Peak 345kV transmission lines and existing NFS

roads. Siting the substation directly underneath the 345kV transmission lines would not be practicable from an engineering standpoint, and locating the substation adjacent to the transmission lines meets the intent of the utility corridor by keeping electrical facilities on the forest consolidated. The USFS would make a final determination on compatibility and consistency with the Forest Plan when the environmental analysis and decision process is complete.

PUBLIC INVOLVEMENT AND SCOPING ISSUES

The Council on Environmental Quality defines scoping as "an early and open process for determining the scope of issues to be addressed," related to a Proposed Action (40 CFR 1501.7). The scoping process is used to invite public participation to help identify issues and obtain public comment at various stages of the environmental analysis process. Although scoping begins early in a project, it is an interactive process that continues until a decision is made.

The public scoping process identified issues and concerns that were analyzed and are addressed in the EA. The TNF announced the Project and the 30-day scoping comment period through legal notice publications in the *Payson Roundup* and *East Valley Tribune*. A scoping letter was mailed to approximately 115 agencies and individuals on February 5, 2008. The letter included the Project description, purpose and need, description of alternatives, and a map. Comments have been and will continue to be accepted by mail, electronic mail, and by telephone.

This Project has been listed in the TNF's Schedule of Proposed Actions (SOPA) since the January 1 to March 31, 2008 SOPA.

Scoping Issues

Comments from scoping were evaluated in order to identify potential issues. During the scoping process and over the course of the Project, eight comments relating to this Project were received. Comments included questions about the Project purpose and need, Project alternatives, visual concerns, biological concerns, concerns about Waters of the U.S., grazing resources, and cultural resources concerns. Two tribes responded to express their desire to continue to engage in consultation regarding cultural resources. One tribe expressed their preference for the avoidance and preservation of cultural resources. Two letters of support for the Project were received. Lastly, two requests for additional information were received by telephone. None of the comments received affected the selection of the alternatives studied in detail. A table of public and agency comments and the disposition of raised issues is included in the Project record.

CHAPTER 2: ALTERNATIVES CONSIDERED

This chapter describes and compares the alternatives that were evaluated to meet the Project needs of increasing electrical system capacity and reliability in the Tonto Basin area. The alternatives are presented here in comparative form, defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Two alternatives, the No Action Alternative and Proposed Action, were analyzed in detail. The No Action Alternative provides a scenario without utility improvements. The Proposed Action consists of construction of a substation, two sub-transmission lines, and road improvements, in combination with mitigation measures. The proposed substation site and sub-transmission line routes are shown in Figure 1 (see Chapter 1).

ALTERNATIVES CONSIDERED AND ELIMINATED FROM DETAILED STUDY

The following alternatives were eliminated from detailed study after initial consideration, because they would either not adequately meet the Project purpose and need or result in the potential for greater environmental resource impacts.

Alternative Substation Sites

A location on private land was considered; however, no appropriate sites were identified in the region that met engineering criteria or were of suitable size for the Project.

The alternative substation sites were located near the proposed site, on NFS land. One would have been located on the north side of the intersection of FR 184 and the existing 345kV transmission lines. This site would have required extensive cut and fill earthwork, slope engineering, and re-channeling of natural drainages to accommodate the substation equipment. Because of the additional ground disturbance (including extensive disturbance to existing cultural sites), this alternative was eliminated.

The second alternative substation site would have been located north of FR 380 and south of FR 379, on the east side of the existing 345kV transmission lines. An additional 1 mile of two sub-transmission lines would have been needed to connect to the existing facilities. This site had a large number of cultural features, and the potential for biological and visual resource impacts, and thus was eliminated from further consideration.

The third alternative substation site would have been located near the intersection of the existing 345kV transmission lines and FR 380, on the east side of the 345kV lines. This site would have required considerable road construction and site excavation. Due to a large number of cultural sites and sensitive plant species that would have been impacted, as well as skyline visibility from SR 87 and FR 184, the site was eliminated from further consideration.

Alternative Transmission Technologies

Voltage options and underground construction were considered and are described as follows:

Voltages: The Project is proposed as two single-circuit 69/21kV sub-transmission lines. Other voltage options are higher, 115kV and up. These higher voltage lines provide bulk transfer capability, but would have provided more power than required for the area. Alternative transmission line voltages would not fulfill the purpose and need of the Proposed Action, and thus were eliminated from further consideration.

Underground Construction: Underground systems typically have been constructed under circumstances of short distances in which overhead lines are not feasible (e.g., in the vicinity of airports, urban centers). Underground lines require considerably higher ground disturbance than overhead construction, and underground lines are vulnerable to washouts and incidental excavation. Outages for underground lines could last days or weeks while the problem is being located and repaired. Overhead lines suffer outages more often, but they can usually be corrected within hours, resulting in increased reliability.

For these reasons, undergrounding the proposed route (or portions of it) was eliminated from further study.

ALTERNATIVES CONSIDERED IN DETAIL

Alternative 1 – No Action

If the proposed substation and sub-transmission lines are not constructed, the existing facilities would continue to serve the Payson, Rye, and Tonto Basin areas. Under the No Action Alternative, there would be no ground disturbance or resource impacts; however, the purpose and need for the Project would not be met. Reliability of the existing electrical infrastructure would diminish with continued electrical load growth, and the probability of power outages would increase.

Alternative 2 – Proposed Action

As described in Chapter 1, construction of the Proposed Action would result in an additional pathway for power to reach the Payson, Rye, and Tonto Basin areas. The proposed 345/69/21kV substation and associated 69/21kV sub-transmission and distribution lines would be in operation year-round to provide reliable power to the community. The introduction of another pathway for electrical power is expected to provide public benefits by providing a second source of power to the region, as well as supporting future load growth and increased capacity.

Proposed Substation

The proposed substation and 69/21kV sub-transmission lines would be located on NFS land, in Section 4, Township 8 North, Range 10 East, approximately 1.5 miles east of SR 87. The

proposed substation site would be located near the intersection of the existing 345kV transmission lines and FR 379, on the west side of the 345kV lines. The proposed substation would be interconnected with the existing 345kV lines and the new 69/21kV sub-transmission lines. The existing west 345kV tower closest to the substation would be removed and a taller lattice structure (up to 140 feet tall) would be installed. The new tower would allow the eastern line to pass under the western 345kV line. Two lattice tower structures would be installed in the existing 345kV right-of-way to bring the 345kV line into and out of the substation. Approximately 200 feet of new right-of-way would be needed for the 345kV line between the existing right-of-way and the proposed substation. Approximately 2.5 miles of existing forest roads (FR 379) would need to be widened and improved. Temporary deceleration/acceleration turning lanes may be constructed to facilitate the safe movement of construction vehicles from SR 87 to FR 379; these lanes would be removed when no longer required. The temporary lanes could include the following:

- 400' by 12' (with a 140' taper) northbound deceleration lane in the right shoulder
- 400' by 12' (with a 140' taper) southbound deceleration lane in the median
- 1,350' by 16' northbound acceleration lane in the right shoulder
- 2,000' by 16' southbound acceleration lane in the median
- Crossover lane between southbound deceleration lane and northbound SR 87 lanes in the median

The proposed substation site would require an area approximately 2,080 feet long by an average of 420 feet wide. An 8-foot-tall chain link security fence would be installed around the substation facilities. Three strands of barbed wire would be located on top of the fence, bringing the total height of the fence to 9 feet. The fenced area of the substation would be no more than 20.1 acres (Figure 3). Site preparation would include cut and fill, grading, and recontouring. An area extending 50 feet from the substation fence would be affected by construction activities, creating a disturbed area of 28.1 acres.

Sub-transmission Lines

Approximately 1–2 miles of parallel new 69/21kV sub-transmission lines would be needed to connect the proposed substation with existing facilities. The proposed sub-transmission lines would require a right-of-way width of 100 feet and a lease term of 50 years. The typical sub-transmission line poles (Figure 4) would be made of steel, average 75–95 feet tall with a maximum height of 105 feet, and be spaced between 250 and 400 feet apart. The 69/21kV sub-transmission line routes would leave the northwestern end of the new substation, head northeast and descend a side drainage to the Rye Creek floodplain, travel north-northeast, then turn east to cross the Rye Creek channel and connect with the existing 69/21kV line. The existing 69/21kV line that serves Payson and Rye (a separate line) would continue to provide electricity to the area.

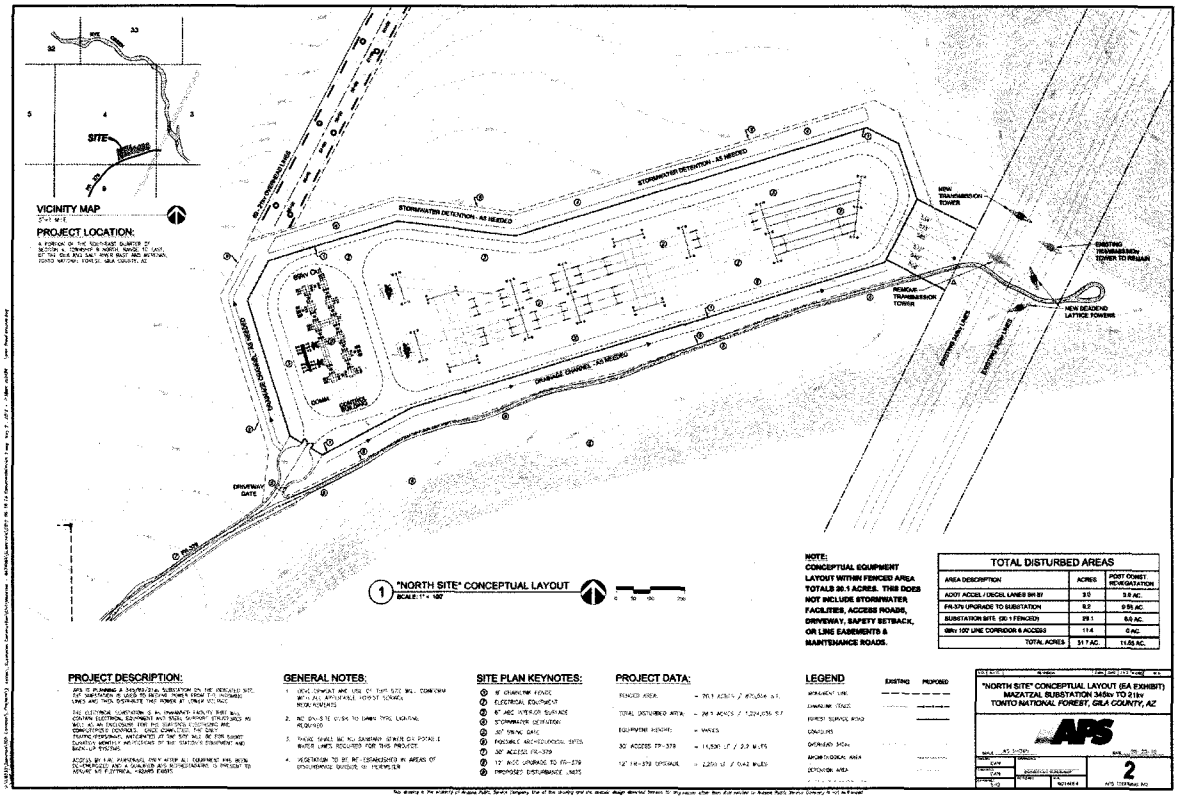

Figure 3 Substation Site

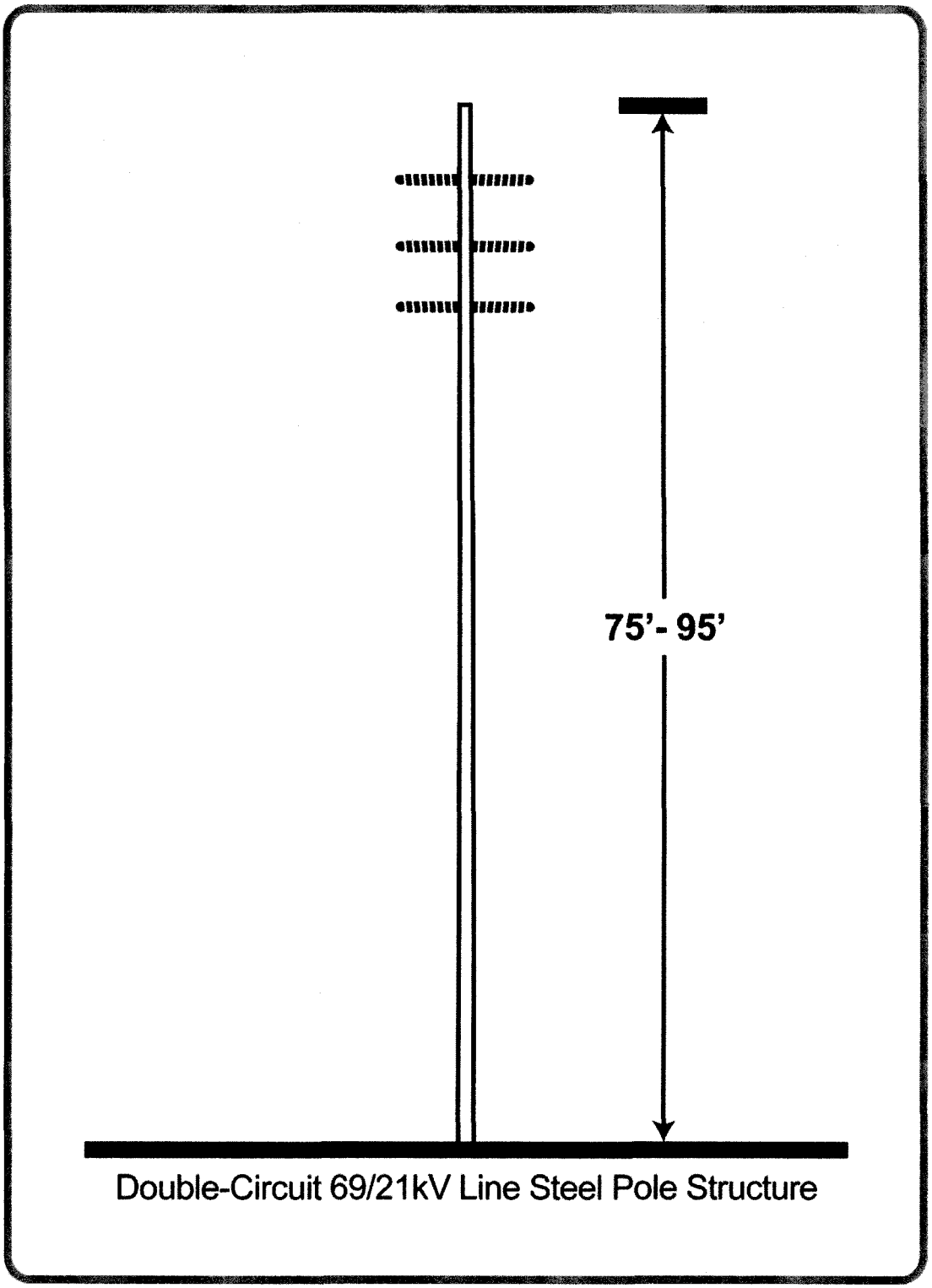

Figure 4 Typical 69/21kV Pole Design

PROJECT CONSTRUCTION, OPERATION, AND MAINTENANCE

Construction of the Proposed Action would occur over a 24-month period. The 345/69/21kV substation is projected to be in-service in the winter of 2013. Construction includes the following activities listed in sequential order:

Pre-Construction Activities

Engineering Surveys: Before construction surveying begins, required permits would be obtained to survey on federal or rights-of-entry for privately owned land. The construction survey would consist of the substation footprint, sub-transmission lines centerline locations, pole location, right-of-way boundaries, and access roads.

The substation footprint, pole locations, and the proposed centerline would be flagged and staked. Surveyors would use a 4-wheel-drive vehicle on NFS roads and existing rights-of-way, and would walk between pole locations as they survey and stake the lines.

On-ground investigations would be completed to accurately locate the centerline of the right-of-way on NFS land. The exact centerline would be chosen to best implement design criteria and to satisfy the mitigation measures in the EA.

Biological Review: A noxious weed survey would be conducted prior to construction-related activities, and mitigation measures (see Table 2-3) would be applied to prevent the spread of noxious weeds.

Geotechnical Investigation: A geotechnical investigation would be conducted at the proposed substation site and access road to determine subsurface soil conditions. This would involve test borings done by a specialized drill rig and trenches dug with a backhoe.

Vegetation Clearing: Vegetation clearing at the substation site, access road, and along the right-of-way would be conducted to remove vegetation that would interfere with the construction, operation, and maintenance of the proposed facilities. Removal of mature vegetation under or near the conductors would be done to provide adequate electrical clearance as required by National Electrical Safety Code (NESC) and Federal Energy Regulatory Commission (FERC) standards.

APS' forestry operations are based upon the ANSI A300 Standard for Tree Care Operations Part 1 for utility pruning, and Part 3 for integrated vegetation management practices. APS in compliance with FAC-003-1, the regulatory standard set forth by FERC that governs all utility forestry operations, requires that APS maintain a Transmission Vegetation Management Plan (TVMP). This document is filed annually with FERC via the Western Electricity Coordinating Council and North American Electric Reliability Corporation. Additionally, APS and the National Forests in Arizona entered into the Utility Vegetation Management Agreement in 2006. This document outlines a set of guidelines that were intended to ensure a reasonable level of consistency and coordination between the National Forests and utilities in Arizona.

Compliance with FAC-003-1 requires a clearance distance be identified at the time of maintenance (Table 2-1), called a Clearance 1 Distance. This distance is the minimum required clearance for each conductor to ensure system reliability. The electric voltage carried by the particular power lines involved typically determines the conductor clearing requirements within power line rights-of-way. Other important considerations can include terrain, access, environmental considerations, the risk of fire danger, and predominant vegetation species. When performing cycle maintenance, the minimum clearance would be achieved. At the time of maintenance, the plan would be to remove all tall-growing species of vegetation that can encroach into the under-clearance distances, to identify and remove unsound trees and/or portions of trees that are located along the corridor edges, and to thin out low growing vegetation in areas where this vegetation could pose a hazard by increasing fire fuel loads.

Table 2-1 Minimum Clearance at Time of Maintenance – Clearance 1 Distance

Voltage	Side Clearance Distance	Overhang Clearance Distance	Under Clearance Distance
69kV	16' 0"	None Permitted	19' 0"
115kV	17' 0"	None Permitted	21' 0"
230kV	18' 0"	None Permitted	29' 4"
345kV	20' 4"	None Permitted	35' 8"
500kV	24' 0"	None Permitted	41' 4"

Clearance 1 distances are conservative. These are the minimum clearance distances to be achieved at the time of maintenance and are based upon conditions and cycle maintenance intervals. These conditions may include, but are not limited to: operating voltage, appropriate vegetation management techniques, fire risk, reasonably anticipated tree and conductor movement, species types and growth rates, species failure characteristics, local climate and rainfall patterns, terrain and elevation, location of the vegetation within the span, and Occupational Safety and Health Administration-mandated worker approach distance requirements. Areas where vegetation grows much faster and taller than the surrounding vegetation may require greater clearance, as well as a more frequent cycle interval in order to maintain compliance with FAC-003-1.

Substation maintenance activities include maintaining the substation grounds substantially free of vegetation, both within the substation and to a distance of at least 10 feet outside the substation fencing for both safety and aesthetic reasons. Vegetation within a substation is a source of ignition through induction. Maintaining the substation and surrounding area free of vegetation eliminates this ignition source, inhibits a fire from spreading from within the substation to surrounding lands, protects the equipment and facilities within the substation from wildfires, and keeps tall growing vegetation from providing a point of ingress into a substation. Substation maintenance activities include, but are not limited to: hand, mechanical, pesticide, and biological control of vegetation, installation and maintenance of erosion control devices, and maintenance of the fence and facilities at each site.

Construction Activities

This section describes the procedures, types of equipment, and vehicles necessary for construction of the Proposed Action. Construction of the Proposed Action is anticipated to occur in phases. Table 2-2 outlines the workforce and equipment requirements for each phase of construction. The construction phases are described in detail following Table 2-2.

Table 2-2 Workforce Requirements and Equipment

Task	Equipment
Right-of-Way Survey	2 pickups (equipped with 4-wheel-drive)
Access Road to Substation	1 rubber-tired front loader 4 dump trucks 2 pickups (equipped with 4-wheel-drive) 1 water truck 1 grader 1 bulldozer 1 scraper 1 rock crusher
Access Road for 69/21kV line	1 rubber-tired front loader 1 dump truck 2 pickups (equipped with 4-wheel-drive) 1 water truck 1 bulldozer (D8 Cat)
Pole Excavation	2 power augers (22 series) 2 pickup trucks (equipped with 4-wheel-drive) 1 water truck 1 low drill (330 Track hoe with auger)
Pole Transport	1 helicopter 1 line truck (22 series 6 x 6) 18 wheeler with low-boy trailer
Pole Placement	2 boom trucks (equipped with 4-wheel-drive) 2 pickup trucks (equipped with 4-wheel-drive)
Conductoring	1 helicopter with fly ropes (if required) 1 drum puller 1 splicing truck 1 double-wheeled tensioner 1 wire reel trailer 1 sagging equipment 1 Gator Utility Vehicle 2 pickup trucks (equipped with 4-wheel-drive) 2 bucket trucks (22 series 6 x 6) 2 line trucks
Road Restoration	1 bulldozer (D-6) 1 pickup truck (equipped with 4-wheel-drive) 1 tractor (equipped with dragging chain)
Clean-up	2 pickup trucks (equipped with 4-wheel-drive)

Table 2-2 Workforce Requirements and Equipment	
Task	**Equipment**
Substation Construction	1 yard crane 4 pickup trucks 1 water truck 1–5 concrete trucks 1–5 dump trucks 1–4 backhoes 1 trencher 1 power auger 4 bucket trucks 1 man-lift 3 18-wheelers with low boy trailers to deliver substation transformers

Access Road Construction

FR 379 currently exists as an unimproved two-track road. Access to the substation site would require improvements to FR 379, to allow heavy vehicular traffic during construction and transport of heavy substation components. Acceleration and deceleration lanes on SR 87 would potentially be required, depending on the location where substation and construction equipment is delivered from. The improvements could include the following:

- 400' by 12' (with a 140' taper) northbound deceleration lane in the right shoulder
- 400' by 12' (with a 140' taper) southbound deceleration lane in the median
- 1,350' by 16' northbound acceleration lane in the right shoulder
- 2,000' by 16' southbound acceleration lane in the median
- Crossover lane between southbound deceleration lane and northbound SR 87 lanes in the median

Year-round all weather access would require APS to maintain the access road for emergency, operation, and maintenance activities. The proposed improvements would include widening the existing two-track road to a 20-foot wide travel surface and 5 feet on each side for erosion and drainage control measures, for a total road width of 30 feet. APS proposes to improve the existing alignment of the two-track road, incorporating mitigation measures for avoidance in areas where the potential for archaeological impacts may be present. The proposed access road improvements would cover a total distance of 12,017 feet, 8.5 acres, to the gate of the proposed substation. APS proposes to include improvements to a width of 12 feet on the existing two-track road from the substation gate up to the 345kV powerline right-of-way. This area encompasses a total of 2,686 feet, 0.74 acre. The total acreage for both portions of the access road improvements includes 14,703 feet, and a total of 9.24 acres.

Substation Construction

The proposed substation would require an excavation area of approximately 28.1 acres. This includes an area outside the substation fence for drainage basins to contain water run-off from the substation. This area would be seeded with native species after construction activities are

completed. Site preparation would include cut and fill, grading, and recontouring using slope rounding. An 8-foot tall security fence would be installed around the substation facilities. Three strands of barbed wire would be located on top of the fence, bringing the total height of the fence to 9 feet.

The proposed substation would be interconnected with the existing eastern Four Corners–Cholla–Pinnacle Peak 345kV transmission line and new 69/21kV sub-transmission lines. The existing west 345kV tower closest to the substation would be removed and a taller lattice structure (up to 140 feet tall) would be installed. The new tower would allow the eastern line to pass under the western 345kV line. Two lattice tower structures would be installed in the existing 345kV right-of-way to bring the 345kV line into and out of the substation. Approximately 200 feet of new right-of-way would be needed for the 345kV line between the existing right-of-way and the proposed substation.

Sub-transmission Line Construction

Construction activities include the development of temporary laydown yards, pole site clearing and hole excavation, pole framing and setting, and conductor installation.

Laydown Yard: Temporary construction laydown yards would be needed to serve as parking for construction vehicles, equipment, and construction material storage. The site would be located on private land near Rye, or within the substation footprint. Facilities would be fenced and their gates locked. There would be no unattended overnight fuel storage on the right-of-way or in the substation area.

Pole Site Clearing and Hole Excavation: The clearing of vegetation would be required to provide access for construction and pole setting within the 100-foot width of the right-of-way. Excavations for poles are made with a metal-tracked or rubber-tired vehicle with a power auger. The hole excavation and pole installation require vehicle access to the site.

Pole Framing and Setting: Pre-framed poles would be transported to each pole site by truck or helicopter, and rigged with stringing sheaves to prepare for conductor installation. The poles are placed upright by a rubber-tired boom truck, at which time the hole would be backfilled.

Conductor Installation: After the poles are set, a pilot line would be pulled (strung) from pole to pole by an all-terrain vehicle, or helicopter, and threaded through the stringing sheaves at each pole. Then the conductor would be attached to the pilot line and pulled through the stringing sheaves by a Gator Utility Vehicle. This process would be repeated until the conductor is pulled through all of the sheaves.

The conductor would be strung using powered pulling or tensioning equipment at one end and powered braking or tensioning equipment at the other end. Tensioning and pulling sites are approximately 10,000 feet apart or where the power line makes a turn of 45 degrees or greater. The tensioning site would be an area approximately 100 feet by 200 feet within the right-of-way. Tensioners, line trucks, wire trailers, and tractors, which are needed for stringing and anchoring the ground wire or conductor, are located at this site. The tensioner, along with the puller, maintains tension on the ground wire or conductor. Maintaining tension preserves ground

clearance and would be necessary to avoid damage to the ground wire, conductor, or any objects below them during the stringing operation.

The pulling site requires two-thirds of the area of the tension site. A puller and line trucks, which are needed for pulling and temporarily anchoring the ground wire and conductor, would be located at these sites.

The final step involves removing the stringing sheaves and attaching the wire permanently to the insulators. This would require one trip with a 4-wheel-drive boom truck.

For public protection during wire installation, safety measures such as barriers, flagmen, or other traffic control devices would be used for crossing public roadways (if applicable).

Cleanup

Construction sites, material storage yards, and access roads would be kept in an orderly condition throughout the construction period. All refuse, debris, and trash, including stakes and flags, would be hauled from the site and disposed of in an approved manner. Oils or chemicals would be hauled to an approved site for disposal. Removed vegetation would be lopped and scattered.

MITIGATION MEASURES

Mitigation measures were developed to reduce, avoid, and/or compensate for the potential impacts the proposed activities may cause. Project design and implementation of mitigation measures (Table 2-3) would minimize potential environmental impacts. As part of the standard operating procedures, mitigation measures would be implemented throughout the lifetime of the Project. Application and effectiveness of mitigation measures is described in the resource impact assessments in Chapter 3.

In addition to specific mitigation measures prescribed for the Proposed Action alternative, all management activities implemented are required to follow Forest Plan Standards and Guidelines, Best Known Practices, Best Management Practices (BMP), and any other applicable USFS policy.

Reclamation

Following construction and cleanup, reclamation would be completed. The disturbed surfaces would be restored to original contour of the land surface to the extent practical. Erosion and sediment control measures would be constructed along the right-of-way, as needed. Soils compacted by heavy equipment would be broken up with tines to loosen the top 3 inches of soil.

Appropriate site-specific, weed-free, seed mixes and planting method directed by the TNF would be used. Seed would be planted from March to May, or as directed by the TNF, following sub-transmission line and substation construction. Periodic evaluations of reclamation would be completed by APS and the USFS to ensure that reseeding would be successful.

Table 2-3 Mitigation Measures Required for the Proposed Action Alternative		
No.	**Objective**	**Mitigation Measure**
		Soil and Water
1	Protect surface and subsurface water quality from physical, chemical, and biological pollutants resulting from activities that are under special use permit	All requirements of those entities having jurisdiction over water-quality matters will be adhered to, and any necessary permits for construction activities will be obtained.
2	Prevent compaction, rutting, and gullying that may result in site degradation, sediment production, and turbidity	If soil moisture would cause rutting by construction equipment (greater than 3 inches in depth) for a length greater than 25 feet, the movement of construction equipment would not be allowed on the right-of-way, access roads, or at the laydown yards or other areas for a period of 48 hours or as directed by the USFS.
3	Comply with state and federal water quality standards by minimizing soil erosion	The soil surface of disturbed areas would be stabilized through the use of USFS-approved erosion control measures, with consideration for range, wildlife, timber, or fuels management objectives.
4	Minimize vegetation and surface disturbance outside of the right-of-way	All construction vehicle movement outside of the right-of-way would be restricted to predesignated access areas, existing roads, or as approved by the USFS.
5	Minimize soil erosion	All construction and maintenance activities would be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial stream banks. All existing roads would be left in a condition equal to or better than their condition prior to construction of the Proposed Action.
6	Minimize construction of new access roads and ground disturbance	Existing NFS roads and APS rights-of-way would be used for access to the extent possible. In areas with no existing access, overland travel with rubber-tired and/or tracked vehicles would be used.
7	Minimize soil erosion	Temporary and permanent erosion control measures shall be incorporated.
8	Minimize soil erosion and sediment transport	Implementation of a Stormwater Pollution Prevention Plan (SWPPP) and BMPs to reduce erosion and sediment transport
		Heritage and Biological Resources
9	Comply with state and federal laws regarding antiquities and plants and wildlife	Prior to construction, all construction personnel would be instructed on the protection of cultural and ecological resources. To assist in this effort, the instruction would address: (a) federal and state laws regarding antiquities and plants and wildlife, including collection and removal; and (b) the importance of these resources and the purpose and necessity of protecting them.
10	Minimize impacts and disturbance to sensitive features	To minimize disturbance of sensitive features in designated areas, structures and access roads would be sited so as to avoid sensitive features such as, but not limited to, riparian areas, water courses, and cultural sites, to the extent possible. Avoidance may be accomplished by spanning sensitive features or realigning the route, as approved by the USFS. Conductors would span sensitive features within limits of standard structure design. Known archaeological resources would be flagged during construction activities. If any National Register-eligible sites would be impacted by the Project, a treatment plan would be developed and followed by APS. An archaeological monitor would be present during construction activities within 100 feet of eligible sites, or as stipulated by the National Forest Service.

Table 2-3 Mitigation Measures Required for the Proposed Action Alternative		
No.	**Objective**	**Mitigation Measure**
11	Minimize risks to raptors	Transmission line construction would follow the appropriate measures to minimize avian electrocution risks as detailed in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee 2006). Conductors and grounding structures would be placed so that birds cannot span either a pair of conductors or a conductor and any grounded structure.
12	Minimize risks to migratory birds	If ground disturbing construction activities would occur between March 15and August 15, APS would complete pre-construction clearance surveys for migratory birds to preclude violation of the Migratory Bird Treaty Act.
Visual Quality		
13	Minimize visual impacts	Limits of clearing shall be irregular by varying the width of the area to be cleared or by leaving selected clumps of vegetation near the edge of the clearing limit.
14	Minimize visual impacts	Preserve and protect vegetation outside of the clearing limits.
15	Minimize visual impacts	Reseed all disturbed areas to the limits of clearing with native species mix.
16	Minimize visual impacts	After use of widened access roads, reduce road width to dimension prior to widening by obliterating and putting back into as near as natural condition as possible. Obliteration shall include roughening, re-contouring, and seeding.
17	Minimize visual impacts	Slope rounding shall occur at the intersection of large cuts and natural grades to blend two surface edges for a natural-appearing transition.
18	Minimize visual impacts	All cut and fill slopes must be roughened by tilling or ripping a minimum of 12 inches deep.
19	Avoid permanent markings and minimize ground disturbance	The limits of construction activities would be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction activity limits. Yellow rope (1/4 inch minimum) suspended by T-bars would be used to delineate these areas prior to construction activities.
20	Reduce visual impacts and structure contrast	The substation equipment would have a dulled gray finish, and poles would be made of dulled gray galvanized steel or self-weathering steel. Insulators would have a dark gray finish, and non-reflective wires would be used. The chain link fence and barbed wire would be galvanized steel.
Air Quality		
21	Comply with state and federal laws	All requirements of those entities having jurisdiction over air-quality matters would be adhered to and any necessary permits for construction activities would be obtained.
Noise		
22	Minimize noise and interference issues	APS would respond to complaints of line-generated radio or television interference by investigating the complaints and implementing appropriate mitigation measures.
Noxious Weeds		
23	Minimize the spread of noxious weeds	To minimize the spread of noxious weeds, APS would comply with standard USFS practices. Seeds utilized for the reclamation of disturbed areas would be of local genetic stock, and certified weed-free.

Table 2-3 Mitigation Measures Required for the Proposed Action Alternative		
No.	**Objective**	**Mitigation Measure**
24	Minimize the spread of noxious weeds	All access routes to the Project area would be surveyed, including public and private lands. Remove invasive plants from these routes. Invasive plants would also be removed from laydown yard. If invasive plants have been growing at any location along access route for more than a year, equipment would be washed after driving through the infestation site before driving through non-infested areas. Any invasive plants found would be mapped and reported to the TNF.
25	Minimize the spread of noxious weeds	APS would work with the TNF to develop control measures for any invasive plants identified in the Project area or access roads.
26	Minimize the spread of noxious weeds	Equipment would be pressure-washed of all soil and plant material prior to being delivered to the Project site.
27	Minimize the spread of noxious weeds	Any seed to be planted on the TNF would be tested according to TNF seed-testing policy (Appendix C).

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section summarizes the existing environmental conditions found within the affected Project area, and the potential changes that may result from implementing the alternatives. Resources associated with the natural, human, and cultural environment were studied and include the following categories:

- Soil and Water Resources
- Biological Resources
- Land Uses
- Recreation
- Socioeconomics
- Environmental Justice
- Visual Resources
- Cultural Resources
- Air Quality and Noise

The affected environment for the Proposed Action is discussed as the study area, shown on Figure 1, unless a resource is known to be affected beyond the limits of the study area. The study area includes resources within 1 mile of the proposed substation site and proposed sub-transmission lines route. The affected study area includes land administered by the TNF and privately owned land.

PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIVITIES

For the cumulative effects analysis, the impacts of the Proposed Action when added to other past, present, and reasonably foreseeable future actions were considered within the study area boundary. Depending on the resource, activities considered in this analysis may vary.

Table 3-1 displays a general list of past and present activities within the vicinity of the Project.

Table 3-1 List of Past and Present Actions within the Vicinity of the Project

Project Name or Action	Type of Activity
Residential development	Ongoing development of homes and other buildings on private land
Grazing	Ongoing permitting and management of livestock grazing
Dispersed recreation	Dispersed recreation (i.e., camping, hiking, hunting)
Forest roads	Use and maintenance of Forest roads
Off-highway vehicle (OHV) use	General OHV activity
Fire	Natural and prescribed fires
SR 87	Widening of state route, and maintenance
69kV, 21kV route along FR 184	Installation and maintenance of sub-transmission and distribution lines

Table 3-2 displays a general list of reasonably foreseeable activities within the vicinity of the Project.

Table 3-2 List of Reasonably Foreseeable Future Actions within the Vicinity of the Project	
Project Name or Action	**Type of Activity**
Residential development	Development of homes and other buildings on private land
Grazing	Permitting and management of livestock grazing
Dispersed recreation	Dispersed recreation (i.e., camping, hiking, hunting)
Forest roads	Use and maintenance of Forest roads
OHV use	General OHV activity
Fire	Natural and prescribed fires
69kV, 21kV route along FR 184	Maintenance of sub-transmission and distribution lines

SOIL AND WATER RESOURCES

Affected Environment

Geologic Setting

The Proposed Action is located in the geologic Transition Zone of Arizona (also called the Central Highlands or Central Mountain Province) that lies between the Colorado Plateau Province to the north and the Basin and Range Province to the south (Fenneman 1931; Nations and Stump 1981). The Transition Zone consists of rugged terrain containing igneous, metamorphic, and deformed sedimentary and volcanic rocks of Precambrian age, with some erosional remnants of Paleozoic age (Nations and Stump 1981).

The Proposed Action lies in the Payson Basin, between the Mazatzal Mountains to the southwest and the Sierra Ancha Mountains to the northeast (Pedersen and Royse 1970). The Mazatzal Mountains consist of quartzite, meta-sedimentary rocks, granitic rocks, metamorphic rocks, and meta-volcanic rocks of Early Proterozoic age, as well as basaltic rocks of Miocene age (Royse et al. 1971; Arizona Geological Survey 2000). The Sierra Ancha Mountains are similar, consisting of quartzite, meta-sedimentary rocks, granitic rocks, and meta-volcanic rocks of Early Proterozoic age, as well as sedimentary rocks of Middle Proterozoic age (Royse et al. 1971; Arizona Geological Survey 2000).

The Payson Basin is a structural trough that is filled with late Cenozoic sediments consisting of fluvial gravel, sand, silt, mud, and minor amounts of limestone of lacustrine origin (Pedersen and Royse 1970). These basin-fill deposits unconformably overlie igneous, metamorphic, and sedimentary bedrock of Precambrian age. The basin-fill deposits are overlain by fanglomerate and terrace gravels.

The Project area is located on top of a terrace that is part of an alluvial fan or bajada (pediment of Pedersen and Royse 1970) that is dissected by small tributaries of Rye Creek, which lies to the northeast of this terrace and the Project area. There are three geologic units within the Project area: (1) unnamed basin-fill deposits of middle Miocene to Pliocene age (16 to 2 million years

old); (2) unnamed surficial deposits of late Pliocene to early Pleistocene age (3 to 0.75 million years old); and (3) river deposits of recent age (Quaternary alluvium) (Pedersen and Royse 1970; Arizona Geological Survey 2000). The basin-fill deposits compose the dissected terrace, which is overlain by the surficial deposits. The recent river deposits are present in Rye Creek and its floodplain. The proposed substation and access road would be constructed on top of the surficial deposits and the underlying basin-fill deposits.

Soil Resources

The Forest Service defines a terrestrial ecosystem map unit based on the interaction of soil, climate, and vegetation. Five Terrestrial Ecosystem map units would be impacted by the substation, access road, and sub-transmission lines (USFS 1985). These map units are 3050, 3352, 3236, 3230, and 15. Four of the five Terrestrial Ecosystem map units are consociations that include a single soil type, whereas one of the five map units is an association that includes two soil types.

Map unit 3050 is the dominant unit within the Project area and is classified as Typic Haplustalfs fine, montmorillonitic, thermic, gravelly loams. These soils have a high level of expanding, shrink/swell clays that may cause the soil to develop cracks that open and close as the moisture level of the soil changes (Soil Survey Staff 1999). Map unit 3050 covers all of the land that would be occupied by the substation, as well as a majority of land that would be improved for the access road and a portion of the land that would be crossed by the sub-transmission lines.

Map unit 3352 is common on the steep slopes within the Project area; especially the slope between the terrace with the substation and the channel-bottom of Rye Creek. These soils are classified as Typic Ustochrepts calcareous, fine-loamy, mixed, thermic, deep, very gravelly loams.

Map unit 3236 occurs on the slope south of the substation and the access road and is classified as Typic Haplustalfs fine, mixed, thermic, deep, cobbly loams.

Map unit 3230 occurs on a gentle slope in the western part of the Project area and is classified as Aridic Haplustalfs fine-loamy, mixed, thermic, deep, gravelly sandy loam. This map unit would be impacted by construction activities that would improve the access road (FR 379) to the substation.

Map unit 15 occurs in the Rye Creek channel and is an association that includes deep, thermic, Fluventic Ustochrepts and Typic Ustifluvents. This map unit would be impacted by construction activities associated with the sub-transmission lines.

Soil limitations include sheet and rill erosion potential, high shrink/swell clays, and low revegetation potential. Each of these soil limitations are discussed in more detail as follows.

For areas that have had the vegetative cover removed, sheet and rill erosion potential is rated as severe, moderate, or slight. Three of the five map units (3050, 3352, and 3236) have been rated as having severe potential for sheet and rill erosion when de-vegetated; map unit 3230 has a slight potential for sheet and rill erosion when de-vegetated; and map unit 15 has not received a

rating for sheet and rill erosion. A soil's susceptibility to sheet and rill erosion is also expressed as a K factor, with greater K factors representing greater erosion susceptibility. Soil K factors include 0.20 for map units 3050 and 3236, 0.15 for map unit 3230, and 0.10 for map unit 3352. Map unit 15 has not received a K factor value.

Expanding clays expand when wet, and shrink as they dry. The most common shrink/swell clays found in soils are members of the smectite family, which includes montmorillonite (Birkeland 1999), a major component of terrestrial-ecosystem-map-unit 3050. Shrink/swell clays may adversely affect construction activities by destabilizing the land surface as moisture levels change within the Project area. Terrestrial ecosystem units have been rated as having a high, moderate, or low potential for containing shrink/swell clays. Within the Project area, map unit 3050 has a high potential for shrink/swell clays; map unit 3236 has a moderate potential for shrink/swell clays; map units 3352 and 3230 have a low potential for shrink/swell clays; and map unit 15 has not been assigned a potential for shrink/swell clays.

Each of the terrestrial ecosystem units within the Project area has been assessed for revegetation potential (the ease with which native grasses may be reestablished in a disturbed area). Values of revegetation potential within the Project area include high (no limitations for reestablishing native grasses), moderate (somewhat difficult to reestablish native grasses), and low (very difficult to reestablish native grasses). Within the Project area, map units 3050 and 3230 have a high potential for revegetation, map unit 3236 has a moderate potential due to steep slopes, and map unit 3352 has a low potential due to the alkaline character of the soil. Map unit 15 has not been assigned a revegetation potential value.

Water and Riparian Resources

The Proposed Action is located within the Rye Creek–Tonto Creek 5th code watershed, which is within the Tonto Creek Basin in the Central Highlands Planning Area of the Arizona Department of Water Resources (ADWR [2007]). The Tonto Creek Basin area covers 955 square miles. The two major drainages near the Project area are Rye and Tonto creeks, both of which flow in a general north-to-south direction. Rye Creek is 17.8 miles long and its headwaters are in the Cypress Thicket area of the TNF, approximately 10 miles to the northwest (ADWR 2007). Rye Creek is classified as an intermittent stream with a watershed that is approximately 122 square miles in area (ADWR 2007). The headwaters of Tonto Creek are at the southern edge of the Mogollon Rim, approximately 27 miles to the north. Rye Creek joins Tonto Creek approximately 3 miles downstream of the Project area. The sub-transmission lines would connect to an existing line along FR 184 and cross Rye Creek once. The Project does not cross Tonto Creek. The combined width of the channel and floodplain of Rye Creek where the sub-transmission lines would cross is approximately 1,800 feet.

Riparian habitat elements are present along Rye Creek in the Project area. The dominant tree species is Arizona sycamore (*Platanus wrightii*), with a few medium-sized Fremont cottonwood trees (*Populus fremontii*) and some netleaf hackberry (*Celtis laevigata*) present. There are no dense stands of these species in the section of Rye Creek near the proposed crossing of the sub-transmission lines. The trees that occur within the mid-channel are single trees or small groups of a few individuals, which do not have any associated mid-story vegetation. The length of the

Project crossing that contains some broad-leafed riparian vegetation is approximately 330 feet. Some mid-story vegetation occurs sporadically along the banks of Rye Creek, including catclaw acacia (*Acacia greggii*), netleaf hackberry, and velvet mesquite (*Prosopis velutina*). Mid-channel strand vegetation is dominated by singlewhorl burrobrush (*Hymenoclea monogyra*), with seep willow (*Baccharis salicifolia*) present in very small numbers. The floodplain at the base of the terrace on the south side of Rye Creek, through which the sub-transmission lines would pass, is densely vegetated with xeroriparian floodplain scrub vegetation that includes catclaw acacia, catclaw mimosa (*Mimosa aculeaticarpa*), and red barberry (*Berberis haematocarpa*). Due to the width of the crossing, construction of the sub-transmission lines would require placement of poles within the Rye Creek floodplain, above the ordinary high water mark, which is outside of the Army Corps of Engineers jurisdictional Waters of the U.S. portion of the creek.

The surface water quality of Rye Creek was last assessed in November 2008, by the Arizona Department of Environmental Quality (ADEQ [2008]). The overall assessment for Rye Creek is a category 2 (attaining some uses). Four samples were taken in 2002 to measure the amount of metals, nutrients, total dissolved solids, turbidity, and *E. coli* bacteria. The only exceedance was dissolved oxygen, which was measured as low as 2.72 mg/L. Low dissolved oxygen in Rye Creek was probably due to natural conditions related to low flow and groundwater upwelling (ADEQ 2008).

Environmental Consequences

This section provides a summary of the potential impacts to soil and water resources from the construction, operation, and maintenance of the substation, access road, and sub-transmission lines.

Alternative 1 – No Action

Under the No Action Alternative, the current soil and water conditions associated with the Project area would remain unchanged and no impacts would occur.

Alternative 2 – Proposed Action

Potential impacts to soil and water resources from the Proposed Action include: (1) sheet and rill erosion from grading of the substation site and access road; (2) shrink/swell clays destabilizing the land surface; (3) slow recovery of vegetation in areas defined as having a low potential for revegetation; and (4) degradation of water quality due to increased turbidity resulting from increased soil erosion or to accidental spills of petroleum products or other hazardous chemicals.

Construction of the Proposed Action would have approximately 51.7 acres of disturbance. Disturbance of the land surface through grading or removal of vegetation would be the principal cause of impacts to soil resources. The Proposed Action would permanently disturb a total of 51.7 acres, which includes approximately 28.1 acres for the substation, 9.2 acres for the access road (FR 379), 2.97 acres for the acceleration/deceleration lanes on SR 87, and 11.4 acres for the sub-transmission lines.

Erosion is the natural process by which water removes soils from their natural location. Grading of the substation site and the creation of access roads could adversely affect soil resources by removing protective vegetation cover, thereby increasing the susceptibility of soils to erosion. This could result in the degradation of the land surface, soil productivity, or water quality if sediment is washed into nearby water ways, such as Rye Creek.

Soils that have been determined to exhibit severe potential for sheet and rill erosion if their vegetative cover is removed are common throughout the Project area (Table 3-3). Vegetative cover of soils would be removed during construction of the substation, sub-transmission lines, and the associated access roads, as well as for the duration of the life of the permit. Soils that have a moderate to high rating for shrink/swell clays are common within the Project area, covering the substation site and a majority of land that would be crossed by the improved access road (FR 379). Soils that have a low potential for revegetation are present on the slope face separating the terrace with the substation from the channel-bottom of Rye Creek (Table 3-3). The mitigation and reclamation effort may be hindered by the low potential for vegetation recovery in this area.

Table 3-3 Potential Area of Disturbance to Soil Resources from the Proposed Action

Soil Unit	Taxonomic Name	Area (acres)	Soil Limitations		
			Erosion Potential	Shrink/Swell Clays	Revegetation Potential
3050	Typic Haplustalfs	39.9	High	High	High
15	Fluventic Ustochrepts	4.8	Not rated	Not rated	Not rated
3230	Aridic Haplustalfs	4.4	Low	High	High
3352	Typic Ustochrepts	2.6	High	Low	Low
3236	Typic Haplustalfs	0	High	Moderate	Moderate

Potential impacts to water resources would be primarily associated with surface-disturbing activities, but could also be a result of accidental spills and handling and storage of hazardous chemicals. Ground-disturbing activities in the vicinity of Rye Creek could result in increased soil erosion, turbidity, and sedimentation, which could affect aquatic ecology, the quality of domestic water supplies and irrigation systems, and the aesthetic quality of the creek. Accidents involving construction equipment adjacent to or in Rye Creek could result in spillage of petroleum products or construction materials that could contaminate Rye Creek.

A number of mitigation measures are proposed to prevent degradation of water quality due to increased soil erosion or to spills of petroleum products or chemicals. Degradation of water quality resulting from increased soil erosion will be prevented by constructing a retention ditch around the Project area that would direct and slow down runoff. As the Project area is flat, there should not be much concentration of water to cause soil erosion. The site-specific SWPPP will include storm water BMPs and temporary erosion control measures, including revegetation and construction of beams and ditches that would prevent accelerated soil erosion. Adhering to

proper material handling procedures and complying with the SWPPP should ensure that construction-related water quality impacts are less than significant.

The sub-transmission lines would span Rye Creek, thereby avoiding placement of poles within the Waters of the U.S. portion of the creek. The reach of Rye Creek that would be spanned by the sub-transmission lines is not perennial, and construction would not be performed during flow events. The poles would be placed above the ordinary high water mark. Because there may be other activities, such as vegetation clearing below the ordinary high water mark, a Nationwide Permit (12) for utility-line activities under section 404 of the Clean Water Act would be needed. Disturbance of soils within the channel and floodplain would be limited to the extent of the sub-transmission line right-of-way, and the north-to-south-access road from the private land north of the sub-transmission line crossing of Rye Creek. Channel and floodplain surface soils that would be disturbed by construction of the right-of-way across Rye Creek have likely had much of their silt and clay fractions removed over time by the action of water, thereby leaving a dominant sediment composed of gravel and cobbles. Such sediment is not likely to have a substantial effect on downstream water quality, due to a general lack of finer components that typically impact water quality by contributing to turbidity. Ground disturbance within the Rye Creek channel and floodplain would be naturally ameliorated by subsequent flow events. Vegetation within the sub-transmission line right-of-way would be removed, and would include any broadleaf riparian trees that fall within the alignment. Implementation of Project mitigation measures (see Table 2-3, mitigation measures 1–5 and 8) would minimize potential effects to waters within the Project area.

Cumulative Impacts

Alternative 1 – No Action

Implementation of the No Action Alternative, along with past, present, and reasonably foreseeable actions, would have no additional cumulative impacts on soil or water resources.

Alternative 2 – Proposed Action

Ongoing population growth and development could continue to increase the demand for water and the need to divert water from streams and springs. Ongoing OHV use could result in more soil surface damage and erosion. Driving on dirt roads could continue to increase sediment loads of streams. Roads may intercept land surface flows, drying out some down-slope sites and channelizing the water to specific release points where it scours or dumps sediment on once stable areas. Livestock grazing could continue to decrease vegetative cover and increase runoff and erosion in areas of concentrated use, such as near stock tanks. Dispersed recreation could increase runoff and erosion in areas of concentrated use, including trails, paths, and gates. Wildfire could result in the loss of vegetation and could continue to make soils more susceptible to erosion, which could contribute to runoff in areas affected by the fire. Maintenance activities associated with SR 87 could result in additional disturbance, which may contribute to runoff and erosion. The installation of additional electrical sub-transmission and distribution lines along FR 184 would create additional disturbance for pole locations and access roads, which could contribute to a decrease in vegetative cover and increase runoff and erosion in affected areas.

Implementing mitigation measures (see Table 2-3) and BMPs should effectively reduce the potential effects from the Proposed Action, so that these potential effects would not be discernable from the effects of the other activities listed above.

BIOLOGICAL RESOURCES

This section provides a general description of the affected environment and environmental consequences for biological resources, including vegetation, wildlife, special status species, and noxious weeds.

Affected Environment

The Proposed Action is situated in the TNF, approximately 3 miles south of Rye, Arizona. The study area is bounded on the north by the Black Mountain foothills, on the east by the Sierra Ancha Range, and is flanked on the west and south by the Mazatzal Mountains. Project elevations range from 2,890 to 3,290 feet above mean sea level (amsl). Two major drainages in the study area, which flow in a general north to south orientation, are Rye and Tonto creeks. Rye Creek has its headwaters in the Cypress Thicket area of the TNF, approximately 10 miles to the northwest; Tonto Creek has its headwaters at the southern edge of the Mogollon Rim, approximately 27 miles to the north. The confluence of Rye and Tonto creeks is approximately 3.6 flow miles downstream of the Proposed Action. The width of the Rye Creek floodplain in the study area is approximately 1,800 feet. Rye Creek has a large watershed, but in the area of the Proposed Action the creek flows only seasonally, or during stochastic rainfall events.

Discussions in this section of the document reference both the Project limits and the Project biological study area (Project area). The Project study area shown on Figure 1 was appropriate for the review of most of the resources. However, biological resources were considered regionally. Two considerations influenced the need for an expanded biological study area. These were the larger home ranges of some wildlife, particularly those of some bats and birds, and the connectivity of the Project reach of Rye Creek, with downstream riparian resources on lower Rye and Tonto creeks. Review of the potential for impacts to downstream riparian habitat was considered an essential part of the biological review process for this Project. The Project area is approximately 6 miles in diameter and includes the adjacent reach of Tonto Creek.

Vegetation

The entire Project limits and most of the Project area are situated within the semidesert grassland biome, as described by Brown (1982). The new sub-transmission lines would cross xeroriparian habitat present along Rye Creek. The proposed substation site is on higher ground within semidesert grassland habitat. Following is a summary of vegetation typical of semidesert grassland and xeroriparian habitats, and plant species that were observed in the Project area. Plant Latin and common names used are referenced from the USDA Plants Database (USDA 2008). Plant species identified in the Project area during the site reconnaissance of July 31, 2008 are listed in Table A-4 of Appendix A.

Semidesert Grassland

Plants that are typical of semidesert grassland habitat that were observed on the site include perennial grasses such as tobosa grass (*Pleuraphis mutica*) and three-awn (*Aristida* sp.) (Brown 1982). Other plants typical of this biome include numerous stem and leaf succulent species such as agaves, yuccas, and cacti, many of which have Chihuahuan Desert affinities. Examples within the Project area include goldenflower century plant (*Agave chrysantha*) and sacahuista (*Nolina microcarpa*). Semidesert grassland scrub-shrub plants present within the Project include velvet mesquite, oneseed juniper (*Juniperus monosperma*), fairyduster (*Calliandra eriophylla*), catclaw mimosa, catclaw acacia, spiny hackberry (*Celtis ehrenbergiana*), and red barberry.

Cacti are an important component of semidesert grassland, and are represented by the following seven species within the Project limits: buckhorn cholla, Christmas cactus, and walkingstick cactus (*Cylindropuntia acanthocarpa*, *C. leptocaulis*, and *C. spinosior*, respectively); pinkflower hedgehog cactus (*Echinocereus f. fasciculata*); candy barrel cactus (*Ferocactus wislizeni*); and two species of pricklypear cactus (*Opuntia engelmannii* and *O. phaeacantha*).

Riparian Corridors

The Project is located northwest of the confluence of Rye and Tonto creeks. The proposed sub-transmission lines would tie into an existing 69kV line along FR 184 (Rye Creek Road) and cross Rye Creek once, approximately 3.6 miles upstream of the confluence. The Project does not cross Tonto Creek.

The majority of the Project reach of Rye Creek is xeric-riparian in nature. However, a few broadleaf riparian habitat elements are present along the creek. These include Arizona sycamore, a few medium-sized Fremont cottonwood trees, and an occasional netleaf hackberry. There are no dense stands of these species in the reach of Rye Creek near the sub-transmission lines crossing. The trees that occur out in mid-channel are single trees or small groups of a few individuals, and do not have any associated mid-story vegetation. The width of the active Rye Creek channel where the lines would span the creek is approximately 330 feet. Along the south bank of Rye Creek, there are a few larger velvet mesquite trees with some associated mid-story vegetation, including catclaw acacia and netleaf hackberry. Mid-channel vegetation is dominated by singlewhorl burrobrush, with mule-fat (seep willow) present in very small numbers. The floodplain at the base of the mesa on the south side of Rye Creek is densely vegetated with xeroriparian floodplain scrub vegetation, including catclaw acacia, catclaw mimosa, and red barberry. Due to the width of the Rye Creek floodplain, construction of the sub-transmission lines would require placement of poles within the floodplain, but not within the active channel portions of Rye Creek.

Noxious Weeds

A list of potential noxious weed species, for which there is suitable habitat available within the Project area, is located in Table A-1 of Appendix A. Portions of the Project area were reviewed for the presence of noxious weed species during a site visit conducted on July 31, 2008. Four noxious weed species were encountered during this reconnaissance, including wild oats (*Avena*

fatua), red brome (*Bromus rubens*), dodder (*Cuscuta* sp.), and Russian thistle (*Salsola kali*). Each of these species observed was represented by very few individual plants, and there were no noxious weed infestations observed on the Project. The Proposed Action would implement appropriate mitigation measures for invasive weed species (see Table 2-3, mitigation measures 23–27).

Wildlife

Lists of wildlife species that potentially occur in the Project area are provided in Tables A-5, A-6, and A-7 of Appendix A.

Mammals

A variety of mammals are likely to use the semidesert grassland and riparian habitats within the Project area. Several bat species are likely to forage in the area, including some potential for the Western Red Bat (*Lasiurus blossevillii*) using the Rye Creek drainage in summer. The Desert Cottontail (*Sylvilagus audubonii*) and the Black-tailed Jackrabbit (*Lepus californicus*) were both observed on the site. Many small rodent species are likely to be present in the area, including Harris' Antelope Squirrel (*Ammospermophilus harrisii*), Botta's Pocket Gopher (*Thomomys bottae*), species of mice (*Peromyscus* spp.), and Grasshopper mice (*Onychomys* spp.). Middens of the White-throated Woodrat (*Neotoma albigula*) are present on the site, and a single Coyote (*Canis latrans*) was observed. Mule Deer (*Odocoileus hemionus*) are present on the site.

Birds

Bird species observed during the single site visit on July 31, 2008 include Red-tailed Hawk (*Buteo jamaicensis*), Turkey Vulture (*Cathartes aura*), Gambel's Quail (*Callipepla gambellii*), Mourning Dove (*Zenaida macroura*), Common Poorwill (*Phalaenoptilus nuttallii*), Gila Woodpecker (*Melanerpes uropygialis*), Northern Flicker (*Colaptes auratus*), Ash-throated Flycatcher (*Myiarchus cinerascens*), Loggerhead Shrike (*Lanius ludovicianus*), Common Raven (*Corvus corax*), Verdin (*Auriparus flaviceps*), Cactus Wren, (*Campylorhynchus brunneicapillus*), Northern Mockingbird (*Mimus polyglottos*), Curve-billed Thrasher (*Toxostoma curvirostre*), and Northern Cardinal (*Cardinalis cardinalis*).

Fish

The Project reach (within Project limits) of Rye Creek is dry most of the year and provides little potential habitat for fish. Snow pack in the watershed in average years is unlikely to be adequate to support flow as far downstream as the Project limits. Flow events within Project limits are generally ephemeral, typically resulting from summer monsoon rains, or the occasional stochastic rainfall event. During these brief flow events, fish present in the downstream perennial reaches of Rye and Tonto creeks could conceivably move upstream, or be flushed down from headwaters. However, fish occurring within Project limits are considered transitory and do not

represent resident populations (Calamusso 2010). Only the Long Fin Dace is anticipated to potentially occur within the Project reach of Rye Creek.

Amphibians

Due to a lack of perennial waters, there are few amphibian species that are likely to occur within the Project limits. Species that do not require perennial waters, and which may occur within the Project limits, are the Mexican Spadefoot (*Spea multiplicata*), Red-spotted Toad (*Bufo punctatus*), Great Plains Toad (*Bufo cognatus*), and possibly the Sonoran Desert Toad (*Bufo alvarius*).

Reptiles

Several reptile species are likely to occur within the Project limits, including Greater Earless Lizard (*Cophosaurus texanus*), Common Lesser Earless Lizard (*Holbrookia maculata*), Ornate Tree Lizard (*Urosaurus ornatus*), Side-blotched Lizard (*Uta stansburiana*), Spiny Lizards (*Sceloporus* spp.), Greater Short-horned Lizard (*Phrynosoma hernandesi*), Whiptail Lizard (*Cnemidophorus* spp.), Gopher Snake (*Pituophis catenifer*), Whipsnake (*Masticophis* spp.), and Rattlesnake (*Crotalus* spp.). The Project is near the edge of the known range of the Gila Monster (*Heloderma suspectum*), but there is suitable habitat and this species could be present.

Special Status Species

Special Status Species that are known to be present on the TNF were reviewed for their potential to occur within the Project area of influence. Information reviewed included a literature search, secondary data provided by the TNF, a review of previous studies conducted in the area, and a field visit conducted on July 31, 2008. The field visit did not include species-specific surveys, but was performed for Project reconnaissance purposes only. The Arizona Game and Fish Department (AZGFD) On-line Environmental Review Tool (AZHGIS) was accessed to obtain a list of special status species for which there are records of occurrence within a 3-mile radius of the Project (Search ID #20100512012184; Appendix D). A Project Biological Assessment has been completed that addresses federal species and their designated Critical Habitat. USFS sensitive species are reviewed in the Project Biological Evaluation for USFS sensitive species, and are not covered in this document. A separate TNF document was prepared to address migratory bird species protected under the federal Migratory Bird Treaty Act. Special Status Species reviewed are shown in Table 3-3. Table 3-3 contains a column listing the potential for each of these species occurring within the Project area of influence. Species with some potential for occurrence are addressed following Table 3-3.

Table 3-4 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
Mammals				
Macrotus californicus	California Leaf-nosed Bat	Sonoran desertscrub with caves or mines for roosts	WSC	Very low
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	Low desert habitats to mid elevations where food plants such as saguaro cacti or species of agaves are present	FE, WSC	None
Lasiurus blossevillii	Western Red Bat	Riparian or encinal habitat at various elevations	WSC	Low
Euderma maculatum	Spotted Bat	Roosts in crevices and caves in rocky cliffs from below sea level to pine forests	WSC	Low
Corynorhinus townsendii	Townsend's Big-eared Bat	Roosts in mines, caves, and occasionally in buildings	WSC	Low
Canis lupis baileyi	Mexican Gray Wolf	Most habitats except low desert	FE, WSC	None
Birds				
Haliaeetus leucocephalus	Bald Eagle	Riparian areas, primarily Salt and Verde River watersheds	FT (DPS), WSC	Very low
Buteogallus anthracinus	Common Black Hawk	Nests in cottonwoods in riparian areas	WSC	Very low
Buteo nitida maxima	Northern Gray Hawk	Riparian or open woodland; pastures	WSC	None
Accipiter gentilis	Northern Goshawk	Present in coniferous, deciduous, or mixed forest at forest edges, or in open woodlands	WSC	None
Falco peregrinus anatum	American Peregrine Falcon	Areas with cliffs for nesting and perching near water bodies	WSC	Very low
Rallus longirostris yumanensis	Yuma Clapper Rail	Tall dense vegetation associated with marshes, rivers, and lakes	FE, WSC	None
Strix occidentalis lucida	Mexican Spotted Owl	Dense forest, coniferous and hardwood; steep-walled canyons	FT, WSC	None
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	Saguaro-ironwood forests; riparian areas where large trees provide nesting cavities	WSC	None
Charadrius alexandrinus nivosus	Western Snowy Plover	Beaches, sandy margins of streams or ponds, and dry mud or salt flats	WSC	None
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	Open woodland in the presence of thick underbrush, parks, riparian woodland, and scrub	FC, WSC	None
Megaceryle alcyon	Belted Kingfisher	Rivers, ponds, and lakes; needs embankments for breeding	WSC	Very low
Empidonax traillii extimus	Southwestern Willow Flycatcher	Riparian corridors with willow, cottonwood, or tamarisk	FE, WSC	Very low

Table 3-4 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
		Fish		
Cyprinodon m. macularius	Desert Pupfish	Shallow water in springs, small streams, and marshes; often in areas with soft substrates and clear water	FE, WSC	None
Gila elegans	Bonytail Chub	Pools, eddies, reservoirs, generally avoiding swift water, Colorado River; last natural population of the species is in Lake Mohave	FE, WSC	None
Gila intermedia	Gila Chub	Gila chub utilize a variety of habitat types in smaller streams, springs, and marshes. Adults prefer heavily vegetated deeper pools, while juveniles occur in riffles, pools, and along undercut banks	FE, WSC	None
Gila nigra	Headwater Chub	Mid to head water reaches of mid-sized streams where they are associated with deep, near-shore pools adjacent to stream riffles	FC	None
Gila robusta	Roundtail Chub	A resident of cool to warm water in mid-elevation streams and rivers	C, WSC	None
Meda fulgida	Spikedace	Adults occur in flowing waters of medium depth, typically at the outflow of creeks feeding large streams. Designated critical habitat in the Verde River	FT, WSC	None
Onchorhynchus apache	Apache Trout	Cool, clear, high-elevation streams and rivers	FT	None
Onchorhynchus g. gilae	Gila Trout	Small, narrow, shallow headwater streams with cobble substrate	FT, WSC	None
Plagopterus argentissimus	Woundfin	Warm, swift flowing streams with shifting, sandy substrate	FE, WSC	None
Poeciliopsis o. occidentalis	Gila Topminnow	Vegetated springs and margins, pools, and backwaters of creeks and small to medium rivers	FE, WSC	None
Ptychocheilus lucius	Colorado Pikeminnow	Typically present in warm waters of seasonally variable, fast-flowing rivers and streams with a high sediment load	FE, WSC	None
Tiaroga cobitis	Loach Minnow	A bottom-dwelling species frequenting turbulent riffles of rivers and larger tributaries. They prefer swift-flowing streams with gravelly to cobbly bottoms. Designated critical habitat in the Verde River	FT, WSC	None
Xyrauchen texanus	Razorback Sucker	Eddies, backwaters, and deeper water; over sand, mud, or gravel; Colorado River (designated critical habitat), Lake Mohave, and San Juan River (designated critical habitat)	FE, WSC	None
		Amphibians		
Rana chiricahuensis	Chiricahua Leopard Frog	Rocky streams with deep pools in oak and pine-oak woodlands and pine forests. Mountainous areas of southeast Arizona, southwest New Mexico, and Mexico	FT, WSC	None

Table 3-4 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
Rana yavapaiensis	Lowland Leopard Frog	Permanent water in creeks, springs, rivers, and stock tanks	WSC	None
Reptiles				
Gopherus agassizii	Sonoran Desert Tortoise	Rocky slopes, wash banks, creosote bush desert	WSC	Low
Thamnophis eques megalops	Mexican Garter Snake	Generally found in pine-oak or piñon-juniper elevations; associated with permanent water sources	WSC	None
Thamnophis rufipunctatus	Narrow-headed Garter Snake	A highly aquatic-dependent species of rocky lakeshores and clear rocky streams. Occurs from piñon-juniper up to ponderosa elevations	WSC	None
Plants				
Agave delamateri	Tonto Basin agave	On open hilly slopes associated with drainages; Tonto Basin to Verde River area. Population remnants of Hohokam and Salado cultures	HS	Very low
Agave murpheyi	Hohokam agave	Open, hilly slopes or alluvial terraces in desertscrub habitat; usually in close proximity to major drainage systems	HS	Very low
Echinocereus triglochidiatus var. *arizonicus*	Arizona hedgehog cactus	Rocky, steep-walled canyons, slopes, and boulder piles at mid elevations in Arizona Desert grassland habitat	FE	None
Purshia subintegra	Arizona cliffrose	Occurs on Tertiary limestone lake bed deposits of the Verde Valley Formation in Sonoran desertscrub habitat to 4,000 feet	FE	None

*Potential for occurrence in the Project area of influence
Status key:
FE – Federally listed under the ESA as an endangered species
FT – Federally listed under the ESA as a threatened species
FC – Candidate species proposed for federal listing under the ESA as threatened or endangered
DPS – distinct population segment
WSC – State of Arizona – AZGFD wildlife species of concern
HS – Arizona Department of Agriculture highly safeguarded

Federally Listed (Endangered Species Act) Species

Bald Eagle

The Sonoran Desert Area distinct population segment (DPS) of the Bald Eagle (*Haliaeetus leucocephalus*) is currently a federally listed threatened species. However, an October 6, 2004 petition to upgrade the status of the Sonoran Desert Area DPS of the Bald Eagle from threatened to endangered was denied by the U.S. Fish and Wildlife Service (USFWS) on August 30, 2006, and the species was delisted range-wide on July 9, 2007. The Arizona District Federal Court, in response to a civil suit, enjoined the USFWS from formally delisting the population on March 5, 2008. The USFWS subsequently conducted a 12-month review on the viability of the Sonoran Desert Area DPS of the Bald Eagle. On February 25, 2010 their findings were published in the Federal Register; based on current scientific and commercial information, the Sonoran Desert

Area DPS of the Bald Eagle did not meet the definition of a DPS (USFWS 2010). However, the Arizona District Federal Court, which originally had enjoined the USFWS from delisting the Bald Eagle, must lift its injunction against delisting, and the USFWS must then publish a notice in the Federal Register before the delisting becomes final. Until that time, the Sonoran Desert Area DPS of the Bald Eagle remains a listed threatened species under the ESA. It is considered unlikely that this decision will be promulgated prior to Project development, and the Sonoran Desert Area DPS of the Bald Eagle is therefore considered in this document. The Bald Eagle is also an AZGFD wildlife species of concern.

Resident Bald Eagle nesting occurs on Tonto Creek (below Gisela), and on the Salt and Verde rivers in portions of the TNF (Wheeler 2003; Lutch 2000). Bald Eagles are likely to be active in the Project area, primarily associated with Tonto Creek. Due to a lack of permanent water or large stature deciduous riparian trees suitable for perching or roosting along Rye Creek, their presence within the Project limits is most likely to be transitory. Potential for Project occurrence is very low.

Southwestern Willow Flycatcher

The Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is a federally listed endangered species. It is also an AZGFD wildlife species of concern. Designated Critical Habitat for the species is present along a 19.7-mile reach of Tonto Creek, from its confluence with Rye Creek south to the high water mark of Roosevelt Lake (USFWS 2005). The closest point of the Project to this Critical Habitat is a straight line distance of approximately 3 miles. The new sub-transmission lines, which would connect the new substation with the existing line north of Rye Creek, would cross Rye Creek 3.6 stream flow miles above the confluence with Tonto Creek. There is no suitable nesting habitat for the Southwestern Willow Flycatcher on Rye Creek within at least 2.5 miles of the Project limits. Because of the proximity and riparian connectivity of the Project to occupied flycatcher habitat on Tonto Creek, there is some potential for flycatchers to occasionally be present along the Rye Creek drainage within the Project limits while foraging or during spring or fall migration. Potential for presence is very low.

State of Arizona (Arizona Game and Fish Department) Wildlife Species of Concern

California Leaf-nosed Bat

The Project area is at the edge of the known distribution of the California Leaf-nosed Bat (*Macrotus californicus*) (Hoffmeister 1986). Abandoned mines that could provide roosting habitat for the California Leaf-nosed Bat are apparently not present in the Project area, and there is only a very low potential for this species occurring within the Project limits.

Western Red Bat

There are probably less than a hundred records of the Western Red Bat (*Lasiurus blossevillii*) from Arizona (AZGFD 2003a), although the species is probably more common than these records indicate. The Western Red Bat could be present in the Project area in summer where

broadleaf trees are present along Rye and Tonto creeks. The Arizona sycamore and cottonwood trees present in the Rye Creek channel within the Project limits could provide roosting habitat for Western Red Bats. Potential for occurrence is low.

Spotted Bat

There are no records for the Spotted Bat (*Euderma maculatum*) within the Project area, although due to its widespread distribution, it could occur in the area. There are probably no suitable daytime roosts for this species in the Project area, but this may not be an impediment to their use of the Project area for foraging. Spotted Bats have been documented foraging as far as 24 miles from their daytime roost (Rabe et al. 1998). Populations of the species tend to be local, and potential for the Spotted Bat occurring within the Project area is low.

Townsend's Big-eared Bat

Townsend's Big-eared Bat (*Corynorhinus townsendii*) is found throughout Arizona, but is apparently less common in the desert mountains. Due to a general lack of mining activity and geology that does not support cave resources, there is little if any suitable roost habitat for this species in the Project area. Individuals foraging in the Project area would likely have to travel a considerable distance to use the area; because of this, the potential for Townsend's Big-eared Bat occurring within the Project limits is low.

Common Black Hawk

Suitable habitat for the Common Black Hawk (*Buteogallus anthracinus*) may be present in the Project area along portions of Rye or Tonto creeks. There is no suitable nesting habitat for the Common Black Hawk on Rye Creek within at least 2.5 miles of the sub-transmission lines crossing. The birds are likely to occur near the Project only while moving from the Tonto Creek drainage to other suitable habitat. Potential for occurrence is very low.

American Peregrine Falcon

The presence of topographic relief and a solid prey base are the primary habitat elements supporting nesting American Peregrine Falcons (*Falco peregrinus anatum*). Due to a lack of suitable topography to support nesting there is only a very low potential for Peregrines occurring within the Project area.

Belted Kingfisher

Belted Kingfishers (*Megaceryle alcyon*) occur along perennial drainages, lakes, canals, and irrigation ditches, and nest in embankments associated with these habitats. They are also known to nest in road cuts, away from perennial aquatic foraging habitat (Corman and Wise-Gervais 2005). While suitable nesting habitat may be present near the Project on Rye Creek, the nearest

perennial waters suitable for foraging are 2.5 miles downstream of the Project crossing of Rye Creek. Potential for Belted Kingfishers occurring within the Project limits is very low.

Sonoran Desert Tortoise

Suitable habitat for the Sonoran Desert Tortoise (*Gopherus agassizii*) is present through much of the Project area. However, the Project area is very near the limits of the species' range, and the potential for occurrence of Desert Tortoises in the area is low.

Sensitive Plant Species

Two Arizona Department of Agriculture highly safeguarded plant species are known from Gila County, Arizona. These are the Tonto Basin and Hohokam agaves (*Agave delamateri* and *A. murpheyi*). Both of these species are thought to have been placed in cultivation from Mexico by the pre-historic Hohokam and Salado cultures (AZGFD 2003b). It is likely that most of the extant populations of each species are already known, and potential for either of these species occurring within Project limits is very low. No individuals of either of these agave species were located during the site visit conducted on July 31, 2008. The only agave species observed was the goldenflower century plant.

Environmental Consequences

Alternative 1 – No Action

Under the No Action Alternative, no disturbance to existing vegetation, wildlife, or habitats would occur; therefore, no impacts would result to biological resources, including the species discussed earlier in this document.

Alternative 2 – Proposed Action

Potential impacts to biological resources from the Proposed Action may include (1) disturbance to wildlife and their habitat during construction and maintenance; (2) loss of individual animals; (3) loss of vegetation during construction; and (4) introduction of non-native invasive plant species.

Potential Effects to Wildlife and Their Habitat

The biomes represented within the Project area include semidesert grassland throughout the overall Project area, with xeroriparian scrub vegetation on floodplains; and small, discontinuous groupings of broadleaf riparian vegetation within the Project reach of Rye Creek. Impacts to these habitats would include clearing of the sub-transmission line right-of-way for its full length (except the segment that would span Rye Creek), and removal of existing vegetation at all other Project sites. Removal of vegetation would reduce available forage, nesting habitat, and protective cover provided by these plants. The Proposed Action is located approximately

3.6 flow miles upstream of Tonto Creek and would have no impacts to vegetation along Tonto Creek.

Potential direct impacts to animals present in areas where Project ground disturbances would occur could include loss or disturbance of individual animals, their eggs, or young by heavy equipment or vehicle traffic. Potential indirect impacts include increased human access and increased potential for colonization by invasive plant and/or noxious weed species. The narrow (100-foot) width of the right-of-way that would be cleared for the connection of the new substation to existing lines would not result in habitat fragmentation for any wildlife species. Impacts to wildlife would be reduced with implementation of Project mitigation measures.

Avoidance of sensitive species and their habitats during their breeding season would eliminate or minimize impacts to these species. None of the potential effects of Project development, operation, or maintenance are anticipated to have any substantial effects on any sensitive species. Implementation of Project mitigation measures listed in Table 2-3 (mitigation measures 1–12, 14, and 23–27) would minimize impacts on wildlife and their habitats.

The 69/21kV sub-transmission lines would span the active flow channels of Rye Creek. The span across the active flow channels would be approximately 850 feet. The reach of Rye Creek that would be spanned is not perennial. No structures would be placed within active flow channels, and access for construction at spanning pole sites would be accomplished across the floodplain from private land to the northwest and from FR 184. There are a few small to moderate-sized sycamore and cottonwood trees within the braided active flow channel of Rye Creek near the sub-transmission line crossing area. These trees are not currently of a stature that would be attractive as perches for raptors (e.g., Bald Eagle, Common Black Hawk). The trees could eventually reach such stature, and could provide suitable perch or roost sites for raptors at some time in the future. Depending on final alignment of the stream crossing, some of these trees may need to be trimmed to provide for adequate conductor clearance. Maintenance of the line would require that these trees be kept at a limited height, possibly precluding their future use as perch or roost trees for raptors.

Since there would be no construction traffic in or disturbance to the active flow channels of Rye Creek, the potential for construction related erosion is greatly minimized. A spill prevention and erosion protection plan would be included in Project plans, and would mitigate for erosion that could potentially affect the quality of downstream waters. Implementation of Project mitigations (see Table 2-3, mitigation measures 1–8) would minimize potential effects to waters within the Project area.

Electrical lines can present collision and electrocution hazards for birds. The existing 345kV transmission lines that cross Rye Creek downstream of the proposed sub-transmission lines crossing location are an existing potential collision hazard for birds. The addition of the sub-transmission lines would be additive to this hazard for birds using or passing through the area, but less so than if they were placed outside an existing corridor. To mitigate for avian electrocution potential, Project poles would incorporate design elements recommended by the Avian Power Line Interaction Committee (APLIC [2006]) (see Table 2-3, mitigation measure 11).

Potential Loss of Vegetation

Delineation of vegetation communities was determined during the site visit. While a portion of the Project (sub-transmission lines) would cross the xeroriparian corridor of Rye Creek, the majority of the Proposed Action occurs within semi-desert grassland habitat.

As described under Soil and Water Resources above, construction of the Proposed Action would involve approximately 51.7 acres of disturbance. Impacts include approximately 20.1 acres of disturbance for the substation, and an additional 8.0 acres for the substation buffer. Other disturbances include upgrading of the existing FR 379, construction of a new access road to and clearing of the sub-transmission line right-of-way, and development of acceleration and deceleration lanes for SR 87. Disturbance associated with the replacement 345kV tower and turning structures is estimated to be up to 18 acres.

A breakdown of Project vegetation disturbance is given in Table 3-4. Existing rights-of-way and access roads would be used where available, which would minimize resource impacts.

Table 3-5 Potential Disturbance to Vegetation Communities by Alternative

Vegetation Community	Disturbance	Alternative 1 No Action (acres)[1]	Alternative 2 Proposed Action (acres)[1]
Semidesert Grassland	Permanent	0	**47.05**
Xeroriparian Corridors	Permanent	0	**4.66**
Total	**Permanent**	**0**	**51.7**

[1]Acres of disturbance was calculated by a general assessment of new access roads for the construction and operation of the Proposed Action, pole site disturbance, and substation acreage. All acreage is approximate and subject to final engineering and design.

Except for vegetation within the span across Rye Creek, which may receive minor trimming to provide conductor clearance, the 100-foot width of the sub-transmission lines right-of-way would be cleared of vegetation. Removal and trimming of vegetation required for construction of the Project would not be of a scale that would substantially affect the quantity of the two habitat types present in the Project area.

Construction of the new Mazatzal Substation would remove approximately 28.1 acres of altered semidesert grassland habitat on the mesa south of Rye Creek. Approximately 18.95 additional acres of this vegetation type would be removed for development of other Project components, including modifications to the existing 345kV transmission line, improvements to the substation access road (FR 379), and development of the 69/21kV sub-transmission lines. Permanent loss of xeroriparian vegetation would be limited to no more than 4.66 acres. Impacts to these two habitat types would affect considerably less than 1 percent of such habitats present on a forest-wide scale.

Potential Impacts to Special Status Species

Federally Listed (Endangered Species Act) Species

Bald Eagle

There would be no direct effects to the Bald Eagle from the development of the Proposed Action. Power lines can present collision and electrocution hazards for Bald Eagles and other birds. The existing 345kV transmission lines that cross Rye Creek downstream of the proposed sub-transmission lines crossing location present a potential collision hazard for birds. The addition of the sub-transmission lines would be additive to this hazard for birds using or passing through the area. Implementation of mitigation measure 11 (see Table 2-3) would eliminate the potential for avian electrocution. Implementation of Project mitigation measures 1–8 and 10 (see Table 2-3) would minimize the potential for effects to quality of downstream waters that may support fish that could be used by Bald Eagles as prey.

Southwestern Willow Flycatcher

There would be no direct effects to the Southwestern Willow Flycatcher from the development of this Project. The presence of the sub-transmission lines across Rye Creek would represent a potential collision hazard for Southwestern Willow Flycatchers and other birds using the xeroriparian area. Presence of the new sub-transmission lines would be additive to the potential collision hazard of the existing 345kV transmission lines downstream of the new lines. There would be no loss of habitat for the species resulting from construction of the lines. Implementation of Project mitigation measures relevant to water quality and protection of riparian habitats (see Table 2-3; mitigation measures 1–8 and 10) would minimize potential effects to water quality in suitable Southwestern Willow Flycatcher habitat (including designated Critical Habitat) downstream of the Project.

State of Arizona (Arizona Game and Fish Department) Wildlife Species of Concern

California Leaf-nosed Bat

Potential impacts to the California Leaf-nosed Bat would likely be limited to vegetation clearing associated loss of some insects that could be used as prey. The small scale of such impacts that may result from Project development is not considered significant for California Leaf-nosed Bats.

Western Red Bat

Potential impacts to the Western Red Bat could include loss of potential roosting habitat in some broadleaf riparian trees that occur within the sub-transmission line alignment at the Project crossing of Rye Creek. This would result from trimming of trees to obtain the necessary conductor clearance. Minor loss of insect prey could result from Project vegetation removal, but is not considered significant for the species.

Spotted Bat

Potential impacts to the Spotted Bat would likely be limited to vegetation clearing-associated loss of some insects that could be used as prey. The small scale of such impacts associated with Project development are not considered significant for Spotted Bats.

Townsend's Big-eared Bat

Potential impacts to Townsend's Big-eared Bats would be limited to vegetation clearing associated loss of insects that could be used as prey. The level of impacts to these potential food resources is considered inconsequential for the species.

Common Black Hawk

The existing 345kV transmission lines that cross Rye Creek downstream of the proposed location of the new sub-transmission lines present a potential collision hazard for birds. The addition of the Project sub-transmission lines would be additive to this hazard for birds using or passing through the area. Design of poles would follow APLIC guidelines, precluding any avian electrocution hazard. Implementation of Project mitigation measures 1–10 (see Table 2-3) would minimize the potential for impacts to downstream water quality and riparian habitats.

American Peregrine Falcon

Potential impacts to Peregrines from the Project would be limited to electrocution and collision with sub-transmission lines. Sub-transmission line support structures would incorporate APLIC design recommendations, which would eliminate the potential for avian electrocution. Collision potential would be additive to that presented by the adjacent 345kV transmission line.

Belted Kingfisher

Due to a lack of perennial waters in the Project reach of Rye Creek there is no prey base available that would be attractive to Belted Kingfishers. However, steep embankments along Rye Creek could be used by the birds for nesting, with the birds foraging downstream in the lower reaches of Rye Creek and proximal segments of Tonto Creek. Since the Project would span Rye Creek, with no attendant impacts to either the creek or its embankments, there would be no effects to potential Belted Kingfisher nesting habitat in the area. Project erosion protection and pollution prevention mitigations would minimize the potential for effects to downstream riparian habitats that may support prey which could be used by Belted Kingfishers.

Sonoran Desert Tortoise

Impacts to Sonoran Desert Tortoises could include crushing of individual animals, their eggs, or young on the surface or in burrows by construction equipment or other vehicles. Tortoises could

also be killed on access roads. Vegetation clearing could remove suitable habitat, including burrow sites and vegetation that provides shelter and food for tortoises.

Sensitive Plant Species

Impacts to sensitive plant species could include loss of plants and/or habitat alteration resulting from ground disturbance associated with construction, particularly vegetation removal. Removal and replacement of topsoil in areas where sensitive plants occur could minimize impacts to the seed bank. Ground disturbing activities could provide habitat suitable for colonization by invasive plant species that may compete with sensitive plants for resources. Invasive plants could also change the local fire regime. Off-site cleaning of construction equipment prior to initiating construction and prior to moving equipment from Project areas known to contain invasive plant species would minimize the spread of invasive plants. Implementing Project mitigation measures would minimize the potential for impacts to sensitive plants (see Table 2-3, mitigation measures 4–6, 9 and 10, 13–15, 19, and 23–27).

Other Species Potentially Affected

TNF Management Indicator Species (MIS) are addressed in the Project MIS report. Impacts to TNF MIS that would result from the development of the Proposed Action would not affect population trends for these species on the TNF.

Cumulative Impacts

Alternative 1 – No Action

Implementation of the No Action Alternative, along with past, present, and reasonably foreseeable actions, would have minimal cumulative effects to vegetation, sensitive plant, or wildlife species, and would not contribute to colonization by invasive plant species.

Alternative 2 – Proposed Action

Prescribed fire and control of exotic species would impact vegetation by improving plant vigor, plant diversity, and native species, consequently improving the ecosystem health of the vegetation in the study area. Vegetation management along power line corridors lessens the likelihood of fire, but results in loss of vegetation available for habitat. Livestock grazing activities increase the probability of some terrestrial wildlife species being trampled, and may reduce forage availability for species that share habitat with them. Recreational activities, particularly OHV use, would continue to cause disturbance to wildlife and associated habitat, including potential injury or mortality. Upgrade of roads in the study area may increase access and could result in higher vehicle speeds along improved roads. Ongoing population growth and development would result in the loss of vegetation and available habitat for species in the Project area. The installation of additional electrical sub-transmission lines along FR 184 would create

additional disturbance for pole locations, which would contribute to a minor decrease in vegetative cover and available habitat for species in the study area.

LAND USES

The land use inventory identified existing, planned, and officially designated uses within the study area based on the review and interpretation of existing maps, documents, and field reconnaissance. Federal, state, county, and local agencies were contacted to obtain and/or confirm specific land use data.

Affected Environment

Existing Land Use

The following categories of existing land use were identified and mapped based on information from aerial photography, existing maps, the TNF forest plan, and the *Gila County Comprehensive Plan*, and verified through field reconnaissance.

Residential

The majority of the study area has either no residences or widely dispersed rural residences, including a few ranches along FR 184. The only subdivision within the study area is Deer Creek Village along SR 87 and Deer Creek Drive; it is approximately 1 mile away from the existing 345kV transmission lines and the proposed substation. The residential areas range from low (0–2 dwelling units per acre) to medium density (2.1–8 dwelling units per acre). Other communities near to the study area would benefit from the construction of the Project, but would not have any direct impacts associated with the construction of the Project.

Livestock Grazing

The majority of the land within the study area is NFS land that is primarily open rangeland used for livestock grazing. Two grazing allotments occur within the study area, Hardt Creek and Deer Creek (formerly the Bar T Bar). The Proposed Action occurs primarily within the Hardt Creek allotment, including the substation and sub-transmission lines. A portion of FR 379 occurs within the Deer Creek allotment. The Hardt Creek grazing allotment encompasses 14,313 acres, and allows grazing of up to 200 adult cattle per year plus 200 yearlings seasonally; the allotment is currently authorized to graze 125 cow/calf pairs. The Deer Creek allotment is also currently authorized to graze 125 cow/calf pairs. The Deer Creek term grazing permit is for up to 310 adult cattle plus up to 40 yearlings seasonally, and up to 10 horses annually (Cress 2009). Two stock tanks associated with the Deer Creek allotment are located within the study area.

Transportation

The study area encompasses a mix of federal, state, county, and private roadways. The primary highways in the study area include SR 87 and SR 188. Regularly maintained and non-maintained NFS roads that provide access to TNF land also are present within the study area. FR 379, currently two-track roads, would be improved and used as access roads for the proposed substation and 69/21kV sub-transmission lines. FR 184/Rye Creek Road, a well-graded dirt road, would also be used during construction of the sub-transmission lines.

Temporary turn lanes from SR 87 to FR 379 north- and south-bound are proposed as part of the Project. The temporary lanes would be removed when no longer required. There are no other known improvements or additions planned for any federal, state, county, or private roadways within the study area.

Utilities

There are three existing power lines within the study area, all owned and operated by APS. The existing Four Corners–Cholla–Pinnacle Peak 345kV lines cross the study area running northeast to southwest and would interconnect with the proposed substation. An existing 69/21kV line begins in Rye, and then parallels SR 87 and FR 184. The proposed sub-transmission lines would connect with the endpoint of this line. A 21kV distribution line and telephone lines are also present in the study area.

Other

There are no commercial, industrial, public, or air facility land uses within the study area.

Future Land Use

Future land use was mapped based on information contained in existing planning documents (including the *Gila County Comprehensive Plan* and the TNF Plan), as well as correspondence with staff and officials representing federal, state, and county agencies. The TNF forest plan information was the primary basis of this analysis and represents guidelines for development until specific development plans are proposed.

Tonto National Forest

The TNF Plan provides an in-depth description of current and future management directions and emphases for 47 Management Areas within the TNF. The Management Area identified within the study area is 6J (General Management Area). Within this Management Area, the emphasis is to manage for a variety of renewable resources with primary emphasis on wildlife habitat improvements, livestock forage production, and dispersed recreation. Watersheds would be managed to improve them to a satisfactory or better condition. Other management emphases include improving and managing riparian areas to benefit riparian-dependent resources;

prescribed fire would be used as a tool to meet or achieve desired resource objectives (TNF Plan 1985).

Gila County

The Gila County Comprehensive Plan (2003) is intended to help maintain and enhance opportunities and qualities that attract people, and to assist the county to realize its potential through logical and planned decision making. The plan discusses the future land uses envisioned for unincorporated portions of the county.

Within the study area, the majority of land is not categorized by the comprehensive plan, including the substation site, because it is under NFS jurisdiction. The areas that are classified are shown as residential. The Deer Creek Village subdivision is shown as a core of "Residential – 2 to 3.5 dwelling units per acre" surrounded by an area of "Residential – 0.4 to 1.0 dwelling units per acre." The private lands along FR 184/Rye Creek Road are shown as "Residential – 0 to 0.1 dwelling units per acre" (Gila County Comprehensive Plan 2003).

Environmental Consequences

Alternative 1 – No Action

No impacts on existing or planned land uses would result through implementation of the No Action Alternative.

Alternative 2 – Proposed Action

The Proposed Action occurs on TNF land that is open rangeland used for livestock grazing. Disturbance to grazing allotments would result from construction of the Proposed Action. Short-term impacts include the disturbance of land during construction of the Project, and potential restrictions on access to FR 379. Long-term impacts include the removal of approximately 52 acres for the Proposed Action from the Hardt Creek and Bar T Bar/Deer Creek grazing allotments.

Cumulative Impacts

Alternative 1 – No Action

There are no direct or indirect effects of implementing the No Action Alternative, and therefore there are no cumulative effects from this alternative.

Alternative 2 – Proposed Action

Cumulative impacts to land use could occur through changes in the designation and development of land resources and access of the land. Future growth and development of adjacent non-federal

lands is expected to result in increased requests for use authorizations. Over time, continued population growth of the small communities in this area will contribute to greater visitation to the study area. Livestock grazing would continue within the study area, which could present conflicts with greater access in the area. The Proposed Action would provide additional reliable power to communities in the vicinity of the study area, which would foster additional growth in these communities, possibly requiring additional electrical lines.

RECREATION

Affected Environment

Recreational uses on the TNF land within the study area are primarily of a dispersed nature, including hiking, wildlife viewing, bird-watching, OHV driving, and hunting. Deer Creek Trailhead is the only recreation site within the study area. Hunting is allowed on the TNF, under permit from the AZGFD. The study area is within the AZGFD's Game Management Unit 22. Game species include Bighorn Sheep, Black Bear, Elk, Javelina, Merriam's Turkey, Mountain Lion, Mule Deer, White-tailed Deer, Tree Squirrel, and Quail. The study area is generally within an area where elk, javelina, deer, and quail are hunted. Hunting seasons vary by species, but generally occur between the months of August and January.

The Recreation Opportunity Spectrum (ROS) is an inventory and management tool that categorizes lands managed by the Forest Service into six classes. Each ROS classification is defined by its setting, natural and developed, and by the probable recreational experiences and activities that it affords (TNF Plan 1985). In the USFS recreation site planning process, ROS classifications are used to set recreational development strategies.

The Proposed Action falls entirely within the Roaded Natural class, which is characterized by predominantly natural-appearing environments with moderate evidences of the sight and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for construction standards and design of facilities.

Environmental Consequences

Alternative 1 – No Action

No impacts on recreation opportunities would result through implementation of the No Action Alternative.

Alternative 2 – Proposed Action

Short-term impacts include the disturbance of land during construction of the Project, and potential restrictions on access to FR 379. Long-term impacts include the removal of approximately 52 acres for the Proposed Action from dispersed recreation. The Proposed Action

would not modify the ROS classification in the area and would be in compliance with management objectives. Because existing access (FR 379) would be upgraded, new access roads would not be necessary for the substation. A new access road would be constructed for construction and maintenance of the sub-transmission lines, but the road would not connect to other roads or trails, and thus would not increase access in the area.

Cumulative Effects

Alternative 1 – No Action

There are no direct or indirect effects of implementing the No Action Alternative, and therefore there are no cumulative effects from this alternative.

Alternative 2 – Proposed Action

Over time, continued population growth of the small communities in this area would contribute to greater visitation to the study area. Livestock grazing would continue within the study area, which could present conflicts with greater access and recreational use in the area. Improved access to the study area would potentially increase recreational use of the area. OHV use in the study area is expected to continue and may contribute to additional disturbance to vegetation, resulting in runoff and erosion in areas of concentrated disturbance.

SOCIOECONOMICS

This section describes the demographic, economic, and fiscal characteristics of the study area, as well as the social and economic changes that could result from the Proposed Action. From a socioeconomic perspective, the primary effects associated with sub-transmission lines and substation construction and operation include: (1) economic activities associated with right-of-way acquisition; (2) potential impacts to nearby communities, particularly during construction (e.g., influx of construction personnel); and (3) potential enhancement of future development opportunities.

Affected Environment

Gila County encompasses 4,796 square miles and is a source for great mineral wealth. The county's major industries include ranching, tourism and recreation, and copper production. As of 2004, the county had a population of 54,060 and a labor force of 18,635. The TNF owns 56 percent of the land within Gila County (Arizona Department of Commerce [ADOC] 2006).

The nearest incorporated town to the Project area is the City of Payson. Principal economic activities in Payson include tourism, retirement living, construction industries, and a growing importance of manufacturing and service firms. Economic and employment activity within the study area includes government employment for the TNF, and grazing and ranching activity. Population statistics for Arizona, Gila County, and Payson are provided in Table 3-5.

Table 3-6 Population in the Project Area				
Location	**1990**	**2000**	**2004**	**2010 (projected)**
Arizona	3,665,228	5,130,632	5,833,685	6,145,108
Gila County	40,216	51,335	54,060	57,766
Payson	8,377	13,620	15,120	n/a
Sources: ADOC 2006; Arizona Department of Economic Security 2006				

Environmental Consequences

Alternative 1 – No Action

Under the No Action scenario, it is expected that outages would occur, as the system is overloaded. This may be a particular problem in either summer or winter months when electricity use peaks. The reliability of electric service would continue to deteriorate, voltage levels would become unacceptable, and curtailment of electricity to some customers would be necessary during peak loading periods. Implementation of this action may curtail new residential development and result in marginal and unreliable electrical service to existing customers. There would be no new revenues collected by the county or federal government from the lease of the right-of-way.

Alternative 2 – Proposed Action

The primary socioeconomic effects associated with the Proposed Action would include income from jobs, goods, and services during the construction period; right-of-way revenue to affected entities; and the establishment of new electrical infrastructure that would contribute to future development. The Payson, Rye, and Tonto Basin areas would likely experience an increase in income during Project construction from short-term housing, restaurants, and services. The majority of the workforce is anticipated to be located in Phoenix. Social impacts would include potential short-term impacts from the influx of construction workers, such as short-term housing or motel use. The primary long-term impact of the Proposed Action would include the provision of additional reliable electricity to nearby communities contributing to the facilitation of residential and other development. Other long-term impacts may include economic effects of operation and maintenance activities, as well as tax revenue from easements through federal land.

Cumulative Impacts

Alternative 1 – No Action

Implementation of the No Action Alternative, along with past, present, and reasonably foreseeable actions, could result in increased outages and an inadequate supply of electricity to serve existing and future development in the Payson, Rye, and Tonto Basin areas. Indirectly, the lack of reliable power and insufficient capacity could reduce or limit development in the area.

Alternative 2 – Proposed Action

Positive, long-term socioeconomic impacts would be associated with accommodating future electrical needs to support additional growth and economic development in the surrounding area. The Project would be one infrastructure component of several (roads, water, etc.) that would be needed to serve future development within and near the Payson, Rye, and Tonto Basin areas. The Proposed Action would provide electrical power, which would contribute to growth of communities near the study area. The amount of vegetation available to livestock in the Hardt Creek and Deer Creek (formerly the Bar T Bar) grazing allotments would be reduced, which would contribute to a reduction in the number of animals allowed to graze. Improved access could result in dispersed recreation and OHV users, who would likely patronize local businesses while recreating.

ENVIRONMENTAL JUSTICE

Affected Environment

Presidential Executive Order 12898, regarding "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations," requires that each federal agency identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations. Demographic information for Payson and Gila County are shown in Table 3-6.

Table 3-7 Demographics in the Project Area

Race	Payson (percent)	Gila County (percent)
One race	98.8	98.2
Caucasian	94.8	77.8
African-American	0.3	0.4
Native American	1.9	12.9
Asian	0.5	0.4
Other	1.4	6.7
Two or more races	1.2	1.8
Hispanic/Latino[1]	12.5	16.6

Sources: U.S. Census Bureau 2000
[1]Hispanic refers to ethnicity and is derived from the total population, not as a separate race; i.e., the U.S. Census Bureau calculates Hispanic heritage differently than racial composition.

During the scoping process, the USFS considered whether the Proposed Action in this geographic area would potentially affect any low-income, minority populations, or Indian Tribes. As part of the scoping process, a consultation letter was sent by the USFS to the potentially affected Native American tribes in the Project vicinity to determine if the tribes had any concerns about the Project.

Environmental Consequences

The Proposed Action would not negatively impact any minority population in the immediate area or region at large. No disproportionately high or adverse environmental impacts on Native Americans, minority, or low-income communities in surrounding areas are anticipated to occur from the Proposed Action. The Proposed Action could potentially provide jobs to minority and low-income individuals, as well as benefits associated with tax revenues to local communities.

Cumulative Impacts

Alternative 1 – No Action

Implementation of the No Action Alternative, along with past, present, and reasonably foreseeable actions, could limit future development within and near the Payson, Rye, and Tonto Basin areas. However, this would not have a disproportionately high impact on minority or low-income populations.

Alternative 2 – Proposed Action

The Proposed Action would contribute to future development of communities near the study area by providing additional reliable power. The construction of the Project would contribute to a reduction in vegetation available for grazing. Improved access may encourage recreation and OHV use in the study area. None of these actions, along with the Proposed Action, would result in a disproportionately high impact on minority or low-income populations.

VISUAL RESOURCES

This section of the EA addresses visual resources, including visual quality objectives (VQO), and visibility related to the construction, operation, and maintenance of the proposed substation and 69/21kV sub-transmission lines. The text below provides a description of the affected visual resource environment for the proposed Project, followed by a description of the potential impacts to visual resources.

The visual resource study was based upon the Visual Management System (National Forest Landscape Management, Volume 2, Handbook Number 462, 1974). The visual study included a data inventory and assessment of potentially affected visual resources associated with the construction and operation of the proposed Project. Data sources included existing land use plans, aerial photography, USFS data, and field reconnaissance. Data inventory included the determination of VQO, VQO compliance, and viewing conditions within the study area.

Agency Landscape Management Objectives

The scenic qualities of forest landscapes are valuable resources and important factors in the development of management actions. Primary objectives of scenery management are to maintain

natural appearance and to minimize alterations that contrast with the natural elements of forest landscapes.

The TNF Land and Resource Management Plan directs that the scenic qualities of forest landscapes be recognized and emphasized in all resource planning and management activities. All lands on the Tonto were inventoried to determine Variety Classes, Distance Zones, and Sensitivity Levels. The viewers' position from sensitive travel routes, along with viewpoints and their importance related to the landscape, were evaluated to determine their significance. The land within the Project area was inventoried and exhibits scenic attributes, described as follows.

Variety Classes determine which landscapes are most valuable from the standpoint of scenic quality. The three classes are A – Distinctive, B – Common, and C – Minimal. The majority of the Project area is classified as Class C, which has little change in form, line, color, or texture. There are isolated areas of Class B, which consists of terrain that is only moderately varied. Variety Class A is not present in the Project area.

Distance Zones are the portions of a particular landscape being viewed. They are used to describe the part of a landscape that is being inventoried or evaluated. The three distance zones are foreground (within .25–.5 mile from observer), middleground (from foreground to 3–5 miles from observer), and background (from middleground to infinity).

Sensitivity Levels are a measure of people's concern for scenic quality of the National Forests. Three measures are utilized, including Level 1 – Highest Sensitivity, Level 2 – Average Sensitivity, and Level 3 – Lowest Sensitivity. The levels are determined for the land viewed from travel routes and use areas. The Project area is classified as Sensitivity Level 1.

Variety Classes, Distance Zones, and Sensitivity Levels are combined through a matrix system to determine a VQO, which in turn specifies how much visible manmade alteration of a landscape is permissible.

Affected Environment

The assigned VQO for the impacted areas is 100 percent Partial Retention. The VQO of Partial Retention allows management activities to be apparent, but requires that the landscape remain at least predominantly natural. Activities may repeat form, line, color, or texture common to the characteristic landscapes; however, changes in the size, amount, intensity, direction, and pattern of landscape elements should remain visually subordinate to the characteristic landscape.

In general, VQOs for highly scenic and/or highly sensitive and visible landscapes require the retention of a natural appearance. A greater degree of landscape alteration is acceptable in landscapes that are inherently less scenic, seen from a greater distance, or seen from less sensitive locations.

The area of the proposed Project is generally natural in appearance. Currently, visual resources within the Project area generally meet the prescribed VQO levels as defined in the Forest Plan. Visual quality has been compromised by existing landscape alterations, including the existing

Four Corners–Cholla–Pinnacle Peak 345kV transmission lines, a 69kV sub-transmission line, SR 87, FR 184, FR 379, FR 379B, FR 380, and other paved and unpaved roads.

Environmental Consequences

Alternative 1 – No Action

The No Action Alternative would not impact visual resources.

Alternative 2 – Proposed Action

The substation and power lines would be visible from SR 87 intermittently for approximately 4 miles in the middleground distance zone. The Project would be seen from dispersed residences along FR 184 in the middleground distance zone. Recreationists participating in dispersed activities in the area would have potential views of the Project in all distance zones; however, the substation and power lines would be back-dropped by adjacent terrain and viewed in the context of existing modifications; therefore, Project contrast would be reduced. The Barnhardt Trailhead and trail are located in the background distance zone (5 miles and beyond) and the Project would be partially to completely screened by terrain. Travelers on FR 379, FR 379B, and FR 380 would have foreground views of the Project and would be minimally screened by topography and vegetation. The Project would pose short- and long-term impacts to the visual quality of the landscape, although the VQO of Partial Retention would be met with appropriate mitigation measures.

Cumulative Effects

Alternative 1 – No Action

There are no direct or indirect effects of implementing the No Action Alternative, and therefore there are no cumulative effects from this alternative.

Alternative 2 – Proposed Action

The continuation of grazing throughout the study area would result in modified vegetation patterns. Recreation and OHV use created by improved access could result in disturbance, including new trails. Additional electrical lines required by further growth and development in nearby communities would require new structures and access. The application of prescribed fire management would gradually alter the landscapes where treatments are conducted. Smoke from prescribed fires used for the same purpose would sporadically affect the quality of viewsheds and interfere with the public's viewing of scenery. The Proposed Action would contribute to the cumulative impacts that are occurring in the area. Mitigation to reduce the severity of the impacts would effectively reduce, but not eliminate, the degree of cumulative effects.

HERITAGE RESOURCES

The term "heritage resource" refers to a broad category of resources that includes prehistoric and historic archaeological sites, buildings, districts, structures, locations, or objects considered important to a culture or community for scientific, traditional, religious, or other reasons. Heritage resources deemed significant for their contribution to broad patterns of history, prehistory, architecture, engineering, and culture are eligible for listing on the National Register of Historic Places (NRHP) and afforded certain protections under the NHPA. Because the Project is a federal undertaking, it is subject to compliance with Section 106 of the NHPA of 1966, as amended (16 U.S.C. 470 et seq.). Section 106 (36 CFR Part 800, as amended August 5, 2004) requires federal agencies to consider the effects of their undertakings on historic properties, and consult with the State Historic Preservation Office (SHPO). In addition, Section 106 and the AIRFA also specify that Native American concerns be taken into consideration.

To be eligible for listing on the NRHP, a property must be significant under one or more of four evaluation criteria:

- Criterion A: Associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B: Associated with the lives of persons significant in our past
- Criterion C: Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction
- Criterion D: Yielded, or may be likely to yield, information important in prehistory or history.

In addition, a property must be able to convey its significance through the retention of specific aspects of integrity, such as location, design, materials, setting, workmanship, feeling, and association. In general, properties less than 50 years of age, unless of exceptional importance, are not eligible for listing on the NRHP.

Definition of the Area of Potential Effects

As defined in Section 106 (36 CFR Part 800.16[d]), the area of potential effect (APE) refers to the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties," is "influenced by the scale and nature of an undertaking," and "may be different for different kinds of effects caused by the undertaking." The APE for the Project includes the footprint of the substation, transmission lines connecting to the substation, and access roads used to convey machinery and equipment to the substation and transmission lines during construction, and for subsequent maintenance.

To comply with NHPA Section 106, EPG archaeologists conducted a cultural resources study consisting of a detailed Class I records review, as well as an intensive Class III pedestrian survey in support of the EA and the USFS's compliance with the NHPA (Rowe and Shelley 2009).

In addition, Section 106 specifies that as lead federal agency, it is the responsibility of the USFS to consult with interested tribes to identify properties of special significance to them in the Project area. This responsibility is reinforced by the AIRFA enacted by Congress in 1978, directing federal agencies to minimize interference with the free exercise of Native religion, and accommodate access to and use of important religious sites. Properties identified through the tribal consultation process may include traditional cultural properties (TCP), sacred landscape or landscape elements, and traditional use areas important for Native American cultural and religious practices. This consultation would occur when the Class I/Class III cultural report has been accepted by the USFS and can be distributed to interested tribes in the area.

Affected Environment

A Class I inventory was conducted to determine previously identified historic properties in the Project study area. This inventory involved a review of the records maintained by the following institutions:

- ADOT
- Arizona SHPO
- Arizona State Museum (AZSITE Database)
- Bureau of Land Management (General Land Office maps)
- National Park Service (NRHP)
- TNF Supervisor's Office

The detailed Class I records review identified 239 previously recorded cultural properties in the area around the proposed Project. Large, prehistoric habitation sites occur in lower-elevation settings along major watercourses in the area, while smaller 1- to 5-room structures associated with dry-farming agricultural fields and features are located on higher-elevation terraces and ridges above watercourses.

Large, prehistoric habitation sites were occupied during the Hohokam Preclassic and/or Classic periods, such as the Rye Creek Ruin (AR-03-12-06-54), the Deer Creek Site (AR-03-12-06-538) and the Hilltop Ruin (AR-03-12-06-539). The Rye Creek Ruin included both a Preclassic occupation as well as a Classic Period occupation, the latter in the form of a large, 150-room compound. The Deer Creek Site is a Preclassic Hohokam hamlet with at least 17 pithouses, dating from the Gila Butte phase to the Sacaton phase (Elson and Craig 1992). The site also contains an artifact scatter consisting of a light scatter of Apache and Yavapai sherds. The Hilltop Ruin also has a Preclassic occupation consisting of at least five pithouses and a cremation area (Elson and Craig 1992).

More common historic properties identified in the Class I records review were small, single-room surface structures not associated with major habitation areas, but commonly co-occuring with agricultural features in upland settings that suggest dry-farming techniques were employed. At these structures, there are variable amounts of construction rock present, and artifact diversity and density are also variable. In some instances, construction debris indicates less than four walls and/or only low wall foundations, and artifact diversity and density are low. In these cases, interpretation of the structures as temporarily used field houses may be warranted. In other

instances, construction debris suggests the former presence of four-walled single room structures with high cobble masonry walls, often with relatively dense and diverse artifact assemblages. Occupation at these structures may have been more permanent than at field houses, and a broader range of activities likely took place in these locations.

Intermediate between large habitation sites and single room structures, there were also a few sites identified in the Class I records review that consisted of small roomblocks of two to six rooms. Some of these included a compound wall partially or wholly enclosing a central plaza-like space associated with rooms. These sites may represent Saladoan farmstead- or hamlet-scale occupations.

The intensive Class III pedestrian survey conducted within the Project APE revealed the presence of six historic properties (Table 3-7). All are prehistoric archaeological sites, and all are considered eligible for listing on the NRHP (Wood 2010, personal communication). These properties include prehistoric agricultural field areas with rock piles and terrace features, collapsed one-room surface structures, possible habitation areas, and artifact scatters. These sites range in age from the Hohokam Preclassic through Salado Classic periods. Although the Class III survey included lower-elevation streamside contexts, no large habitation sites were located. However, two sites with potentially deeply buried deposits may represent small Preclassic and/or Classic Period farmsteads/hamlets. More common in the Class III survey area were collapsed, single-room surface structures, some associated with agricultural features (rock piles and/or terraces), and all with variably dense and diverse artifact assemblages.

Table 3-8 Historic Resources in Project APE

Site Number	Time Period	Description	Eligibility	Project Component	Potential Impact(s)	Mitigation
AR-03-12-06-1403	Classic Period	Structure/ Artifact Scatter	Eligible, Criterion D	Access road	Grading (cut and fill)	Detailed mapping, test excavation in structure
AR-03-12-06-1425	Classic Period	Structure/ Agricultural Field/ Artifact Scatter	Eligible, Criterion D	Access road	Grading (cut and fill)	Detailed mapping, test excavation in structure
AR-03-12-06-2707	Salado/ Classic Period, Historic	Structure/ Agricultural Field/ Artifact Scatter	Eligible, Criterion D	Substation footprint	Grading/ leveling	Detailed mapping, test excavation in structure, in clearing near historic feature, cross-section 1-3 rock features
AR-03-12-06-2940	Salado/ Classic Period	Structure/ Artifact Scatter	Eligible, Criterion D	Twin 69kV Lines	Tower and access road construction, right-of-way vegetation clearance	Avoidance; adherence to vegetation clearance protocols
AR-03-12-06-2941	Hohokam/ Preclassic Period	Possible Pithouse/ Artifact Scatter	Eligible, Criterion D	Twin 69kV Lines	Tower and access road construction, right-of-way vegetation clearance	Avoidance; adherence to vegetation clearance protocols

Table 3-8 Historic Resources in Project APE						
Site Number	**Time Period**	**Description**	**Eligibility**	**Project Component**	**Potential Impact(s)**	**Mitigation**
AR-03-12-06-2942	Salado/ Classic Period	Possible Habitation Site/ Artifact Scatter	Eligible, Criterion D	Twin 69kV Lines	Tower and access road construction, right-of-way vegetation clearance	Avoidance; adherence to vegetation clearance protocols

Environmental Consequences

Alternative 1 – No Action

Implementation of the No Action Alternative would result in no historic properties affected.

Alternative 2 – Proposed Action

Implementation of the Proposed Action could potentially impact six NRHP-eligible prehistoric archaeological sites in the Project APE, consisting of agricultural field areas with rock pile and terrace features, small masonry structures, and associated artifact scatter, ranging in age from the Hohokam Preclassic through Salado Classic periods. Mitigation measures for the affected historic properties vary based on their location with respect to Project components. Under the Proposed Action, three sites would be crossed by proposed twin 69kV transmission lines, but proposed mitigation measures would result in No Historic Properties Affected for these sites. Two sites would be crossed by a proposed access road, and one site would be located within the proposed substation footprint. For these sites, the Proposed Action will have an adverse effect on heritage resources under the NHPA. Adverse effects may be resolved by excavation data recovery through the implementation of a mitigation treatment plan approved by the Forest Service and pending Forest Service consultation with the SHPO, the Advisory Council on Historic Preservation, and interested Tribes regarding the results of the inventory survey and proposed mitigation treatment plan. A description of impacts to these sites and proposed mitigation measures for each by Project component are provided in more detail as follows.

Sites along Proposed Transmission Lines

Three sites are located in an area where twin 69kV transmission lines are proposed, crossing Rye Creek. Site AR-03-12-06-2940 is a prehistoric structure and associated artifact scatter, and is eligible for listing on the NRHP. Site AR-03-12-06-2941 is a NRHP-eligible Hohokam Preclassic Period site with a possible pithouse depression and extensive artifact scatter that includes chipped stone tools, groundstone tools, ceramics, and lithic debitage in an area of deep alluvium. Site AR-03-12-06-2942 is a NRHP-eligible Salado Classic Period site with an extensive artifact scatter that includes chipped stone tools, groundstone tools, ceramics, and lithic debitage. This site is also located in an area of deep alluvium and has a high potential for subsurface cultural materials.

At each of these three sites, there are three sources of potential direct impacts, including the siting of transmission towers, an access road under the proposed transmission lines, and vegetation clearance within a 100-foot right-of-way along the centerline of the proposed transmission lines. Strategies to mitigate potential impacts to these sites includes siting of transmission line towers outside of site boundaries to avoid impacts to historic properties, routing of transmission line access road around site boundaries, and adherence to previously negotiated transmission line right-of-way vegetation clearance protocols. These mitigation strategies are discussed as follows.

Sites Crossed by Access Roads

Two NRHP-eligible sites are located within the APE along a proposed access road. Site AR-03-12-06-1403 is a collapsed structure and associated artifact scatter dating to the Classic Period. Site AR-03-12-06-1425 is a collapsed Classic Period structure and agricultural (rock pile) field area with an associated artifact scatter. At each of these two sites, there would be direct impacts to surface and subsurface materials at the sites through cut and fill grading to widen the proposed access roads. As a result, the Proposed Action will have an adverse effect on heritage resources under the NHPA at these sites. Impacts to these historic properties can be mitigated through implementation of a historic properties treatment plan developed in consultation with the TNF archaeologist. Preliminary consultation with the TNF archaeologist during a field visit resulted in suggested strategies to mitigate impacts to these historic properties. These are discussed under "Mitigation Measures" (below).

Sites within Substation Footprint

One NRHP-eligible site is located in the APE within the proposed substation footprint. Site AR-03-12-06-2707 is a multicomponent site: the prehistoric component consists of a three-walled structure, several rock features (including rock piles, agricultural terraces, and possible roasting pits), and an associated artifact scatter with diagnostics indicating a Salado/Classic Period use. The historic component consists of a thin slab of concrete of indeterminate historic age and whose use is not apparent, a few meters from the proposed access road, as well as a chunk of concrete near a modern fence that appears to have "set" inside a paper sack (likely a discarded sack of concrete). At this site, there would be direct impacts to surface and subsurface materials through grading to level the proposed substation site. As a result, the Proposed Action will have an adverse effect on heritage resources under NHPA at this site. Impacts to this historic property can be mitigated through implementation of a historic properties treatment plan developed in consultation with the TNF archaeologist. Preliminary consultation with the TNF archaeologist during a field visit resulted in suggested strategies to mitigate impacts to this historic property. These are discussed under "Mitigation Measures" (below).

Implementation of the Proposed Action is expected to have indirect effects to historic properties in the Project area. Increased scrutiny of areas around the proposed facility by APS personnel and law enforcement officials could potentially deter illegal collecting and looting of historic properties in the area.

Mitigation Measures

Implementation of the Proposed Action and its associated facilities (access roads, and the 69kV transmission line) could have a direct impact on historic properties. At site AR-03-12-06-1403, widening of the existing access road for substation construction and access within a 30-foot corridor would directly impact the northwest corner of the collapsed structure at the site along the south side of the access road right-of-way. Preliminary consultation with the TNF archaeologist indicates that mitigation of impacts to this site should consist of detailed mapping of features at the site, limited subsurface testing outside of the structure and inside the access road right-of-way, and excavation of 1–2 square meters of deposits in the corner of the structure nearest the access road right-of-way.

At site AR-03-12-06-1425, widening of the existing access road for substation construction and access within a 30-foot corridor would directly impact the northwest corner of the collapsed structure at the site along the south side of the access road right-of-way. To the north of the access road right-of-way are prehistoric rock pile features that are likely elements of a prehistoric agricultural field system. Shifting of the access road right-of-way to avoid impacts to the surface structure is not recommended as it would result in direct impacts to rock pile features. Preliminary consultation with the TNF archaeologist indicates that mitigation of impacts to this site should consist of detailed mapping of features at the site, limited subsurface testing outside of the structure and inside the access road right-of-way, and excavation of 1–2 square meters of deposits in the corner of the structure nearest the access road right-of-way.

At site AR-03-12-06-2707, leveling for the proposed substation site would directly impact nearly the entire site area, including prehistoric surface artifacts, prehistoric agricultural features, and historic features. Preliminary consultation with the TNF archaeologist indicates that mitigation of impacts to this site should consist of detailed mapping of features at the site, limited subsurface testing in a cleared area near the historic concrete slab, and cross-section excavation of one or two well-preserved rock pile features to determine construction methods and function. Excavation should include recovery and submission of samples from rock pile features for paleobotanical (pollen and phytolith) analysis. In addition, radiocarbon-datable material encountered during excavation should be submitted to obtain chronometric dates.

At sites AR-03-12-06-2940, AR-03-12-06-2941, and AR-03-12-06-2942, placement of a transmission tower could directly impact surface and potential subsurface cultural materials. APS proposes to install transmission towers along the route only outside of site boundaries, and would thus avoid direct impacts to these sites. A proposed access road under the transmission lines would be routed around site boundaries where it would otherwise cross over a site, and would therefore avoid direct impacts to these three sites. Finally, vegetation clearance within the 100-foot right-of-way along the centerline of the proposed transmission lines could have a potential impact to surface and potential subsurface cultural materials at the three sites. However, a preexisting agreement between APS and the TNF specifies that in the vicinity of historic properties under transmission lines, vegetation would be cut by hand and removed without the use of machinery or vehicles, to minimize potential impacts.

Cumulative Impacts

Alternative 1 – No Action

Implementation of the No Action Alternative, along with past, present, and reasonably foreseeable actions, would not impact historic properties.

Alternative 2 – Proposed Action

Vegetation treatments, land use authorizations, and livestock grazing would continue to impact archaeological and historical resources. Growth and development of communities, including utility facilities, near the study area could affect archaeological and historical resources. Recreation and OHV use in the study area could result in intentional or unintentional disturbance to archaeological and historical resources.

AIR QUALITY

Affected Environment

The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants (ground level ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead). According to the ADEQ/EPA, the study area meets all NAAQS (EPA 2009a).

Air quality in the Project area is generally good to excellent. The existing air quality condition is a result of the relatively low population density and lack of pollution sources in the area. Air pollution in the local area is typically a result of airborne particulate matter (i.e., dust). All land involved with the Project is designated as Class II, pursuant to the provisions of the federal Prevention of Significant Deterioration program, codified at 40 CFR 51.166 and 40 CFR 52.21, along with corresponding Arizona regulation, codified at A.A.C. R18-2-406. Most areas within the United States are designated as Class II, wherein standard pollution control requirements apply. Certain areas are given special protection from air quality degradation through the use of more stringent requirements. These areas are designated as Class I areas and include some (but not necessarily all) national parks, monuments, wilderness areas, and certain tribal land (EPA 2009b).

The Class I areas nearest to the study area include the following:

- Mazatzal Wilderness (approximately 5 miles west of the study area)
- Sierra Ancha Wilderness (approximately 30 miles southeast of the study area)

Environmental Consequences

Alternative 1 – No Action

Under the No Action Alternative, the Project would not be constructed. No impacts to air quality conditions in the Project area would occur.

Alternative 2 – Proposed Action

Short-term and temporary air quality impacts would result from construction-related activities (during the 24-month construction period), including fugitive dust and exhaust emissions from construction equipment. Exhaust constituents resulting from the use of gasoline- and diesel-powered construction equipment would consist primarily of carbon monoxide, nitrogen oxide, hydrocarbons, and sulfur dioxide. The Proposed Action would not generate any air pollutants after the completion of construction activities.

Due to the short duration of construction activities, air pollutant emissions would be temporary and would be dispersed quickly. Impacts on air quality resulting from the Proposed Action would be short-term, generally limited to the construction time period, and would not exceed air quality standards. Long-term (greater than 5 years) impacts resulting from the Proposed Action are not anticipated.

Methods to control short-term pollution (i.e., fugitive dust) generated as a result of construction could include limiting the amount of traffic and vehicle speeds on dirt roads during construction and the use of water trucks. Construction equipment and vehicles used during construction would be properly maintained to minimize exhaust emissions.

Cumulative Impacts

Alternative 1 – No Action

There are no direct or indirect effects of implementing the No Action Alternative, and therefore, there are no cumulative effects from this alternative.

Alternative 2 – Proposed Action

Increased population in the region would result in increased levels of visitors to the study area, including OHV and recreation use. Such increased use would result in elevated levels of fugitive dust, as well as vehicle emissions in concentrated-use areas. Grazing would decrease vegetative cover. Vegetation management, including prescribed burns, would result in the loss of vegetation and would continue to make soils more susceptible to disturbance, which could result in fugitive dust. Maintenance activities associated with SR 87 could result in additional disturbance, which may generate fugitive dust. Additional electrical facilities required by growth and development in the study area would generate fugitive dust during construction.

NOISE

Affected Environment

Noise can be defined as unwanted or disagreeable sound. Wind, meteorological, and physiographic conditions, human habitation, vehicles, and other sources cumulatively determine the noise character of any given area.

The main cause of audible noise associated with transmission line and substation operation is corona discharge. Corona represents power loss on the transmission line and can create a humming or buzzing noise. The presence of dust particles or water on conductors would increase corona discharge. Corona formation factors depend on the surrounding environment, weather, and the electrical components themselves. The intensity of corona also depends on air pressure, electrode material, presence of water vapor, and the type of voltage.

Existing noise in the vicinity of the Project area is generally a function of wind, human activity (such as OHV use), and traffic on SR 87. Existing levels of noise in the study area are generally low. Noise from SR 87 does not contribute substantially to ambient noise levels. Land uses around the proposed substation and sub-transmission lines are predominantly forest land (including grazing).

Environmental Consequences

Alternative 1 – No Action

Under the No Action Alternative, noise resources associated with the study area would remain unchanged, and no impacts would occur as a result of this Project.

Alternative 2 – Proposed Action

Sensitive receivers near the substation include dispersed recreationalists such as hikers, hunters, and travelers on NFS roads. Impacts to noise levels would be almost entirely due to construction related activities, which would result in a short-term temporary increase in noise during daytime hours and may cause impacts to people in the immediate vicinity of the Project.

Cumulative Impacts

Alternative 1 – No Action

Implementation of the No Action Alternative, along with past, present, and reasonably foreseeable actions, would have no cumulative effects to noise within the Project area.

Alternative 2 – Proposed Action

Growth and development of nearby communities would generate noise during construction. Continued OHV use in the study area, which may increase as a result of the Proposed Action, would continue to generate vehicular noise. Maintenance of roads in the study area, including improvements associated with the Proposed Action, would generate noise.

CHAPTER 4: CONSULTATION AND COORDINATION

The preparation of this EA required communication and consultation with various federal, state, and local agencies and citizens. The public and agencies will continue to be consulted throughout the EA process. The following list summarizes the agencies contacted during the preparation of the Mazatzal Substation Project EA.

FEDERAL AGENCIES

U.S. Department of Agriculture

Tonto National Forest – Tonto Basin Ranger District

- Kelly Jardine — District Ranger
- Gary Smith — Former District Ranger
- Quentin Johnson — Recreation, Lands, and Minerals Staff
- Troy Waskey — Recreation, Lands, and Minerals Staff
- Shannon Torrance — Wildlife Biologist

Tonto National Forest – Supervisor's Office

- Becky Cross — Lands and Recreation Planner
- Patti Fenner — Botanist
- Kim Vander Hoek, RLA — Forest Landscape Architect
- Scott Wood — Forest Archaeologist
- Norm Ambos — Forest Soil Scientist
- Lynn Mason — Forest Hydrologist
- Genevieve Johnson — Forest Planner
- Robert Calamusso — Forest Fisheries Biologist

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

STATE AGENCIES

- Arizona Department of Agriculture
- Arizona Department of Environmental Quality
- ADOT
- AZGFD

LOCAL AGENCIES

- Gila County Board of Supervisors
- Gila County Community Development Department

TRIBES

- Ft. McDowell Yavapai Nation
- Yavapai-Prescott Tribe
- Tonto Apache Tribe
- Salt River Pima-Maricopa Indian Community
- The Hopi Tribe
- Yavapai-Apache Nation
- San Carlos Apache Tribe
- White Mountain Apache Tribe
- Gila River Indian Community
- Pueblo of Zuni

CHAPTER 5: LIST OF PREPARERS AND REVIEWERS

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Tonto National Forest – Tonto Basin Ranger District

- Kelly Jardine — District Ranger
- Louise Congdon — Acting District Ranger
- Troy Waskey — Recreation, Lands, and Minerals Staff
- Shannon Torrance — Wildlife Biologist

Tonto National Forest – Supervisor's Office

- Becky Cross — Lands and Recreation Planner
- Patti Fenner — Botanist
- Kim Vanderhoek, RLA — Forest Landscape Architect
- Scott Wood — Forest Archaeologist
- Norm Ambos — Forest Soil Scientist
- Lynn Mason — Forest Hydrologist
- Genevieve Johnson — Forest Planner
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ARIZONA PUBLIC SERVICE

- James Looney — Land Services Section Leader
- Barbara Heimer — Land Services Land Agent
- Brent Dezeeuw — Transmission and Distribution Construction Section Leader
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- George Parker III — Transmission Design
- Ken Kowacz — TCP Planner
- Michael Mattson — 69kV Substation Planning
- Brad Larsen — Siting

ENVIRONMENTAL PLANNING GROUP

- Paul Trenter — Project Principal
- Kevin C. Duncan — Project Manager
- Nancy Favour — Land Use, Recreation, Geology
- Robert Pape — Biological Resources
- Steve Shelley — Heritage Resources
- Steve Swanson — Heritage Resources
- Chelsa Johnson — Visual Resources

■ Mike Kirby	Soil and Water Resources
■ Matt Sauter	Soil and Water Resources
■ Emily Belts	Socioeconomic Resources, Environmental Justice, Air Quality, Noise
■ Jeff Barber	Geographic Information Systems

CHAPTER 6: REFERENCES

SOIL AND WATER RESOURCES

Arizona Department of Environmental Quality. 2008. Status of ambient surface water quality in Arizona.

Arizona Department of Water Resources. 2007. Arizona Water Atlas Volume 5: Central Highlands Planning Area.

Arizona Geological Survey. 2000. The Geologic Map of Arizona. Arizona Geological Survey Digital Geologic Map: DGM-17. http://www.azgs.state.az.us/services_azgeomap.shtml

Birkeland, P.W. 1999. *Soils and Geomorphology.* Third Edition. Oxford University Press. New York and Oxford.

Fenneman, N.M. 1931. *Physiography of Western United States.* McGraw-Hill Book Company, Inc. 534 p.

Nations, D., and E. Stump. 1981. *Geology of Arizona.* Kendall/Hunt Publishing Company 221 p.

Pedersen, E.P., and C.F. Royse. 1970. Late Cenozoic Geology of the Payson Basin, Gila County, Arizona. *Journal of the Arizona Academy of Science* 6:168-178.

Royse, C.F., M.F. Sheridan, and H.W. Peirce. 1971. Geologic Guidebook 4-Highways of Arizona: Arizona Highways 87, 88 and 188. *The Arizona Bureau of Mines Bulletin* 184:1-66.

Soil Survey Staff. 1999. Soil Taxonomy: A Basic System of Soil Classification for Making and Interpreting Soil Surveys, Second Edition. *United States Department of Agriculture-Natural Resources Conservation Service: Agriculture Handbook No. 436.*

United States Forest Service. 1985. Terrestrial Ecosystems, Soils-Climax Vegetation-Climate, Survey Report for Tonto National Forest-Northern Portion.

BIOLOGICAL RESOURCES

American Ornithologists' Union (AOU). 1998. Check-list of North American Birds. 7th Edition. American Ornithologists' Union, Washington, D.C. 829 p.

Arizona Game and Fish Department (AZGFD). 2003a. *Lasiurus blossevillii.* Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 7 p. Internet site: http://www.azgfd.gov/w_c/edits/hdms_abstracts_mammals.shtml.

_____. 2003b. *Agave delamateri.* Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 7 p. Internet site: http://www.azgfd.gov/w_c/edits/documents/Agavdela.fo.pdf.

Avian Power Line Interaction Committee (APLIC). 2006. *Suggested Practices for Avian Protection On Power Lines: The State of the Art in 2006.* Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C and Sacramento, California. 207 p.

Barbour, R.W. and W.H. Davis. 1969. Bats of America. The University of Kentucky Press. 286 p.

Brennan, T.C. and A.T. Holycross. 2006. Amphibians and Reptiles in Arizona. Arizona Game and Fish Department. Phoenix, Arizona. 150 p.

Brown, D.E. 1982. 143.1 *Semidesert Grassland.* Pp. 123-131 in D.E. Brown, Ed. Biotic Communities of the American Southwest – United States and Mexico. Desert Plants Vol. 4, Nos. 1-4.

Corman, T.E. and Wise-Gervais, Eds. 2005. *Arizona Breeding Bird Atlas.* University of New Mexico Press, Albuquerque, NM. 636 p.

Degenhardt, W.G., C.W. Painter and A.H. Price. 1996. Amphibians and Reptiles of New Mexico. University of New Mexico Press, Albuquerque, New Mexico. 431 p.

Ehrlich, P.R., D.S. Dobkin and D. Wheye. 1988. The Birder's Handbook: A Field Guide to the Natural History of North American birds. Simon & Schuster Inc., New York. 785 p.

Harvey, M.J., J.S. Altenbach and T.L. Best. 1999. Bats of the United States. Arkansas Game and Fish Commission. 64 p.

Hoffmeister, D.F. 1986. Mammals of Arizona. The University of Arizona Press, Tucson, Arizona. 602 p.

Integrated Taxonomic Information System (ITIS). 2007. Internet site: http://www.itis.gov/. Accessed numerous dates.

Lutch, D. 2000. *Tonto TES Birds* In: Tonto National Forest – Threatened, Endangered and Sensitive (TES) Species – 2000 Draft Abstracts. 80 p. Tonto National Forest internal document.

National Geographic Society (NGS). 2002. Field Guide to Birds of North America. Fourth edition. National Geographic Society, Washington, D. C. 480 p.

Rabe, M.J., M.S. Siders, C.R. Miller, and T.K. Snow, 1998. Long Foraging Distance for a Spotted Bat (Euderma Maculatum) in Northern Arizona. *Southwestern Naturalist.* Vol. 43, No. 2, pp. 266-269.

Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians. Third Edition. Houghton Mifflin Company, Boston, MA. 533 p.

Tomoff, C.S. Birds of Prescott, Arizona. 2000. Prescott College, Highlands Center for Natural History, and the Prescott Audubon Society. 12 p.

United States Department of Agriculture (USDA). 2008. Natural Resources Conservation Center. Plants Database Internet site: http://plants.usda.gov/index.html.

United States Department of Agriculture – Forest Service (TNF). 1985. *Southwestern Region – Tonto National Forest Plan.*

United States Department of the Interior – Fish and Wildlife Service (USFWS). 2010. Federal Register. 50 CFR Part 17, Vol. 75, No. 37, pp. 8601-8621. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Sonoran Desert Population of the Bald Eagle as a Threatened or Endangered Distinct Population Segment. February 25, 2010.

United States Department of the Interior – Fish and Wildlife Service (USFWS). 2005. *Federal Register* Vol. 70, No. 201. 50 CFR Part 17. Rules and Regulations Pp. 60855-60934. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Southwestern Willow Flycatcher (*Empidonax traillii extimus*). Internet site: http://frwebgate.access.gpo.gov/cgi-.

Wheeler, B.K. 2003. *Raptors of Western North America.* Princeton University Press. Princeton, New Jersey. 544 p.

LAND USE AND RECREATION RESOURCES

Cress, Debbie. 2009. Range Staff Officer, Tonto Basin Ranger District, Tonto National Forest. Personal communication June 29, 2009.

Gila County. *Gila County Comprehensive Plan.* Adopted 2003. Gila County, Arizona.

U.S. Department of Agriculture. Tonto National Forest. 1985. *Tonto National Forest Plan.* Washington, D.C.: Forest Service.

SOCIOECONOMICS

Arizona Department of Commerce. 2006. Gila County Profile, Arizona. Phoenix, Arizona.

Arizona Department of Economic Security. 2006. http://www.azcommerce.com/EconInfo/Demographics/Population+Projections. Arizona Population Projections.

U.S. Bureau of the Census. 2000. Census 2000 Summary File 3 (SF 3) – Sample Data.

ENVIRONMENTAL JUSTICE

U.S. Bureau of the Census. 2000. Census 2000 Summary File 3 (SF 3) – Sample Data.

VISUAL RESOURCES

Brown, David E. and C.H. Lowe. *Biotic Communities of the Southwest.* 1978.

N.M. Fenneman. 1931. *Physiography of the Western United States.* McGraw-Hill Book Co. New York. 1931.

U.S. Department of Agriculture (USDA). 1974. National Forest Landscape Management, Volume 2. *Handbook Number 462.*

USDA-Forest Service. *Landscape Character Types of the National Forests in Arizona and New Mexico.* U.S. Government Printing Office, Washington, D.C. 1989.

HERITAGE RESOURCES

Bilsbarrow, Matthew, and Gregory R. Woodall
1997 *The Mazatzal Rest Area Archaeological Data Recovery Project: Archaic and Salado Settlement and Subsistence Patterns along Hardt Creek, Upper Tonto Basin, Gila County, Arizona* (Revised). Archaeological Research Services, Inc., Project Report 95-14C, Tempe, Arizona.

Curtis, Ross
1989 *Cultural Resources Survey of a Proposed Rest Area Facility Parcel at the Junction of State Routes 87 and 188, Gila County, Arizona.* Archaeological Research Services, Inc, Tempe, Arizona.

Elson, Mark D. and Douglas B. Craig
1992 Introduction and Site Description. In *The Rye Creek Project: Archaeology in the Upper Tonto Basin.* Center for Desert Archaeology, Anthropological Papers No. 11. Tucson.

Ferg, Alan, and Kurt Dongoske
1980 *An Archaeological Survey Investigation of ADOT Project F-053-1(10), State Route 87, From Ord Mine Road to the Junction with State Route 188, Tonto National Forest, Gila County, Arizona.* Arizona State Museum, Cultural Resource Management Division, Tucson.

Goldstein, Beau, and Terry Coriell
2003 *A Cultural Resources Survey of State Route 87 (ADOT Prescott Maintenance District) between Mileposts 228.7 and 235.7, in the Tonto National Forest (Tonto Basin Ranger District, Crest and East Piedmont of Mazatzals and Rye Creek Geographic Study Areas), Gila County, Arizona.* Archaeological Research Services, Inc, Tempe, Arizona.

Gregory, David A.
1996 *A Prospectus for the Public Interpretation of the Rye Creek Ruin Complex, Tonto Basin Ranger District, Tonto National Forest, Gila County, Arizona.* Center for Desert Archaeology Technical Report No. 95-6.

Haury, Emil
1930 *A Report on Excavations at the Rye Creek Ruin.* National Anthropological Archives, Dept. of Anthropology, National Museum of Natural History, Smithsonian Institution, Manuscript # 3199.

Hoffman, C. Marshall
1989 Letter Report to Mr. Stanley G. Thompson Regarding State Land Application #14-98035. Tempe, Arizona: Archaeological Consulting Services, Ltd.

Johnson, Deborah Hondorf
1992 *A Preliminary Stabilization Plan for Five Sites in the Rye Creek Ruin Platform Mound Complex.* Payson Ranger District, Tonto National Forest, Gila County, Arizona. Louis Berger and Associates, Inc.

Lonardo, Cara
2010 *A Cultural Resource Survey for the Proposed Mazatzal Substation, Gila County, Arizona-Addendum A.* Environmental Planning Group, Phoenix.

Moreno, Jeryll L.
1999 *Archaeological Survey of a 4-mile Segment of the Tonto Basin-Roosevelt Lake 21 kV Transmission Line, Tonto National Forest, Payson and Tonto Basin Ranger Districts, Gila County, Arizona.* Archaeological Consulting Services, Ltd., Tempe, Arizona

Snell, Gary
1987 *An Archaeological Survey of the Black Mountain/Hardt Creek Fence, Tonto Basin Ranger District, Tonto National Forest.* On file, Tonto National Forest.

Rowe, Robert, and Steven Shelley
2009 *A Cultural Resource Survey for the Proposed Mazatzal Substation, Gila County, Arizona. EPG Cultural Resource Services Technical Paper No. 2006-6.* Environmental Planning Group, Phoenix.

Stone, Lyle
1986 *An Archaeological Survey of a Proposed Highway Realignment and Widening Project on State Route 87 Between the Junction of State Route 188 and Rye, Gila County, Arizona.* Arizona Department of Transportation Project F-053-1-411. Archaeological Research Services, Inc, Tempe, Arizona.

1990 *A Cultural Resources Survey at the Proposed Alternative Location for a Rest Area Facility at the Junction of State Routes 87 and 188, Gila County, Arizona.* Archaeological Research Services, Inc, Tempe, Arizona.

Stone, Lyle and Douglas P. Mitchell
1985 *A Cultural Resources Survey of a Proposed Aggregate Materials Source (Pit #8738) and Haul Road on Tonto National Forest Lands near Jake's Corner, ARS, Inc.* Tempe, Arizona.

Whitlock, D.
1982 Museum of Northern Arizona Site Survey Record: NA17238. Museum of Northern Arizona, Flagstaff.

Wood, Jon
1977 *An Archaeological Survey of the Arizona State Game and Fish Department Horse Pasture Drift Fence-Tonto Creek Arm of the Lake Roosevelt, Tonto Basin Ranger District, Tonto National Forest.* Manuscript on file, Tonto National Forest.

Yablon, Ronald
1982 *Archaeological Investigations Mountain Bell Payson Survey Public and Private Land. Gila County, Arizona.* Museum of Northern Arizona Department of Archaeology, Flagstaff, Arizona.

AIR QUALITY

Environmental Protection Agency (EPA). 2009a. www.epa.gov/region9/air/maps/maps_top.html. February 2009.

_____. 2009b. http://www.epa.gov/region09/air/maps/az_clss1.html. February 2009.

Appendix A: Biological Resources Reference Tables

Table A-1 Noxious Weed Species for which Suitable Habitat is Present, that Could Potentially Occur, or were Observed within the Project Area		
Scientific Name	**Common Name**	**Presence**
Achnatherum brachychaetum	Puna grass	Not observed
Acroptilon repens	Russian knapweed	Not observed
Aegilops cylindrica	Jointed goatgrass	Not observed
Alhagi pseudalhagi	Camelthorn	Not observed
Ailanthus altissima	Tree of heaven	Not observed
Arundo donax	Giant reed	Not observed
Asphodelus fistulosus	Onionweed	Not observed
Avena fatua	Wild oats	Present
Brassica nigra	Black mustard	Not observed
Brassica tournefortii	Asian mustard	Not observed
Bromus catharticus	Rescuegrass	Not observed
Bromus diandrus	Ripgut brome	Not observed
Bromus japonicus	Japanese brome	Not observed
Bromus rubens	Red brome	Present
Bromus tectorum	Downy brome	Not observed
Cardaria chalepensis	Lenspod whitetop	Not observed
Cardaria draba	Globe-podded hoary cress	Not observed
Cardaria pubescens	Hairy whitetop	Not observed
Carduus acanthoides	Plumeless thistle	Not observed
Carduus nutans	Mush thistle	Not observed
Cenchrus echinatus	Southern sandbur	Not observed
Cenchrus spinifex (incertus)	Coastal sandbur	Not observed
Centaurea biebersteinii	Spotted knapweed	Not observed
Centaurea calcitrapa	Purple starthistle	Not observed
Centaurea diffusa	Diffuse knapweed	Not observed
Centaurea iberica	Iberian starthistle	Not observed
Centaurea maculosa	Spotted knapweed	Not observed
Centaurea melitensis	Malta starthistle	Not observed
Centaurea solstitialis	Yellow starthistle	Not observed
Centaurea triumfettii (squarrosa)	Squarrose knapweed	Not observed
Chondrilla juncea	Rush skeletonweed	Not observed
Chorispora tenella	Blue mustard	Not observed
Cirsium arvense	Canada thistle	Not observed
Cirsium vulgare	Bull thistle	Not observed
Convolvulus arvensis	Field bindweed	Not observed
Cuscuta spp.	Dodder	Present
Dimorphotheca cuneata	White bietou	Not observed
Dipsacus fullonum	Common teasel	Not observed
Elaeagnus angustifolia	Russian olive	Not observed
Elymus (Elytrigia) repens	Quackgrass	Not observed

Table A-1 Noxious Weed Species for which Suitable Habitat is Present, that Could Potentially Occur, or were Observed within the Project Area		
Scientific Name	**Common Name**	**Presence**
Eragrostis curvula	Weeping lovegrass	Not observed
Eragrostis lehmanniana	Lehmann's lovegrass	Not observed
Euphorbia esula	Leafy spurge	Not observed
Euryops subcarnosus ssp. *vulgaris*	Sweet resinbush	Not observed
Halogeton glomeratus	Halogeton	Not observed
Helianthus ciliaris	Blueweed	Not observed
Hydrilla verticillata	Hydrilla	Not observed
Ipomoea ssp.	Morning glory*	Not observed
Isatis tinctoria	Dyer's woad	Not observed
Kochia scoparia	Kochia	Not observed
Leucanthemum vulgare	Oxeye daisy	Not observed
Linaria genistifolia var. *dalmatica*	Dalmatian toadflax	Not observed
Linaria vulgaris	Yellow toadflax	Not observed
Lythrum salicaria	Purple loostrife	Not observed
Medicago polymorpha	Burclover	Not observed
Melilotus officinalis	Yellow sweetclover	Not observed
Nassella trichotoma	Serrated tussock grass	Not observed
Nerium oleander	Oleander	Not observed
Oncosiphon piluliferum	Globe chamomile	Not observed
Onopordum acanthium	Scotch thistle	Not observed
Peganum harmala	African rue	Not observed
Pennisetum ciliare	Buffelgrass	Not observed
Pennisetum setaceum	Fountain grass	Not observed
Pentzia incana	Karoo bush	Not observed
Polygonum cuspidatum	Japanese knotweed	Not observed
Portulaca oleracea	Common purslane	Not observed
Potentilla recta	Sulfur cinquefoil	Not observed
Pyracantha sp.	Pyracantha	Not observed
Rhus lancea	African sumac	Not observed
Salsola kali (tragus)	Russian thistle	Present
Salvia aethiopis	Mediterranean sage	Not observed
Schismus arabicus	Arabian schismus	Not observed
Schismus barbatus	Mediterranean grass	Not observed
Senecio jacobaea	Tansy ragwort	Not observed
Sinapis arvensis	Wild mustard	Not observed
Solanum carolinense	Carolina horse-nettle	Not observed
Sonchus arvensis	Perennial sowthistle	Not observed
Striga spp.	Witchweed	Not observed
Tamarix chinensis	Five-stamen tamarisk	Not observed
Tamarix parviflora	Smallflower tamarisk	Not observed

Table A-1 Noxious Weed Species for which Suitable Habitat is Present, that Could Potentially Occur, or were Observed within the Project Area		
Scientific Name	**Common Name**	**Presence**
Tamarix ramosissima	Saltcedar	Not observed
Tribulus terrestris	Puncture vine	Not observed
Ulmus pumila	Siberian elm	Not observed
Vinca major	Periwinkle	Not observed
*All species except Mexican bush morning glory (*I. carnea*) and tree morning glory (*I. arborescens*)		

Table A-2 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
Mammals				
Macrotus californicus	California Leaf-nosed Bat	Sonoran desertscrub with caves or mines for roosts	WSC	Very low
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	Low desert habitats to mid elevations where food plants such as saguaro cacti or species of agaves are present	FE, WSC	None
Lasiurus blossevillii	Western Red Bat	Riparian or encinal habitat at various elevations	WSC	Moderate
Euderma maculatum	Spotted Bat	Roosts in crevices and caves in rocky cliffs from below sea level to pine forests	WSC	Low
Idionycteris phyllotis	Allen's Big-eared Bat	Roosts in mines, caves, and snags, generally in mid-elevation forests	FS	Low
Corynorhinus townsendii	Townsend's Big-eared Bat	Roosts in mines, caves, and occasionally in buildings	FS, WSC	Low
Canis lupis baileyi	Mexican Gray Wolf	Most habitats except low desert	FE, WSC	None
Ovis canadensis mexicana	Desert Bighorn Sheep	Steep terrain that provides escape routes from predators; near a water source and suitable forage	FS	None
Birds				
Pelecanus occidentalis californicus	California Brown Pelican	Any moderate to large open water source	FE (PD)	None
Haliaeetus leucocephalus	Bald Eagle	Riparian areas, primarily Salt and Verde River watersheds	FT (DPS), FS, WSC, MIS	Moderate
Buteogallus anthracinus	Common Black Hawk	Nests in cottonwoods in riparian areas	FS, WSC, MIS	Moderate
Buteo nitida maxima	Northern Gray Hawk	Riparian or open woodland; pastures	FS, WSC	Very low
Accipiter gentilis	Northern Goshawk	Present in coniferous, deciduous, or mixed forest at forest edges, or in open woodlands	FS, WSC, MIS	None
Falco peregrinus anatum	Peregrine Falcon	Areas with cliffs for nesting and perching near water bodies	FS, WSC	Very low
Rallus longirostris yumanensis	Yuma Clapper Rail	Tall dense vegetation associated with marshes, rivers, and lakes	FE, WSC	None
Strix occidentalis lucida	Mexican Spotted Owl	Dense forest, coniferous and hardwood; steep-walled canyons	FT, WSC	None
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	Saguaro-ironwood forests; riparian areas where large trees provide nesting cavities	WSC, FS	None
Charadrius alexandrinus nivosus	Western Snowy Plover	Beaches, sandy margins of streams or ponds, and dry mud or salt flats	FS, WSC	None
Euptilotis neoxenus	Eared Trogon	Pine or pine-oak forests; often associated with riparian corridors	FS	None

Table A-2 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
Vireo bellii	Arizona Bell's Vireo	Mesquite shrublands and riparian corridors	FS, MIS	Moderate
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	Open woodland in the presence of thick underbrush, parks, riparian woodland, and scrub	FC, WSC, FS	None
Megaceryle alcyon	Belted Kingfisher	Rivers, ponds, and lakes; needs embankments for breeding	WSC	Very low
Empidonax traillii extimus	Southwestern Willow Flycatcher	Riparian corridors with willow, cottonwood, or tamarisk	FE, FS, WSC	Moderate
Fish				
Agosia c. chrysogaster	Gila Longfin Dace	Streams with sandy or gravel bottoms below 5,000 feet elevation; from clear mountain streams down to intermittent low desert streams	FS	High
Catostomus clarki	Desert Sucker	Found in small to moderately large streams with riffles and pools	FS	High
Catostomus insignis	Sonora Sucker	Found in a variety of habitats from warm water rivers to trout streams; usually in gravelly or rocky pools of relatively deep, quiet water	FS	High
Catostomus latipinnis	Flannelmouth Sucker	Pools and deeper runs of moderate- to large-scale rapidly flowing streams and rivers	FS	None
Cyprinodon m. macularius	Desert Pupfish	Shallow water in springs, small streams, and marshes; often in areas with soft substrates and clear water	FE, WSC	None
Gila elegans	Bonytail Chub	Pools, eddies, reservoirs, generally avoiding swift water, Colorado River; last natural population of the species is in Lake Mohave	FE, WSC	None
Gila intermedia	Gila Chub	Gila chub utilize a variety of habitat types in smaller streams, springs, and marshes. Adults prefer heavily vegetated deeper pools, while juveniles occur in riffles, pools, and along undercut banks	FE, FS, WSC	Moderate
Gila nigra	Headwater Chub	Mid to head water reaches of mid-sized streams where they are associated with deep, near-shore pools adjacent to stream riffles	FC, FS	High
Gila robusta	Roundtail Chub	A resident of cool to warm water in mid-elevation streams and rivers	C, FS, WSC	Very low
Meda fulgida	Spikedace	Adults occur in flowing waters of medium depth, typically at the outflow of creeks feeding large streams. Designated critical habitat in the Verde River	FT, WSC	None
Onchorhynchus apache	Apache Trout	Cool, clear, high-elevation streams and rivers	FT	None
Onchorhynchus g. gilae	Gila Trout	Small, narrow, shallow headwater streams with cobble substrate	FT, WSC	None

Table A-2 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
Plagopterus argentissimus	Woundfin	Warm, swift flowing streams with shifting, sandy substrate.	FE, WSC	None
Poeciliopsis o. occidentalis	Gila Topminnow	Vegetated springs and margins, pools, and backwaters of creeks and small to medium rivers	FE, WSC	None
Ptychocheilus lucius	Colorado Pikeminnow	Typically present in warm waters of seasonally variable, fast-flowing rivers and streams with a high sediment load	FE, WSC	None
Rhinichthys osculus	Speckled Dace	Primarily a resident of swift moderate-sized cool streams with rocky bottoms, but also occurs in warm perennial or intermittent streams at middle to upper elevations. Also may occur in lakes and outflows of desert springs	FS	Low
Tiaroga cobitis	Loach Minnow	A bottom-dwelling species frequenting turbulent riffles of rivers and larger tributaries. They prefer swift-flowing streams with gravelly to cobbly bottoms. Designated critical habitat in the Verde River	FT, WSC	None
Xyrauchen texanus	Razorback Sucker	Eddies, backwaters, and deeper water; over sand, mud, or gravel; Colorado River (designated critical habitat), Lake Mohave, and San Juan River (designated critical habitat)	FE, WSC	None
Amphibians				
Bufo m. microscaphus	Arizona Southwestern Toad	Shallow rocky streams from Arizona Upland Desertscrub up to Petran Montane Conifer Forest	FS	Moderate
Rana chiricahuensis	Chiricahua Leopard Frog	Rocky streams with deep pools in oak and pine-oak woodlands and pine forests. Mountainous areas of southeast Arizona, southwest New Mexico, and Mexico	FT, WSC	Very Low
Rana yavapaiensis	Lowland Leopard Frog	Permanent water in creeks, springs, rivers, and stock tanks	FS, WSC	Moderate
Reptiles				
Gopherus agassizii	Sonoran Desert Tortoise	Rocky slopes, wash banks, creosote bush desert	FS, WSC	Low
Xantusia vigilis arizonae	Arizona Night Lizard	A primarily diurnal and crepuscular lizard that is typically found beneath surface debris such as clumps of agaves, prickly pears, or large columnar cacti, or in crevices or beneath rocks	FS	Low
Phyllorhynchus browni lucidus	Maricopa Leafnose Snake	Alluvial soils of bajadas in desertscrub habitat	FS	None
Thamnophis eques megalops	Mexican Garter Snake	Generally found in pine-oak or piñon-juniper elevations; associated with permanent water sources	FS, WSC	Moderate
Thamnophis rufipunctatus	Narrow-headed Garter Snake	A highly aquatic-dependent species of rocky lakeshores and clear rocky streams. Occurs from piñon-juniper up to ponderosa elevations	FS, WSC	Very low

Table A-2 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
Heloderma suspectum	Gila Monster	Primarily in succulent desert with shrubs or grasses, but does get up into oaks	FS	Moderate
Mollusks				
Pyrgulopsis simplex	Fossil Springsnail	Springs along perennial portion of Fossil Creek	FS	None
Insects				
Ophiogomphus arizonicus	Arizona Snaketail	Mountain streams with strong riffles and cobble substrate	FS	Moderate
Libelula nodisticta	Hoary Skimmer	Ponds, lakes, and small streams	FS	Low
Cicindela hirticollis corpuscula	Hairy-necked Tiger Beetle	Typically associated with shores of ponds, lakes, or streams	FS	Moderate
Cicindela oregona maricopa	Maricopa Tiger Beetle	Found on open sand or mud flats and stone terraces along streams, as well as near temporary and permanent ponds and occasionally in open soil some distance from water	FS	Moderate
Cicindela praetextata pallidofemora	Tiger Beetle	Riparian mudflats	FS	Very low
Cicindela purpurea cimarrona	Cow Path Tiger Beetle	Trails and open areas with patchy vegetation at middle to high elevations. Primarily on volcanic substrates in Arizona	FS	Very low
Cylloepus parkeri	Parker's Riffle Beetle	Small streams with loose gravelly substrate. Known only from Roundtree Canyon in Bloody Basin in the Verde River drainage north of Horseshoe Reservoir	FS	Very low
Limenitis archippus obsoleta	Obsolete Viceroy	Riparian habitats with *Salix* spp. among desert grassland or scrub	FS	Low
Callophrys sheridani comstocki	Comstock's Hairstreak	Occur in areas where caterpillar host plants (*Eriogonum* spp.) are present in piñon-juniper or desert canyon habitats	FS	Low
Lycaena ferrisi	Arizona Copper	Meadows and dry rocky arroyos	FS	Low
Piruna polingii	Spotted Skipperling	Openings in moist woodlands, meadows, and mountain streamsides	FS	None
Agathon arizonicus	Netwing Midge	Rapidly flowing mountain streams or waterfall areas; usually at middle elevations in piñon-juniper woodland or higher	FS	None
Agathymus evansi	Evansi Brigadier	Mixed pine-oak-juniper woodland in association with *Agave* spp.	FS	Very low
Agathymus neumoegeni	Neumogen's Giant Skipper	Deserts to open mixed woodland-conifer forest where host plant *Agave parryi* occurs	FS	None
Plants				
Agave delamateri	Tonto Basin agave	On open hilly slopes associated with drainages; Tonto Basin to Verde River area. Population remnants of Hohokam and Salado cultures	FS, HS	Moderate

Table A-2 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
Agave murpheyi	Hohokam agave	Open, hilly slopes or alluvial terraces in desertscrub habitat; usually in close proximity to major drainage systems	FS	Moderate
Carex chihuahuaensis	Chihuahua sedge	Wet soils of cienegas, streambeds, meadows	FS	Low
Carex ultra	Arizona giant sedge	Moist soils associated with springs and stream. Known in Yavapai County only from a single occurrence each in the Mazatzal and Hieroglyphic mountains	FS	Low
Cimicifuga arizonica	Arizona bugbane	Canyon bottoms, seeps, and springs in ecotone between coniferous forest and riparian habitat at mid to high elevations	CA, FS	None
Cirsium parryi ssp. mogollonicum	Mogollon thistle	Moist soils in shaded understory of perennial streams	FS	None
Echinocereus triglochidiatus var. *arizonicus*	Arizona hedgehog cactus	Rocky, steep-walled canyons, slopes, and boulder piles at mid elevations in Arizona Desert grassland habitat	FE	None
Erigeron anchana	Mogollon fleabane	Rock ledges or crevices in canyons from chaparral to pine forest elevations	FS	Low
Erigeron piscaticus	Fish Creek fleabane	Moist canyon bottoms or canyon walls below 3,500 feet	FS	None
Eriogonum ripleyi	Ripley wild buckwheat	Restricted to tertiary lakebeds on well-drained powdery soils derived from limestone, sandstone, or volcanic tuffs and ashes. Occurs from 2,000 to 6,000 feet in elevation	FS	None
Heuchera eastwoodiae	Eastwood alum root	Shaded canyons between 5,000 and 6,000 feet in elevation	FS	None
Heuchera glomerulata	Arizona alum root	Rich soils of shaded outcrops near streams or seeps at mid to high elevations	FS	None
Lotus alamosanus	Alamos deer vetch	Moist soil near streams	FS	Very low
Mabrya acerifolia	Mapleleaf false snapdragon	Shaded cliffs, rock overhangs, and ledges to 3,350 feet	FS	None
Osmorhiza brachypoda	Sweet cicely	Riparian, moist woodland and coniferous forest habitats	FS	None
Penstemon nudiflorus	Flagstaff beardtongue	Dry slopes of ponderosa pine forest from 4,500 to 7,000 feet elevation	FS	None
Perityle gilensis var. *gilensis*	Gila rock daisy	Steep rocky slopes and rocky ledges in the Salt River drainage	FS	None
Perityle gilensis var. *salensis*	Gila rock daisy	Steep rocky slopes and rocky ledges in the Salt River drainage	FS	None
Perityle saxicola	Fish Creek rock daisy	Very xeric habits on steep slopes or cliff faces of canyons or buttes	FS	Very low
Phlox amabilis	Arizona phlox	Exposed rocky slopes on limestone or volcanic substrates in piñon-juniper or ponderosa pine–Gambel oak communities	FS	None

Table A-2 Special Status Species with a Known Presence in the Tonto National Forest				
Scientific Name	**Common Name**	**Habitat**	**Status**	**Potential***
Purshia subintegra	Arizona cliffrose	Occurs on Tertiary limestone lake bed deposits of the Verde Valley Formation in Sonoran desertscrub habitat to 4,000 feet	FE	None
Rumex orthoneurus	Blumer's Dock	Mid to high elevation wetlands with moist organic soil; streams, springs, and meadows	FS	None
Salvia amissa	Aravaipa sage	Upper floodplain terraces near permanent streams; often in understory of mature riparian trees	FS	Very low

*Potential for presence in the Project area
Status key: FE – Federally listed under the ESA as an endangered species
FT – Federally listed under the ESA as a threatened species
FC – Candidate species proposed for federal listing under the ESA as threatened or endangered
CA – Conservation Agreement
DPS – Distinct Population Segment
PD – Proposed for De-listing
FS – United States Forest Service sensitive species (other than ESA-listed)
MIS – Tonto National Forest Management Indicator Species
WSC – State of Arizona – Arizona Game and Fish Department Wildlife Species of Special Concern

Table A-3 Determinations for Effects of the Project on Federally Listed (ESA) Proposed, or Candidate Species Occurring in the Project Area			
Scientific Name	**Common Name**	**Status**	**Determination**
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	FE	No effect
Canis lupis baileyi	Mexican Gray Wolf	FE	No effect
Pelecanus occidentalis californicus	California Brown Pelican	FE	No effect
Haliaeetus leucocephalus	Bald Eagle	FT (DPS)	May affect, unlikely to adversely affect
Rallus longirostris yumanensis	Yuma Clapper Rail	FE	No effect
Strix occidentalis lucida	Mexican Spotted Owl	FT	No effect
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	FC	No effect
Empidonax traillii extimus	Southwestern Willow Flycatcher	FE	May affect, unlikely to adversely affect
Cyprinodon m. macularius	Desert Pupfish	FE	No effect
Gila elegans	Bonytail Chub	FE	No effect
Gila intermedia	Gila Chub	FE	May affect, unlikely to adversely affect
Gila nigra	Headwater Chub	FC	May affect, unlikely to adversely affect
Meda fulgida	Spikedace	FT	No effect
Onchorhynchus apache	Apache Trout	FT	No effect
Onchorhynchus g. gilae	Gila Trout	FT	No effect
Plagopterus argentissimus	Woundfin	FE	No effect
Poeciliopsis o. occidentalis	Gila Topminnow	FE	No effect
Ptychocheilus lucius	Colorado Pikeminnow	FE	No effect
Tiaroga cobitis	Loach Minnow	FT	No effect
Xyrauchen texanus	Razorback Sucker	FE	No effect
Cimicifuga arizonica	Arizona bugbane	FC	No effect
Purshia subintegra	Arizona cliffrose	FE	No effect

Table A-4 Plant Species Observed on the Project Site on July 31, 2008	
Scientific Name	**Common Name**
Acacia greggii	Catclaw acacia
Acourtia wrightii	Brownfoot
Agave chrysantha	Goldenflower century plant
Allionia incarnata	Trailing windmills
Allium sp.	Onion
Ambrosia sp.	Ragweed
Amsinckia sp.	Fiddleneck
Aristida sp.	Threeawn
Atriplex polycarpa	Cattle saltbush
Avena fatua	Wild oat
Baccharis salicifolia	Mule-fat
Baileya multiradiata	Desert marigold
Berberis haematocarpa	Red barberry
Bouteloua curtipendula	Sideoats grama
Bromus rubens	Red brome
Calliandra eriophylla	Fairyduster
Calochortus sp.	Mariposa lily
Celtis ehrenbergiana	Spiny hackberry
Celtis laevigata	Netleaf hackberry
Chamaesyce sp.	Sandmat
Cheilanthes sp.	Lipfern
Chilopsis linearis	Desert willow
Cirsium sp.	Thistle
Croton sp.	Croton
Cuscuta sp.	Dodder
Cylindropuntia acanthocarpa	Buck-horn cholla
Cylindropuntia leptocaulis	Christmas cactus
Cylindropuntia spinosior	Walkingstick cactus
Cynodon dactylon	Bermudagrass
Dasylirion wheeleri	Common sotol
Datura wrightii	Sacred thorn-apple
Descurainia sp.	Tansymustard
Echinocereus f. fasciculata	Pinkflower hedgehog cactus
Eriastrum sp.	Woollystar
Ericameria laricifolia	Turpentine bush
Eriogonum fasciculatum	Eastern Mojave buckwheat
Eriogonum sp.	Buckwheat
Ferocactus wislizeni	Candy barrel cactus
Fraxinus lowellii	Singleleaf ash
Funastrum cynanchoides	Fringed twinevine
Gaura coccinea	Scarlet beeblossom

Table A-4 Plant Species Observed on the Project Site on July 31, 2008	
Scientific Name	**Common Name**
Gutierrezia sarothrae	Broom snakeweed
Hymenoclea monogyra	Singlewhorl burrobrush
Juniperus monosperma	Oneseed juniper
Krameria erecta	Littleleaf ratany
Lycium sp.	Desert-thorn
Machaeranthera sp. *1*	Tansyaster
Machaeranthera sp. *2*	Tansyaster
Marrubium vulgare	Horehound
Melampodium leucanthum	Plains blackfoot
Menodora scabra	Rough menodora
Mentzelia sp.	Blazingstar
Mimosa aculeaticarpa	Catclaw mimosa
Nolina microcarpa	Sacahuista
Opuntia engelmannii	Cactus apple
Opuntia phaeacantha	Tulip pricklypear
Parkinsonia florida	Blue paloverde
Plantago sp.	Plantain
Platanus wrightii	Arizona sycamore
Pleuraphis mutica	Tobosagrass
Polanisia dodecandra	Redwhisker clammyweed
Populus fremontii	Fremont cottonwood
Prosopis velutina	Velvet mesquite
Quercus turbinella	Sonoran scrub oak
Rhus trilobata	Skunkbush sumac
Rumex sp.	Dock
Salsola kali	Russian thistle
Senna bauhinioides	Twinleaf senna
Sphaeralcea sp.	Globemallow
Stephanomeria minor	Narrowleaf wirelettuce
Verbena sp.	Vervain
Ziziphus obtusifolia	Lotebush

Table A-5 Species of Mammals that Could be Present within the Project Area for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Desert Shrew	*Notiosorex crawfordi*	Any area with ample ground cover, including plant debris, trash, and lumber
California Leaf-nosed Bat	*Macrotus californicus*	Inhabits lowland desertscrub where it commonly uses abandoned mine tunnels for roosts. Also will roost in rock shelters and man-made structures such as buildings and bridges
Yuma Myotis	*Myotis yumanensis*	Found in a variety of habitats generally below 6,890 feet, and almost always associated with some kind of open water source; typically rivers or streams. Roosts in crevices, cliffs, bridges, and buildings
Cave Myotis	*Myotis velifer*	Roosts primarily in mines or caves in xeric habitats such as creosote bush or paloverde mixed scrub plant associations. Requires a permanent water source within a few miles of roost
California Myotis	*Myotis californicus*	Sonoran desertscrub, and up to oak elevations with caves or mines present
Small-footed Myotis	*Myotis leibii*	Utilizes a variety of roost types, usually above 3,500 feet
Western Pipistrelle	*Pipistrellus hesperus*	Found in areas with canyon walls or cliff faces for roosting, and streambeds or tanks for foraging
Big Brown Bat	*Eptesicus fuscus*	Wooded areas, desertscrub
Red Bat	*Lasiurus borealis*	Roosts in foliage of large shrubs and trees, primarily in riparian areas with cottonwood, sycamore, walnut or oak trees present
Hoary Bat	*Lasiurus cinereus*	Forests with medium to large size trees and dense foliage during the breeding season; during migration, males are found in foothills, deserts and mountains; females in lowlands. Hoary bats have been recorded from sea level to 13,200 feet
Spotted Bat	*Euderma maculatum*	Typically found in higher elevation habitats such as pine forest. Roosts in crevices in cliff faces, often in harsh, rocky desert.
Townsend's Big-eared Bat	*Plecotus townsendii*	Roosts in mines, caves, or structures from low desert up into pines.
Pallid Bat	*Antrozous pallidus*	Desertscrub with caves, mines, cliffs, bridges, or other structures for roosts
Brazilian Free-tailed Bat	*Tadarida brasiliensis*	Desertscrub and foothills with mines, caves, bridges, or old buildings
Desert Cottontail	*Sylvilagus audubonii*	Desertscrub or semidesert grassland
Black-tailed Jack Rabbit	*Lepus californicus*	Desertscrub or other areas with open ground cover
Harris' Antelope Squirrel	*Ammospermophilus harrisii*	Areas of rocky slopes or soil of low deserts
Rock Squirrel	*Spermophilus variegatus*	Rocky canyons and boulder-strewn slopes
Botta's Pocket Gopher	*Thomomys bottae*	Wide variety of habitats, any area with soil suitable for digging burrows
Rock Pocket Mouse	*Perognathus intermedius*	Rocky desertscrub habitats

Table A-5 Species of Mammals that Could be Present within the Project Area for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Ord's Kangaroo Rat	*Dipodomys ordii*	A variety of habitats at or below juniper-piñon elevation
Plains Harvest Mouse	*Reithrodontomys montanus*	Found in dry habitats of desertscrub or chaparral, usually in the presence of mesquite or creosote bush with some grass species
Western Harvest Mouse	*Reithrodontomys megalotis aztecus*	Wide variety of habitats, including desertscrub and semidesert grassland. Require adequate cover, preferably grasses
Cactus Mouse	*Peromyscus eremicus*	Found among cactus or in rocky areas from low desert up into chaparral where they will use animal burrows, wood rat houses, and man-made structures
Deer Mouse	*Peromyscus maniculatus*	Coniferous or riparian woodland, desertscrub; often adjacent to canals or along intermittent creeks
White-footed Mouse	*Peromyscus leucopus arizonae*	A variety of habitats, typically in thick grasses or other dense vegetation
Brush Mouse	*Peromyscus boylii*	In a wide variety of situations; usually associated with dense brush
Northern Grasshopper Mouse	*Onychomys leucogaster*	Sparsely vegetated plains and desert grassland habitats in areas of friable soils
Southern Grasshopper Mouse	*Onychomys torridus*	Desertscrub to desert grassland habitats
White-throated Woodrat	*Neotoma albigula*	Most habitats below, and including the piñon-juniper. Areas with rocky outcrops that provide incipient midden structure have higher densities of woodrats. Common in areas with abundant cholla or prickly pear cacti
Coyote	*Canis latrans*	Cosmopolitan, low desert to spruce forest
Gray Fox	*Urocyon cinereoargenteus*	Open desertscrub, chaparral, or lower elevation woodland, occasionally in ponderosa pine or Douglas fir
Raccoon	*Procyon lotor*	Riparian or wetland habitats
Ringtail	*Bassariscus astutus*	Rocky areas of canyons and mountains where they shelter in cliffs, rocks, caves, or mines. Man-made structures are also utilized
Badger	*Taxidea taxus berlandieri*	Flats and drainages adjacent to mountains, or in grasslands
Spotted Skunk	*Spilogale putorius*	Low and middle elevations, often in rocky areas or around human habitation
Striped Skunk	*Mephitis mephitis*	Found in vegetation thickets, animal burrows, rock piles, or crevices. Man-made structures are often utilized. They are almost always associated with a permanent water source
Mountain Lion	*Puma concolor*	Usually in mountainous, forested areas, but also in desertscrub and semidesert grassland
Bobcat	*Lynx rufus*	Rocky upland areas interspersed with open desert, grassland, or woodland
Javelina	*Pecari tajacu*	Desertscrub up into low oak elevation
Mule Deer	*Odocoileus hemionus*	Upland desert, chaparral, oak woodland, or pine forest
Sources: Barbour and Davis 1969; Harvey et al. (1999); Hoffmeister (1986); ITIS (2007)		

Table A-6 Species of Birds that Could be Present within the Project Area for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Black-crowned Night Heron	*Nycticorax nycticorax*	Marshes, lakes, ponds, and riparian areas
Green Heron	*Butorides virescens*	Streams, ponds, and marshes with woodland cover
Great Blue Heron	*Ardea herodias*	Rivers, streams, lakes, and reservoirs
Mallard	*Anas platyrhynchos*	Shallow ponds, lakes, marshes
Green-winged Teal	*Anas crecca*	Lakes, marshes, ponds, or shallow streams
Cinnamon Teal	*Anas cyanoptera*	Shallow lake margins, playas, ponds, marshes, and slow-flowing streams
Common Merganser	*Mergus merganser*	Lakes and rivers in forested areas
Turkey Vulture	*Cathartes aura*	Open country, agricultural areas
Northern Harrier	*Circus cyaneus*	Open fields in winter
Golden Eagle	*Aquila chrysaetos*	Mountainous areas, also grasslands
Cooper's Hawk	*Accipiter cooperi*	Broken woodlands or streamside groves
Common Black Hawk	*Buteogallus anthracinus*	Gallery forest habitats with tall trees, usually along shallow permanent streams and rivers with clear water
Zone-tailed Hawk	*Buteo albonotatus*	Open remote areas of canyons, dry washes, rivers and creeks that support mature broad-leaved trees
Red-tailed Hawk	*Buteo jamaicensis*	Plains, prairie groves, desert
Swainson's Hawk	*Buteo swainsoni*	Prairie, desert, open woodlands
Ferruginous Hawk	*Buteo regalis*	Open arid country, prairies, and badlands
American Kestrel	*Falco sparverius*	Open country, cities
Prairie Falcon	*Falco mexicanus*	Dry open country
Peregrine Falcon	*Falco peregrinus*	Open habitats in rugged country, usually near lakes, rivers, or streams and with rocky outcrops or cliffs nearby
Gambel's Quail	*Callipepla gambelii*	Desert scrublands and thickets, often near water
Killdeer	*Charadrius vociferous*	Bare areas of fields, pastures, and shores of ponds and streams
Mourning Dove	*Zenaida macroura*	Wide variety of habitats
White-winged Dove	*Zenaida asiatica*	Saguaro-paloverde desert, riparian areas, mesquite stands
Greater Roadrunner	*Geococcyx californianus*	Desert scrub, chaparral, and arid open habitats with scattered brush
Barn Owl	*Tyto alba*	Open desert, grasslands, and farmlands Nests in dark cavities in cliffs, trees, mines, or embankments
Great Horned Owl	*Bubo virginianus*	Common in wide variety of habitats
Western Screech-owl	*Otus kennicottii*	Woodlands, including riparian
Lesser Nighthawk	*Chordeiles acutipennis*	Dry, open country; scrubland and desert
Whip-poor-will	*Caprimulgus vociferus*	Wooded canyons
Common Poorwill	*Phalaenoptilus nuttallii*	Rocky and gravelly terrain in broken scrubland or chaparral, and openings in woodlands
Black-chinned Hummingbird	*Archilochus alexandri*	Lowlands and low mountains

Table A-6 Species of Birds that Could be Present within the Project Area for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Costa's Hummingbird	*Calypte costae*	Desert washes and dry chaparral
Anna's Hummingbird	*Calypte anna*	Open woodland, chaparral, or scrublands
Belted Kingfisher	*Ceryle alcyon*	Along watercourses
Northern Flicker	*Colaptes auratus*	Open woodlands, lowlands in winter
Ladder-backed Woodpecker	*Picoides scalaris*	Arid lowland or montane scrub, pine-oak and gallery forest habitats
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	Riparian corridors with willow, cottonwood, or tamarisk
Black Phoebe	*Sayornis nigricans*	Woodlands along streams or ponds
Say's Phoebe	*Sayornis saya*	Dry, open areas; canyons, cliffs
Vermillion Flycatcher	*Pyrocephalus rubinus*	Shrubbery along streams and lowlands
Brown-crested Flycatcher	*Myiarchus tyrannulus*	Saguaro desert and wooded areas along streams
Ash-throated Flycatcher	*Myiarchus cinerascens*	Desertscrub, piñon-juniper, oak woodland, chaparral, and riparian habitats
Cassin's Kingbird	*Tyrannus vociferans*	Scrub, piñon-juniper-oak woodland, and riparian habitats
Western Kingbird	*Tyrannus verticalis*	Dry, open lowlands
Loggerhead Shrike	*Lanius ludovicianus*	Open or brushy areas
Bell's Vireo	*Vireo bellii*	Mesquite shrublands and riparian corridors
Gray Vireo	*Vireo vicinior*	Undergrowth of dry habitats
Common Raven	*Corvus corax*	Mountains, deserts
Horned Lark	*Eremophila alpestris*	Dirt fields, gravel ridges, grasslands
Violet-green Swallow	*Tachycineta thalassina*	Primarily a highland species of coniferous or deciduous forests
Cliff Swallow	*Petrochelidon pyrrhonota*	Near lakesides, streams, ponds, cliffs, and canals Nest on buildings, under nearby bridges, and other overhangs
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Open areas, especially near banks of streams and canals, ponds, and lakes
Verdin	*Auriparus flaviceps*	Dense desert shrubbery, mesquite, and palo verde
Bushtit	*Psaltriparus minimus*	Piñon-juniper and pine-oak woodland and scrub
House Wren	*Troglodytes aedon*	Thickets and scrub of open woodland, rural areas and urban parks
Bewick's Wren	*Thryomanes bewickii*	Brushy slopes, piñon-juniper, live-oak, and mesquite associations
Rock Wren	*Salpinctes obsoletus*	Arid and semiarid habitats
Canyon Wren	*Catherpes mexicanus*	Canyons and cliffs, often near water
Blue-gray Gnatcatcher	*Polioptila caerulea*	Thickets, woodlands, and chaparral
Black-tailed Gnatcatcher	*Polioptila melanura*	Desert washes
Western Bluebird	*Sialia mexicana*	Open pine, deciduous and mixed woodland, and riparian woodland
Northern Mockingbird	*Mimus polyglottos*	Variety of habitats up to oak-juniper zone
Bendire's Thrasher	*Toxostoma bendirei*	Sonoran desertscrub and brushy grasslands

Table A-6 Species of Birds that Could be Present within the Project Area for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Curve-billed Thrasher	*Toxostoma curvirostre*	Canyons and semi-arid brushlands
Crissal Thrasher	*Toxostoma crissale*	Mesquite and willows along streams and washes
Phainopepla	*Phainopepla nitens*	Desert and mesquite up into juniper and oak woodland in presence of fruiting mistletoe
Lucy's Warbler	*Vermivora luciae*	Mesquites and cottonwoods along drainages
Black-throated Gray Warbler	*Dendroica nigrescens*	Woodlands, brushlands, and chaparral
Yellow Warbler	*Dendroica petechia*	Cottonwood and willow riparian habitat
Wilson's Warbler	*Wilsonia pusilla*	Thickets along drainages
Common Yellowthroat	*Geothlypis trichas*	Grassy fields and thick, shrubby vegetation along riparian corridors
Yellow-breasted Chat	*Icteria virens*	Riparian deciduous woodland or riparian scrub
Summer Tanager	*Piranga rubra*	Among cottonwoods and willows in riparian areas
Western Tanager	*Piranga ludoviciana*	Coniferous or mixed coniferous-deciduous woodlands
Canyon Towhee	*Pipilo fuscus*	Arid hills and desert canyons
Abert's Towhee	*Pipilo aberti*	Desert woodlands and thickets along streams
Spotted Towhee	*Pipilo maculatus*	Chaparral, oak woodland, lowlands in winter
Rufous-crowned Sparrow	*Aimophila ruficeps*	Arid and hilly terrain, usually on rocky and grassy or brushy slopes
Lark Sparrow	*Chondestes grammacus*	Open habitats with scattered bushes and trees
Black-chinned Sparrow	*Spizella atrogularis*	Chaparral, arid scrub, and brushy hillsides
Black-throated Sparrow	*Amphispiza bilineata*	Rocky slopes in desert habitats
Song Sparrow	*Melospiza melodia*	Brush, particularly associated with drainages
White-crowned Sparrow	*Zonotrichia leucophrys*	Grasslands
Black-headed Grosbeak	*Pheucticus melanocephalus*	Piñon-juniper, pine-oak, or cottonwood riparian woodland Migrant
Northern Cardinal	*Cardinalis cardinalis*	Along riparian habitats
Blue Grosbeak	*Passerina caerulea*	Brush along streamsides
Eastern Meadowlark	*Sturnella magna*	Grasslands and open fields; migrant
Western Meadowlark	*Sturnella neglecta*	Grasslands and cultivated fields
Hooded Oriole	*Icterus cucullatus*	Deciduous trees along riparian corridors
Bullock's Oriole	*Icterus bullockii*	Broad-leafed riparian habitat
Scott's Oriole	*Icterus parisorum*	Arid and semiarid habitats
House Finch	*Carpodacus mexicanus*	Arid scrub and brush, oak-juniper and pine-oak habitats, and in cultivated and urban areas
Lesser Goldfinch	*Carduelis psaltria*	Open areas with scattered trees, second growth, and around human habitations
Sources: AOU (1998); Corman and Wise-Gervais 2005; Ehrlich et al. (1988); NGS (2002); Tomoff (2000); Wheeler (2003)		

Table A-7 Species of Amphibians and Reptiles that Could be Present within the Project Area for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Tiger Salamander	*Ambystoma tigrinum*	Temporary rain pools, stock ponds, rocky crevices, and associated karst features where standing water is available for breeding
Mexican Spadefoot	*Spea multiplicata*	Desert grasslands up into piñon-juniper elevations, usually in sandy or gravelly soils
Red-spotted Toad	*Bufo punctatus*	Desert streams and oases, open grassland and scrubland, oak woodland, rocky canyons and arroyos, in crevices among rocks for shelter, breeds in rain pools, reservoirs, and temporary pools of intermittent streams
Arizona Toad	*Bufo microscaphus*	Shallow streams from Arizona Upland Sonoran Desertscrub up into Petran Montane Conifer Forest
Woodhouse's Toad	*Bufo woodhousii*	Sandy soils near a permanent or semi-permanent water source from desertscrub up into woodland habitats
Great Plains Toad	*Bufo cognatus*	Inhabits prairies or deserts, often breeding after heavy rains in summer in shallow temporary pools or quiet water of streams, marshes, irrigation ditches, and flooded fields; also frequents creosote bush desert, mesquite woodland, and sagebrush plains
Sonoran Desert Toad	*Bufo alvarius*	Desertscrub, Semidesert Grassland, and Madrean Evergreen Woodland habitats
Canyon Treefrog	*Hyla arenicolor*	Springs, streams, or rivers from Arizona Upland Desertscrub up to Petran Montane Conifer Forest
Lowland Leopard Frog	*Rana yavapaiensis*	A variety of aquatic habitats including streams and ponds; often associated with cottonwood and willow riparian corridors
American Bullfrog	*Rana catesbeiana*	Occurs from Lower Colorado River Desertscrub up to Petran Montane Conifer Forest; prefers deep and calm waters
Sonora Mud Turtle	*Kinosternon sonoriense*	Rocky streams and rivers, tanks, and ponds from Lower Colorado River Desertscrub up to Petran Montane Conifer Forest
Eastern Collared Lizard	*Crotaphytus collaris*	A rock-dwelling species of canyons, rocky arroyos, limestone ledges from desert scrub up into piñon-juniper elevations
Long-nosed Leopard Lizard	*Gambelia wislizenii*	Arid plains with bunchgrass or scattered shrubby vegetation
Greater Earless Lizard	*Cophosaurus texanus*	Bajadas and hillsides in desertscrub and semidesert grassland habitats
Common Lesser Earless Lizard	*Holbrookia maculata*	Exposed patches of sand or gravel along washes, and in mesquite, short-grass prairie and piñon-juniper woodland
Ornate Tree Lizard	*Urosaurus ornatus*	Generally found where trees are present, but may occur in treeless areas, from low desert up to spruce-fir elevations
Side-blotched Lizard	*Uta stansburiana*	Primarily a ground dwelling lizard found in almost any habitat or soil type
Plateau Lizard	*Sceloporus tristichus*	Grassy plains and shrubby foothills
Desert Spiny Lizard	*Sceloporus magister*	Arid or semi-arid habitats from creosote desert up into piñon-juniper elevations, including riparian habitats
Clark's Spiny Lizard	*Sceloporus clarkii*	Found from desertscrub to Madrean Evergreen Woodland habitats
Greater Short-horned Lizard	*Phrynosoma hernandesi*	Occurs from semi-arid plains up to spruce-fir elevations on a variety of soil types, but usually with loose soils being present

Table A-7 Species of Amphibians and Reptiles that Could be Present within the Project Area for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Gila Spotted Whiptail	*Cnemidophorus flagellicaudus*	Found in brushy areas in desert grassland and chaparral up to piñon-juniper or oak woodland habitats
Desert Grassland Whiptail	*Cnemidophorus uniparens*	Normally a species of desert or mesquite grassland, but will get up into coniferous forest along drainages
Tiger Whiptail	*Cnemidophorus tigris*	Desertscrub, semidesert grassland, and Interior Chaparral habitats
Great Plains Skink	*Eumeces obsoletus*	Generally found on fine-grained loose soils in areas of grasses and low shrubby growth, particularly along arroyos Occurs from grassland elevations up into mountain elevations
Madrean Alligator Lizard	*Elgaria kingii*	Foothills and Steep Mountain Slopes from semidesert grassland up into Petran Montane Conifer Forest
Western Banded Gecko	*Coleonyx variegatus*	Occurs in a wide variety of arid habitats from dune areas to rocky hillsides in desertscrub habitat
Gila Monster	*Heloderma suspectum*	Usually inhabits rocky bajadas, washes, and hillsides in desertscrub or semidesert grassland habitats
Western Threadsnake	*Leptotyphlops humilis*	A nocturnally active snake that lives mostly underground, usually in desertscrub or semidesert grassland habitats
Sonoran Coralsnake	*Micruroides euryxanthus*	Occurs from Sonoran desertscrub to semidesert grassland habitats
Groundsnake	*Sonora semiannulata*	Primarily a snake of Arizona Upland Sonoran desertscrub and semidesert grassland habitats
Smith's Black-headed Snake	*Tantilla hobartsmithi*	Arizona Upland Desertscrub to Great Basin Conifer Woodland habitats
Ring-necked Snake	*Diadophis punctatus*	Generally associated with springs or watercourses, but may occur in more arid habitat among rocks
Night Snake	*Hypsiglena torquata*	Wide range of habitats, including deserts, grassland, chaparral, woodlands, and mountain meadows
Western Lyresnake	*Trimorphodon biscutatus*	Canyons and rocky foothills of Arizona Upland Desertscrub habitat
Gopher Snake	*Pituophis catenifer*	Open areas in a variety of habitats, including desertscrub, grassland, chaparral, woodlands, and coniferous forest
Western Patch-nosed Snake	*Salvadora hexalepis*	From desertscrub up to piñon-juniper elevations; sandy or rocky, often dry habitats
Sonoran Whipsnake	*Masticophis bilineatus*	Rocky streams from low desert up into pine-oak elevation
Striped Whipsnake	*Masticophis taeniatus*	In both lowlands and mountains on flats and in canyons, in areas with grasses or shrubs
Coachwhip	*Masticophis flagellum*	Sparsely vegetated areas from low desert to juniper woodland
Long-nosed Snake	*Rhinocheilus lecontei*	Sandy soils of valleys and plains with grasses and shrubby vegetation
Common Kingsnake	*Lampropeltis getula*	Wide variety of habitats, including desert, grassland, chaparral, woodlands, and coniferous forests
Black-necked Gartersnake	*Thamnophis cyrtopsis*	Occurs from Arizona Upland Desertscrub up into lower Petran Montane Conifer Forest

Table A-7 Species of Amphibians and Reptiles that Could be Present within the Project Area for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Mexican Gartersnake	*Thamnophis eques*	Inhabits streams, rivers, and ponds with abundant shoreline vegetation from Sonoran Desertscrub up into Petran Montane Conifer Forest
Narrow-headed Gartersnake	*Thamnophis rufipunctatus*	A highly aquatic species of rocky, perennial streams and rivers from the upper portions of Arizona Upland Desertscrub up to Petran Montane Conifer Forest
Western Diamond-backed Rattlesnake	*Crotalus atrox*	Rocky outcrops, washes, or among dense vegetation, usually in dry lowland habitats, but also occurs up into open pine forest
Mohave Rattlesnake	*Crotalus scutulatus*	Primarily a species of semidesert grasslands, but also common in desertscrub habitats
Black-tailed Rattlesnake	*Crotalus molossus*	Primarily a montane species, preferring rocky cliffs in canyons or slopes with rocky cover
Source: Brennan and Holycross 2006; Degenhardt et al. (1996); Stebbins (2003)		

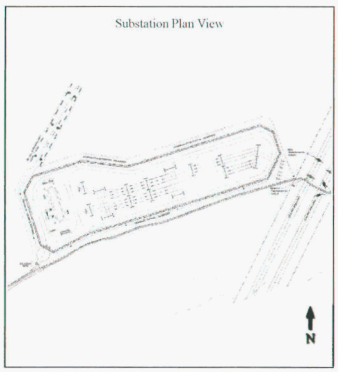
Appendix B: Visual Simulation

Existing Condition - Two single-circuit 345kV dull grey steel lattice transmission lines

Simulated Condition - Proposed 345/69/21kV substation and sub-transmission lines (galvanized structures)

Photo Location: Viewpoint located 1.5 miles south of Rye, Arizona, looking southeast toward the existing 345kV transmission lines.

Photographic Details:
Date: October 28, 2008 / Time: 1:44 pm
Focal Length: 50mm
Atmospheric Conditions: Mostly clear



DRAFT
Exhibit

Appendix C: TNF Noxious Weed Management

FOREST SERVICE MANUAL
TONTO NATIONAL FOREST
PHOENIX, ARIZONA

FSM 2000 – NATIONAL FOREST RESOURCE MANAGEMENT

CHAPTER 2080– NOXIOUS WEED MANAGEMENT

Supplement No.: 2000-2009-1.

Effective Date: April 3, 2009.

Duration: This supplement is effective until superseded or removed.

Approved: GENE BLANKENBAKER
Forest Supervisor

Date Approved: 04/03/2009

Posting Instructions: Supplements are numbered consecutively by title and calendar year. Post by document; remove the entire document and replace it with this supplement. Retain this transmittal as the first page(s) of this document. This is the first Forest supplement to this title FSM 2000.

New Document	2081.2 Prevention and Control Measures	2 Pages
Superseded Document(s) by Issuance Number and Effective Date	None	

Digest: In order by code, summarize the main additions, revisions, or removal of direction incorporated in this supplement.

2081.2 - Adds direction for seed testing for all seed to be used on the Tonto National Forest.

2081.2 Prevention and Control Measures

All seed or seed mixes to be used on the Tonto National Forest are required to be certified weed-free for those seeds listed on the Tonto weed seed list at http://www.fs.fed.us/r3/tonto/naturalResources/Invasive-Weeds/index.shtml, as well as those prohibited and restricted noxious weed species found in the USDA "State Noxious Weed Requirements Recognized in the Administration of the Federal Seed Act" publication at http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRD3317318.

The following procedure will be used:

Any seed used on the Forest must be purchased from a licensed seed dealer.

Each seed lot used alone or in a seed mix will have a certificate, signed by a Registered Seed Technologist or Seed Analyst (certified through either the Association of Official Seed Analysts or the Society of Commercial Seed Technologists), certifying that lot has been tested in accordance with the Association of Official Seed Analysts standards within 12 months prior to date of application. The certificate will include:

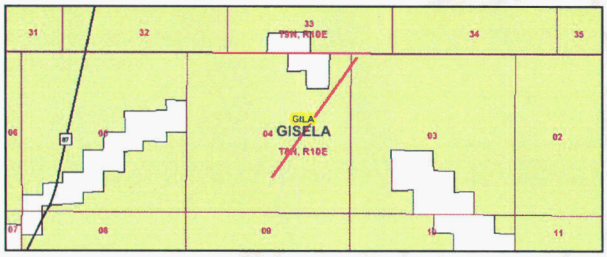
1. Name and address of laboratory
2. Date of test
3. Lot number for each kind of seed
4. Name of seed
5. Percentage of germination
6. Percentage of purity
7. Percentage of weed seed content and list of weeds identified
8. Certification that the seed lot meets applicable state and federal laws with regard to prohibited and restricted noxious weeds
9. Certification that seed is free of seeds listed on the Tonto weed seed list.

If no seed lots of a given species can be found entirely clean of weed species on the above lists, and the species is deemed essential to a project, contact the Forest Invasive Species Program Manager for exceptions.

Appendix D: AZHGIS

Arizona's On-line Environmental Review Tool
Search ID: 20080805006577
Project Name: Mazatzal North
Date: 8/5/2008 10:15:51 AM

Project Location



Project Name: Mazatzal North
Submitted By: Robert Pape
On behalf of: CONSULTING
Project Search ID: 20080805006577
Date: 8/5/2008 10:15:43 AM
Project Category: Energy Storage/Production/Transfer,Energy Transfer,Power line/electric line (new)
Project Coordinates (UTM Zone 12-NAD 83): 469160.642, 3769638.927 meter
Project Length: 1452.254 meter
County: GILA
USGS 7.5 Minute Quadrangle ID: 1085
Quadrangle Name: GISELA
Project locality is not anticipated to change

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	ESA	USFS	BLM	State
Agave delamateri	Tonto Basin Agave	SC	S		HS
Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S	
Haliaeetus leucocephalus	Bald Eagle	LT,DPS	S		WSC
Rana yavapaiensis	Lowland Leopard Frog	SC	S		WSC
Thamnophis eques megalops	Northern Mexican Gartersnake	SC	S		WSC

 APPLICATION INITIALS: _____

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: http://arizonaes.fws.gov/.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
Phone 520-670-6144
Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

 APPLICATION INITIALS: _____

management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Energy Storage/Production/Transfer,Energy Transfer,Power line/electric line (new)

Project Type Recommendations:

Based on the project type entered; coordination with U.S. Fish and Wildlife Service (Migratory Bird Treaty Act) may be required (http://arizonaes.fws.gov/)

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants http://www.azda.gov/PSD/quarantine5.htm. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control: http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml.

Impacts to raptors by above ground power lines and poles have been well documented. A number of structural improvements can minimize potential impacts to raptors and other migratory birds. Arizona Public Service (APS) offers guidelines to reduce mortality to these species http://www.aps.com/my_community/Environmental/Environmental_10.html. In addition, indirect affects to wildlife due to construction (timing of activity, clearing of rights-of-way, associated bridges and culverts, affects to wetlands, fences) should also be considered and mitigated. Please contact the Project Evaluation Program for further recommendations regarding trenching and power line associated activities.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

Project Location and/or Species recommendations:

HDMS records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:
Ecological Services Office
US Fish and Wildlife Service

2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

 APPLICATION INITIALS: _____

HDMS records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area (refer to page 1 of the receipt). Please contact:

Arizona Department of Agriculture

1688 W Adams
Phoenix, AZ 85007
Phone: 602-542-4373

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366

Terms of Use

By using this site, you acknowledge that you have read and understand the terms of use. Department staff may revise these terms periodically. If you continue to use our website after we post changes to these terms, it will mean that you accept such changes. If at any time you do not wish to accept the Terms, you may choose not to use the website.

1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.
2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act .
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information

 APPLICATION INITIALS: _____

becomes available, this review may need to be reconsidered.
5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the *Environmental Review Receipt.*

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using *this system expressly consents to such monitoring and* is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search *result as well as all contact information. This information is maintained* for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Signature: _____

Date: _____

Proposed Date of Implementation: _____

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

 APPLICATION INITIALS: _____

Arizona's On-line Environmental Review Tool
Search ID: 20080805006577
Project Name: Mazatzal North
Date: 8/5/2008 10:15:51 AM

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

 APPLICATION INITIALS: _____

EXHIBIT C: AREAS OF BIOLOGICAL WEALTH

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit C reads as follows:

"Describe any areas in the vicinity of the proposed site or route which are unique because of biological wealth or because they are habitats for rare and endangered species. Describe the biological wealth or species involved and state the effects, if any, the proposed facilities will have thereon."

Exhibit C includes summaries of areas of biological wealth, as well as the potential impacts the Project may have on each resource (see the EA, included in Exhibit B-1, for more information).

Overview

The information provided in this section includes the results of a literature search, secondary data collection from the U.S. Fish and Wildlife Service (USFWS) and AZGFD Internet website sources, and a field reconnaissance performed on July 31, 2008. The field reconnaissance did not include any species-specific surveys. There are no identified areas of biological wealth within the Project footprint that are considered unique, but there is habitat that could potentially be used by rare or endangered species that might occur seasonally or regularly use the Project area. Project development will disturb approximately 41 acres of land.

Methodology

The most up-to-date (December 15, 2009) USFWS list for Gila County, Arizona was reviewed for this Project. The USFWS list includes 15 federally listed species that currently receive protection under the Endangered Species Act (ESA) as either threatened or endangered species, and 4 species that are candidate species for ESA listing as threatened or endangered; the list also includes 1 conservation agreement species (USFWS 2010). The USFWS list for Gila County is located in Appendix A.

The AZGFD Heritage Data Management System – Online Environmental Tool (AZHGIS) was accessed for this Project on May 12, 2010. The AZHGIS Project receipt (ID 20100512012184; Appendix B) lists records for seven special status species occurring within 3 miles of the Project. These include 2 federal candidate species for ESA listing and 5 federal species of concern; 6 of these are also Forest Service Sensitive Species, while 5 are also considered wildlife species of special concern (WSC) by the AZGFD. Federal species of concern have no legal protection under the ESA, but are monitored by the AZGFD in Arizona for the USFWS. One species is also an Arizona Department of Agriculture highly safeguarded plant species. Since the AZHGIS database contains only known records for special status species, and many areas of Arizona have not been adequately surveyed for such resources, the full AZGFD special status species list for Gila County was also reviewed for species that could potentially occur within the Project footprint.

Special Status Wildlife and Plant Species

Table C-1 includes federally listed and other special status wildlife and plant species that occur in Gila County, Arizona. The table lists the potential for presence of each of these special status species occurring in the Project footprint, as well as the justification for exclusion of a species from further consideration, as appropriate. Species with a low or very low potential are considered to be unlikely or rare occurrences within the Project footprint and are unlikely to be affected by Project development.

There are 12 species of animals and 3 species of plants listed as sensitive species that could potentially be present in the Project footprint. The Zone-tailed hawk is the only species with a moderate or better potential to occur in the Project footprint.

No saguaro *(Carnegiea gigantea)* are present in the Project study area.

Potential Impacts

Zone-tailed Hawk

Zone-tailed Hawks nest over a large elevation range from high forest habitats down to low desert elevations along riparian drainages. They commonly nest in the highest tree in an area (Corman and Wise-Gervais 2005), and are relatively common in central and southeastern Arizona. There is a moderate potential for these birds foraging within the Project footprint. Since broad-leaf riparian trees occur near the Project on lower Rye Creek and Tonto Creek downstream of the Project, this species is more likely to occur in those areas. However, the birds could forage within the Project footprint. Vegetation clearing could impact some prey that could be used by these birds, but due to the small area that will be cleared, Project impacts to these resources are considered inconsequential for any Zone-tailed Hawks using the area.

Table C-1 – Federally Listed and Other Special Status Species that Occur in Gila County, Arizona, and their Potential for Occurring within the Project Footprint

Common Name	Scientific Name	Status	Habitat	Potential	Justification for Exclusion
MAMMALS					
Lesser Long-nosed Bat	*Leptonycteris curasoae yerbabuenae*	LE; WSC	Low desert habitats to mid-elevations where food plants such as saguaro cacti or species of agaves are present	None	Outside of the known range of the species
Pale Townsend's Big-eared Bat	*Corynorhinus townsendii pallescens*	SC; FS	Roosts in mines and caves, and occasionally in buildings	Low	No suitable habitat
Greater Western Bonneted Bat	*Eumops perotis californicus*	SC; FS	Roosts in crevices and shallow caves on the sides of cliffs and rock walls	None	No suitable habitat
Allen's Lappet-browed Bat	*Idionycteris phyllotis*	SC; FS	Roosts in mines, caves, and snags, generally in mid-elevation forests	Low	No suitable habitat

Table C-1 – Federally Listed and Other Special Status Species that Occur in Gila County, Arizona, and their Potential for Occurring within the Project Footprint					
Common Name	**Scientific Name**	**Status**	**Habitat**	**Potential**	**Justification for Exclusion**
Western Red Bat	*Lasiurus blossevillii*	FS; WSC	Riparian or encinal habitat at various elevations	None	No suitable habitat
California Leaf-nosed Bat	*Macrotus californicus*	SC; FS; WSC	Sonoran Desertscrub with caves or mines for roosts	Very Low	No suitable habitat
Arizona Myotis	*Myotis occultus*	SC	Ponderosa pine, oak-pine woodland, or riparian habitats	None	No suitable habitat
Fringed Myotis	*Myotis thysanodes*	SC	Found from chaparral to ponderosa pine; most common in oak woodland; forage out into variety of other habitats	None	No suitable habitat
Cave Myotis	*Myotis velifer*	SC	Roosts in mines and caves at lower elevations within a couple miles of water	Very low	No suitable habitat
Long-legged Myotis	*Myotis volans*	SC	Resident of ponderosa pine or other coniferous forest habitats; roosts in trees, rock crevices, and buildings	None	No suitable habitat
Yuma Myotis	*Myotis yumanensis*	SC	Highly restricted to areas where open water is available for foraging	None	No suitable habitat
Pocketed Free-tailed Bat	*Nyctinomops femorosaccus*	FS	Rocky cliffs and slopes of southern deserts in Arizona, uses man-made shelters, such as under roofing tiles on buildings	Very low	No suitable habitat
Big Free-tailed Bat	*Nyctinomops macrotis*	SC	Roost in crevices or rock shelters, usually in high cliffs	None	No suitable habitat
Springerville Pocket Mouse	*Perognathus flavus goodpasteri*	SC; FS	Presence of grassy cover is the most important element in habitat selection; in northern Arizona-plains, desert grasslands, and sagebrush-cactus associations, extending into junipers; in southern Arizona grassy bajadas, often up to oak woodland-chaparral zones, as well as mesquite grassland	None	Outside of the known range of the species
Mexican Gray Wolf	*Canis lupus baileyi*	LE; WSC	Most habitats, except low desert	None	Outside of the known range of the species
BIRDS					
Northern Goshawk	*Accipiter gentilis*	SC; FS; WSC	Present in coniferous, deciduous, or mixed forest at forest edges, or in open woodlands	None	No suitable habitat

Table C-1 – Federally Listed and Other Special Status Species that Occur in Gila County, Arizona, and their Potential for Occurring within the Project Footprint					
Common Name	**Scientific Name**	**Status**	**Habitat**	**Potential**	**Justification for Exclusion**
Zone-tailed Hawk	*Buteo albonotatus*	FS	Typically in semi-open, remote habitats generally below 7,000 feet elevation; often associated with drainages that support broadleaf riparian tree species	Moderate	----
Northern Gray Hawk	*Buteo nitidus maxima*	SC; FS; WSC	Riparian or open woodland; pastures	Very Low	No suitable habitat
Common Black-hawk	*Buteogallus anthracinus*	FS; WSC	Nests in cottonwoods in riparian areas	None	No suitable habitat.
Yellow-billed Cuckoo	*Coccyzus americanus*	C; WSC	Open woodland in the presence of thick underbrush, parks, riparian woodland, and scrub	None	No suitable habitat
Bobolink	*Dolichonyx oryzivorus*	WSC	Weedy fields and agricultural areas	None	No suitable habitat
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	LE; WSC	Riparian corridors with willow, cottonwood, or tamarisk	None	No suitable habitat
Eared Quetzal	*Euptilotis neoxenus*	FS	Montane woodlands; often along streams	None	Outside of the known range of the species
American Peregrine Falcon	*Falco peregrinus anatum*	SC; FS; WSC	Areas with cliffs for nesting and perching near waterbodies	Very Low	No suitable habitat
Bald Eagle – Sonoran Desert DPS	*Haliaeetus leucocephalus*	LT*; FS; WSC	Riparian areas, primarily Salt and Verde River watersheds	Very Low	No suitable habitat
Bald Eagle – Wintering Population	*Haliaeetus leucocephalus*	SC; FS: WSC	Riparian areas, primarily Salt and Verde River watersheds	Low	No suitable habitat
Belted Kingfisher	*Megaceryle alcyon*	WSC	Rivers, ponds, and lakes; needs embankments for breeding	None	No suitable habitat
Osprey	*Pandion haliaetus*	WSC	Nests near water; feeds primarily on fish	None	No suitable habitat
Yuma Clapper Rail	*Rallus longirostris yumanensis*	LE; WSC	Tall dense vegetation associated with marshes, rivers, and lakes	None	Outside of the known range of the species; no suitable habitat
Mexican Spotted Owl	*Strix occidentalis lucida*	LT; WSC	Dense forest, coniferous and hardwood; steep-walled canyons	None	No suitable habitat
AMPHIBIANS					
Arizona Toad	*Anaxyrus microscaphus*	SC	Shallow rocky streams from Arizona Upland Desertscrub up to Petran Montane Conifer Forest	None	No suitable habitat

Table C-1 – Federally Listed and Other Special Status Species that Occur in Gila County, Arizona, and their Potential for Occurring within the Project Footprint					
Common Name	**Scientific Name**	**Status**	**Habitat**	**Potential**	**Justification for Exclusion**
Western Barking Frog	*Craugastor augusti cactorum*	WSC; FS	Madrean evergreen woodland	None	Outside of the known range of the species; no suitable habitat
Chiricahua Leopard Frog	*Lithobates chiricahuensis*	LT; WSC	Rocky streams with deep pools in oak and pine-oak woodlands and pine forests. Mountainous areas of southeast AZ, southwest NM, and Mexico	None	Outside of the known range of the species
Lowland Leopard Frog	*Lithobates yavapaiensis*	SC; FS; WSC	Permanent water in creeks, springs, rivers, and stock tanks	None	No suitable habitat
REPTILES					
Sonoran Desert Tortoise	*Gopherus agassizii*	SC; FS; WSC	Rocky slopes, wash banks, creosote bush desert	Low	No suitable habitat
Reticulate Gila Monster	*Heloderma s. suspectum*	FS	Inhabits chiefly shrubby, grassy, and succulent desert; occasionally enters oak woodland. Found in canyon bottoms or arroyos with permanent or intermittent streams, where it digs burrows or uses those of other animals	Low	No suitable habitat
Northern Mexican Gartersnake	*Thamnophis eques megalops*	C; FS; WSC	Generally found in pine-oak or piñon-juniper elevations; associated with permanent water sources	None	No suitable habitat
Narrow-headed Gartersnake	*Thamnophis rufipunctatus*	SC; FS; WSC	A highly aquatic-dependent species of rocky lakeshores and clear rocky streams. Occurs from piñon-juniper up to ponderosa elevations	None	No suitable habitat
FISH					
Longfin Dace	*Agosia c. chrysogaster*	SC; FS	Streams with sandy or gravel bottoms below 5,000 feet elevation; from clear mountain streams down to intermittent low desert streams	None	No suitable habitat
Desert Sucker	*Catostomus clarki*	SC; FS	Found in small to moderately large streams with riffles and pools	None	No suitable habitat
Sonora Sucker	*Catostomus insignis*	SC; FS	Found in a variety of habitats, from warm water rivers to trout streams; usually in gravelly or rocky pools of relatively deep, quiet water	None	No suitable habitat

Table C-1 – Federally Listed and Other Special Status Species that Occur in Gila County, Arizona, and their Potential for Occurring within the Project Footprint					
Common Name	**Scientific Name**	**Status**	**Habitat**	**Potential**	**Justification for Exclusion**
Gila Chub	*Gila intermedia*	LE; WSC	Gila chub utilize a variety of habitat types in smaller streams, springs, and marshes. Adults prefer heavily vegetated deeper pools, while juveniles occur in riffles, pools, and along undercut banks	None	Outside of the known range of the species
Headwater Chub	*Gila nigra*	C; FS	Mid- to head water reaches of mid-sized streams where they are associated with deep, near-shore pools adjacent to stream riffles	None	No suitable habitat
Roundtail Chub	*Gila robusta*	C; FS; WSC	A resident of cool to warm water in mid-elevation streams and rivers	None	Outside of the known range of the species
Spikedace	*Meda fulgida*	LT; WSC	Adults occur in flowing waters of medium depth, typically at the outflow of creeks feeding large streams. Designated critical habitat in the Verde River	None	Outside of the known range of the species
Apache Trout	*Oncorhynchus gilae apache*	LT; WSC	Cool, clear, high-elevation streams and rivers	None	Outside of the known range of the species
Gila Topminnow	*Poeciliopsis o. occidentalis*	LE; WSC	Vegetated springs and margins, pools, and backwaters of creeks and small to medium rivers	None	No suitable habitat
Colorado Pikeminnow	*Ptychocheilus lucius*	LE; WSC	Typically present in warm waters of seasonally variable, fast-flowing rivers and streams with a high sediment load	None	Outside of the known range of the species
Speckled Dace	*Rhinichthys osculus*	SC	Primarily a resident of swift moderate-sized cool streams with rocky bottoms, but also occurs in warm perennial or intermittent streams at middle to upper elevations. Also may occur in lakes and outflows of desert springs	None	No suitable habitat
Loach Minnow	*Tiaroga cobitis*	LT; WSC	A bottom-dwelling species frequenting turbulent riffles of rivers and larger tributaries. They prefer swift-flowing streams with gravelly to cobbly bottoms. Designated critical habitat in the Verde	None	Outside of the known range of the species

Table C-1 – Federally Listed and Other Special Status Species that Occur in Gila County, Arizona, and their Potential for Occurring within the Project Footprint					
Common Name	**Scientific Name**	**Status**	**Habitat**	**Potential**	**Justification for Exclusion**
			River		
Razorback Sucker	*Xyrauchen texanus*	LE; WSC	Eddies, backwaters, and deeper water; over sand, mud, or gravel; Colorado River (designated critical habitat), Lake Mohave, and San Juan River (designated critical habitat)	None	Outside of the known range of the species
INVERTEBRATES					
California floater	*Anodonta californiensis*	SC; FS	Mud or sandy bottoms in shallow waters of lakes, reservoirs, or perennial streams	None	No suitable habitat
Fossil Springsnail	*Pyrgulopsis simplex*	SC; FS	Springs along perennial portion of Fossil Creek	None	Outside of the known range of the species; restricted to the perennial portions of Fossil Creek in the Verde River watershed
Brown Springsnail	*Pyrgulopsis sola*	SC; FS	Known only from Brown Spring in Yavapai County	None	Outside of the known range of the species
Netwing Midge	*Agathon arizonicus*	FS	Rapidly flowing mountain streams or waterfall areas; usually at middle elevations in piñon-juniper woodland or higher	None	No suitable habitat
Maricopa tiger beetle	*Cicindela oregona maricopa*	SC	Found on open sand or mud flats and stone terraces along streams, as well as near temporary and permanent ponds and occasionally in open soil some distance from water	None	No suitable habitat
PLANTS					
Pima Indian mallow	*Abutilon parishii*	SC; FS	Occurs on rocky slopes and canyon bottoms in desertscrub, and up into semidesert grassland from 2,477 to 4,856 feet	None	Outside of the known range of the species
Arizona agave	*Agave arizonica*	HS	Open, rocky slopes in Sonoran Desertscrub, chaparral, or juniper grassland habitats between 3,600 and 5,800 feet elevation	None	Outside of the known range of the species in the New River Mountains
Tonto Basin agave	*Agave delamateri*	SC; FS; HS	On open hilly slopes associated with drainages;	Very Low	No suitable habitat

Table C-1 – Federally Listed and Other Special Status Species that Occur in Gila County, Arizona, and their Potential for Occurring within the Project Footprint					
Common Name	**Scientific Name**	**Status**	**Habitat**	**Potential**	**Justification for Exclusion**
			Tonto Basin to Verde River area. Population remnants of Hohokam and Salado cultures		
Hohokam agave	*Agave murpheyi*	SC; FS; HS	Open, hilly slopes or alluvial terraces in desertscrub habitat; usually in close proximity to major drainage systems	Very Low	No suitable habitat
Mt. Dellenbaugh sandwort	*Arenaria aberrans*	FS	Typically occurs in oak or pine forest habitat, but known from juniper; records from above 5,500 feet elevation	None	No suitable habitat
A sedge	*Carex chihuahuensis*	FS	Wet soils of cienegas, streambeds, meadows	None	No suitable habitat
Arizona bugbane	*Cimicifuga arizonica*	CA; SC; FS; HS	Canyon bottoms, seeps, and springs in ecotone between coniferous forest and riparian habitat at mid- to high elevations	None	No suitable habitat
Arizona hedgehog cactus	*Echinocereus triglochidiatus* var. *arizonicus*	LE; HS	Rocky, steep-walled canyons, slopes, and boulder piles at mid- elevations in Arizona Desert grassland habitat	None	Outside of the known range of the species
Mogollon fleabane	*Erigeron anchana*	SC; FS	Rock ledges or crevices in canyons from chaparral to pine forest elevations	None	No suitable habitat
San Carlos wild-buckwheat	*Eriogonum capillare*	SC	Disturbed areas or areas with little competition from other plants; gravelly soils; 1,960 – 4,400 feet elevation range	None	Outside of the known range of the species
Eastwood alumroot	*Heuchera eastwoodiae*	FS	Shaded canyons between 5,000 and 6,000 feet in elevation	None	No suitable habitat
Arizona alumroot	*Heuchera glomerulata*	FS	Rich soils of shaded outcrops near streams or seeps at mid- to high elevations	None	No suitable habitat
Sweet cicely	*Osmorhiza brachypoda*	FS	Riparian, moist woodland and coniferous forest habitats	None	No suitable habitat
Flagstaff beardtongue	*Penstemon nudiflorus*	FS	Dry slopes of ponderosa pine forest from 4,500 to 7,000 feet elevation	None	No suitable habitat
Gila rock daisy	*Perityle gilensis* var. *salensis*	FS	Steep rocky slopes and rocky ledges in the Salt River drainage	None	No suitable habitat
Fish Creek rock daisy	*Perityle saxicola*	SC; FS	Very xeric habits on steep slopes or cliff faces of canyons or buttes	Very Low	No suitable habitat

Table C-1 – Federally Listed and Other Special Status Species that Occur in Gila County, Arizona, and their Potential for Occurring within the Project Footprint					
Common Name	**Scientific Name**	**Status**	**Habitat**	**Potential**	**Justification for Exclusion**
Arizona phlox	*Phlox amabilis*	FS	Exposed rocky slopes on limestone or volcanic substrates in piñon-juniper or ponderosa pine–Gambel oak communities	None	No suitable habitat
Blumer's dock	*Rumex orthoneurus*	SC; FS; HS	Mid- to high elevation wetlands with moist organic soil; streams, springs, and meadows	None	No suitable habitat
Aravaipa sage	*Salvia amissa*	SC; FS	Upper floodplain terraces near permanent streams; often in understory of mature riparian trees	None	No suitable habitat

Key:

Federal Status:

LE – Federally listed Endangered Species (ESA)
LT – Federally listed Threatened Species (ESA)
C – Candidate species for federal (ESA) listing as Threatened or Endangered
CA – Conservation Agreement species
DPS – Distinct Population Segment only protected

Forest Service:

FS – Forest Sensitive Species

State of Arizona:

WSC – AZGFD wildlife species of special concern
SC – Former federal Category 1 and 2 species; currently monitored for the USFWS by the AZGFD

Arizona Department of Agriculture:

HS – Highly safeguarded species

*The Bald Eagle was delisted range-wide on July 9, 2007; however, the Arizona District Federal Court currently holds an injunction (March 5, 2008) against formal delisting of the Sonoran DPS by the USFWS. The Arizona Federal Court must lift the injunction before the Bald Eagle can be officially delisted. Until this occurs, the Sonoran DPS of the Bald Eagle retains its federally listed threatened status under the ESA.

References: ARPC (no date); Brennan and Holycross 2006; Hershler and Landye 1988; Hoffmeister 1986; Kearney and Peebles 1960; Lee et al. 1980; National Geographic Society 2002; Pearson and Wismann 1995; Stebbins 2003; Wheeler 2003

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EXHIBIT D: BIOLOGICAL RESOURCES

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit D reads as follows:

"List the fish, wildlife, plant life and associated forms of life in the vicinity of the proposed site or route and describe the effects, if any, the proposed facilities will have thereon."

Exhibit D includes a summary of biological resources, as well as the potential impacts the Project may have on biological resources (see the EA, included in Exhibit B-1, for more information).

BIOLOGICAL RESOURCES

Project Environment

The Project is situated in the TNF, approximately 3 miles south of Rye, Arizona. The area is bounded on the north by the Black Mountain foothills, on the east by the Sierra Ancha Range, and is flanked on the west and south by the Mazatzal Mountains. Project elevations range from 2,890 to 3,290 feet above mean sea level. The only major drainage in the Project area is Rye Creek. Rye Creek has its headwaters in the Cypress Thicket area of the TNF, approximately 10 miles to the northwest and enters Tonto Creek approximately 3.6 flow miles downstream of the Project. Rye Creek has a large watershed, but in the Project area the creek flows only seasonally, or during stochastic rainfall events.

Vegetation Types

The entire Project footprint is situated within the semidesert grassland biome, as described by Brown (1982).

Semidesert Grassland

Plants that are typical of semidesert grassland habitat observed on the site include perennial grasses such as tobosa grass (*Pleuraphis mutica*) and three-awn (*Aristida* sp.) (Brown 1982). Other plants typical of this biome include numerous stem and leaf succulent species such as agaves, yuccas, and cacti, many of which have Chihuahuan Desert affinities. Examples within the Project area include goldenflower century plant (*Agave chrysantha*) and sacahuista (*Nolina microcarpa*). Semidesert grassland scrub-shrub plants present within the Project include velvet mesquite (*Prosopis velutina*), oneseed juniper (*Juniperus monosperma*), fairyduster (*Calliandra eriophylla*), catclaw mimosa (*Mimosa aculeaticarpa*), catclaw acacia (*Acacia greggii*), spiny hackberry (*Celtis ehrenbergiana*), and red barberry (*Berberis haematocarpa*).

Cacti are an important component of semidesert grassland, and are represented by the following seven species within the Project limits: buckhorn cholla, Christmas cactus, and walkingstick

cactus (*Cylindropuntia acanthocarpa*, *C. leptocaulis*, and *C. spinosior*, respectively); pinkflower hedgehog cactus (*Echinocereus f. fasciculata*); candy barrel cactus (*Ferocactus wislizeni*); and two species of pricklypear cactus (*Opuntia engelmannii* and *O. phaeacantha*).

Wildlife

Appendix C, Species Tables C-1 (mammals), C-2 (birds), and C-3 (amphibians and reptiles) of this exhibit list vertebrate wildlife species that may potentially occur within the Project footprint. This includes 41 species of mammals, 82 species of birds, 4 amphibian species, and 35 species of reptiles.

Potential Impacts

Vegetation

Impacts to vegetation will involve approximately 41 acres, all in semidesert grassland habitat. Removal of vegetation will minimally affect forest populations of these habitat types or individual plant species. Ground disturbance resulting from vegetation clearing will remove the seed bank in these areas and may provide an avenue for colonization by invasive non-native plant species, which could compete with native vegetation for resources and potentially alter the local fire regime in these areas.

Wildlife

Individual animals, their eggs, and/or young could be lost during ground disturbing construction activities, and by construction traffic. There are no known unique populations of any wildlife species occurring within the Project limits and impacts to species would not adversely affect any wildlife populations at the forest level. Project specific environmental awareness training provided for on-site personnel and posting of a 15 mph speed limit can help minimize potential impacts to wildlife.

Appendix A: USFWS List for Gila Count

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Gila County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Apache (Arizona) trout	*Oncorhynchus gilae apache*	Threatened	Yellowish to yellow-olive cutthroat-like trout with large dark spots on body. Dorsal, anal, and caudal fins edged with white. No red lateral band.	Apache, Coconino, Gila, Graham, Greenlee, Navajo	> 5,000 ft	Streams and rivers generally above 6,000 ft. elevation with adequate stream flow and shading; temperatures below 77 degrees F; and substrate composed of boulders, rocks, gravel and some sand and silt.	Presently restricted to drainages in the White Mountains. Hybridization with introduced trout has complicated efforts to maintain the genetic purity of some populations. Special regulations (4d Rule) allow Arizona to manage species as a sport fish.
Arizona hedgehog cactus	*Echinocereus triglochidiatus var. arizonicus*	Endangered	Dark green cylindroid stem, 2.5-12 inches tall, 2-10 inches in diameter. Occurs singly or in clusters. Has 1-3 gray or pinkish central spines, the largest deflexed, and 5-11 radial spines. Flower are brilliant red along side of stem.	Gila, Pinal	3,200-5,200 ft	Ecotone between interior chaparral and madrean evergreen woodland.	Open slopes, in narrow cracks between boulders, and in understory of shrubs. Additional genetic studies have determined that the species does not occur outside of the type locality.
Bald eagle	*Haliaeetus leucocephalus*	Threatened	Large, adults have white head and tail. Height 28-38 inches; wingspan 66-96 inches. Dark with varying degrees of mottled brown plumage. Feet bare of feathers.	Gila, Graham, La Paz, Maricopa, Mohave, Pinal, Yavapai, Yuma	Varies	Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey.	Some birds are nesting residents while a larger number winters along rivers and reservoirs. Once endangered (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) because of reproductive failures from pesticide poisoning and loss of habitat, this species was downlisted to threatened on August 11, 1995, and delisted August 8, 2007. Threatened status reinstated for Desert nesting bald eagles.
Chiricahua leopard frog	*Lithobates [Rana] chiricahuensis*	Threatened	Cream colored tubercles (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Santa Cruz, Yavapai	3,300-8,900 ft	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs.	Require permanent or nearly permanent water sources. Populations north of the Gila River may be a closely-related, but distinct, undescribed species. A special rule allows take of frogs due to operation and maintenance of livestock tanks on State and private lands.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Colorado pikeminnow	*Ptychocheilus lucius*	Endangered	Largest American minnow (up to 6 feet and 80 lbs) dusky-green, slender body with gold flecks on the dorsal surface. Head long and slender.	Gila, Yavapai	< 4,000 ft	Warm, swift, turbid mainstem rivers. Prefers eddies and pools.	Experimental non-essential population (treated as proposed threatened species). No critical habitat in Arizona.
Gila chub	*Gila intermedia*	Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, Yavapai	2,000-5,500 ft	Pools, springs, cienegas, and streams.	Found on multiple private lands, including the Nature Conservancy and the Audubon Society. Also occurs on Federal and state lands and in Sonora, Mexico. Critical habitat occurs in Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai counties.
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	Endangered	Small (2 inches), guppy-like, live bearing. lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically also occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yuma	1,600-11,500 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Loach minnow	*Tiaroga cobitis*	Threatened	Small (<3 inches) slender, elongated fish, olive colored with dirty white spots at the base of the dorsal and caudal fins. Breeding males vivid red on mouth and base of fins.	Apache, Cochise, Gila, Graham, Greenlee, Navajo, Pinal	< 8,000 ft	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel. Recurrent flooding and natural hydrograph important.	Presently found in Aravaipa Creek, Deer Creek, Turkey Creek, Blue River, Campbell Blue Creek, San Francisco River, Eagle Creek, North Fork of the East Fork Black River, and White River in Arizona, and Dry Blue Creek, Pace Creek, Frieborn Creek, the Tularosa River, West Fork Gila River, and the mainstem upper Gila River in New Mexico. Populations have been recently reintroduced in Hot Springs and Redfield canyons in Cochise and Graham counties; Fossil Creek in Gila County; and Bonita Creek in Graham County Arizona. Critical habitat (72 FR 13356-13422, March 21, 2007) found in Apache, Graham, Greenlee, and Pinal counties, Arizona, as well as portions of the Blue River, San Francisco River, Tularosa River, Negrito Creek, Pace Creek, Dry Blue Creek, Frieborn Creek, Whitewater Creek, Gila River, and its West, Middle, and East Forks in Catron, Grant, and Hidalgo counties in New Mexico.
Mexican gray wolf	*Canis lupus baileyi*	Endangered	Large dog-like carnivore. Head and feet are large in proportion to rest of body. Coat color varies with mix of brown, rust, black, gray, and white. Distinct white lip line around mouth. Adults weigh between 60-90 pounds.	Apache, Gila, Greenlee, Navajo	4,000-12,000 ft	Chaparral, woodland, and forested areas. May cross desert areas.	In March 1998, Mexican gray wolves were reintroduced as an experimental nonessential (10j) population under a program to re-establish the subspecies to a portion of its historical range. Wolves are released within the experimental boundary into a designated area known as the "Blue Range Wolf Recovery Area" (BRWRA) located in the Apache National Forest in Greenlee and Apache counties. Mexican gray wolves found outside of the experimental nonessential boundary are considered endangered. In 2002, the White Mountain Apache tribe (WMAT) became one of the lead agencies for the reintroduction and allowed wolves on their lands. This effectively expanded the experimental nonessential population into Navajo, Apache, and Gila counties on WMAT lands.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	4,100-9,000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182) in Arizona in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties.
Razorback sucker	*Xyrauchen texanus*	Endangered	Large, up to 3 feet long and up to 6 lbs. high sharp-edged keel-like hump behind the head. Head flattened on top. Olive-brown above to yellowish below.	Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, Yuma	< 6,000 ft	Riverine and lacustrine areas, generally not in fast moving water and may use backwaters.	Big River fish also found in Horseshoe reservoir (Maricopa County). Critical habitat includes the 100-year floodplain of the river through the Grand Canyon from confluence with Paria River to Hoover Dam; Hoover Dam to Davis Dam; Parker Dam to Imperial Dam. Also Gila River from Arizona/New Mexico border to Coolidge Dam; and Salt River from Hwy 60/SR77 Bridge to Roosevelt Dam; Verde River from FS boundary to Horseshoe Lake.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 8,500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Migratory riparian-obligate species that occupies breeding habitat from late April to September. Distribution within its range is restricted to riparian corridors. Difficult to distinguish from other members of the Empidonax complex by sight alone. Training seminar required for those conducting flycatcher surveys. Critical habitat was finalized on October 19, 2005 (50 CFR 60886). In Arizona there are critical habitat segments in Apache, Cochise, Gila, Graham, Greenlee, Maricopa, Mohave, Pima, Pinal, and Yavapai counties.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Spikedace	*Meda fulgida*	Threatened	Small (<3 inches) slim fish with silvery sides and "spine" on dorsal fin. Breeding males are a brassy golden color.	Cochise, Gila, Graham, Greenlee, Pinal, Yavapai	< 6,000 ft	Medium to large perennial streams with moderate to swift velocity waters over cobble and gravel substrate. Recurrent flooding and natural hydrograph important to withstand invading exotic species.	Presently found in Aravaipa Creek, Eagle Creek, Verde River, and the Gila River from the San Pedro River to Ashurst-Hayden Dam in Arizona, and the Gila River and its East and West Forks in New Mexico. Populations have been recently reintroduced in Hot Springs and Redfield canyons in Cochise and Graham counties; Fossil Creek in Gila County; and Bonita Creek in Graham County Arizona. Critical habitat (72 FR 13356-13422, March 21, 2007) in Graham, Greenlee, Pinal, and Yavapai counties in Arizona, and in Catron, Grant, and Hidalgo counties in New Mexico.
Yuma clapper rail	*Rallus longirostris yumanensis*	Endangered	Water bird with long legs and short tail. Long, slender decurved bill. Mottled brown or gray on its rump. Flanks and undersides are dark gray with narrow vertical stripes producing a barring effect.	Gila, La Paz, Maricopa, Mohave, Pinal, Yuma	< 4,500 ft	Fresh water and brackish marshes.	Species is associated with dense emergent riparian vegetation. Requires wet substrate (mudflat, sandbar) with dense herbaceous or woody vegetation for nesting and foraging. Channelization and marsh destruction are primary sources of habitat loss.
Headwater chub	*Gila nigra*	Candidate	Streamlined, dark gray to brown fish, often with longitudinal stripes on the sides. Adults reach a maximum size of about 12 inches.	Gila, Graham,Yavapai	3,000-6,700 ft	Medium-sized streams in large, deep pools often associated with cover such as undercut banks or deep places created by trees or rocks.	Occurs in the East Verde River and tributaries, Fossil Creek, Wet Bottom Creek, Deadman Creek, Tonto Creek and tributaries, San Carlos River, Ash Creek, and the upper Gila River in New Mexico. Statewide Conservation Agreement with Arizona Game and Fish was signed on December 2003.
Northern Mexican Gartersnake	*Thamnophis eques megalops*	Candidate	Background color ranges from olive, olive-brown, to olive-gray. Body has three yellow or light colored stripes running down the length of the body, darker towards tail. Species distinguished from other native gartersnakes by the lateral stripes reaching the 3rd and 4th scale rows. Paired black spots extend along dorsolateral fields.	Apache, Cochise,Coconino, Gila, Graham, Navajo, Pima, Pinal, Santa Cruz, Yavapai	130-8,500 ft	Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests.	Core population areas in the U.S. include mid/upper Verde River drainage, mid/lower Tonto Creek, and the San Rafael Valley and surrounding area. Status on tribal lands unknown. Distributed south into Mexico along the Sierra Madre Occidental and Mexican Plateau. Strongly associated with the presence of a native prey base including leopard frogs and native fish.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Roundtail Chub	*Gila robusta*	Candidate	Member of the minnow family Cyprinidae and characterized by streamlined body shape. Color usually olive gray with silvery sides and a white belly. Breeding males develop red or orange coloration on the lower half of the cheeks and on the bases of paired fins. Individuals may reach 49.0 cm (19.3 in) but usually average 25-30 cm (9.8 - 11.8 in).	Apache, Coconino, Gila, Graham, Greenlee, LaPaz, Maricopa, Mohave, Navajo, Pinal, and Yavapai	1,000-7,500 ft.	Cool to warm waters of rivers and streams, often occupy the deepest pools and eddies of large streams.	Historical range of roundtail chub included both the upper and lower Colorado River basins. A 2009 status review determined that the lower Colorado River basin roundtail chub population segment (Arizona and New Mexico) qualifies as a distinct vertebrate population segment (DPS). Populations in the Little Colorado, Bill Williams, and Gila River basins are considered candidate species.
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate	Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill that is blue-black with yellow on the lower half. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 6,500 ft	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	Neotropical migrant that winters primarily in South America and breeds primarily in the U.S. (but also in southern Canada and northern Mexico). As a migrant it is rarely detected; can occur outside of riparian areas. Cuckoos are found nesting statewide, mostly below 5,000 feet in central, western, and southeastern Arizona. Concern for cuckoos are primarily focused upon alterations to its nesting and foraging habitat. Nesting cuckoos are associated with relatively dense, wooded, streamside riparian habitat, with varying combinations of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. Some cuckoos have also been detected nesting in velvet mesquite, netleaf hackberry, Arizona sycamore, Arizona alder, and some exotic neighborhood shade trees.
Arizona bugbane	*Cimicifuga arizonica*	Conservation Agreement	Herbaceous perennial plant in the buttercup family, grows 6-7 feet tall. Small, white petal-less flowers appear between July-August. Fruit is a follicle that splits open on one side as it dries.	Coconino, Gila	5,300-8,300 ft	Areas of deep shade and moist, loamy soils with high humus content, and high humidity; typically along the bottoms and lower slopes of steep narrow canyons.	Occurs within mixed conifer and high elevation riparian deciduous forests near perennial or intermittent streams or seeps. All known populations are found in the Coconino, Kaibab, and Tonto National Forests. A Conservation Agreement was signed in June 1999.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
American peregrine falcon	*Falco pereginus anatum*	Delisted	A crow-sized falcon with slate blue-gray on the back and wings, and white on the underside; a black head with vertical "bandit's mask" pattern over the eyes; long pointed wings; and a long wailing call made during breeding. Very adept flyers and hunters, reaching diving speeds of 200 mph.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	3,500-9,000 ft	Areas with rocky, steep cliffs, primarily near water, where prey (primarily shorebirds, songbirds, and waterfowl) concentrations are high. Nests are found on ledges of cliffs, and sometimes on man-made structures such as office towers and bridge abutments.	Species recovered with over 1,650 breeding birds in the US and Canada.
Arizona agave	*Agave arizonica*	Delisted	Member of the agave family. Has rosettes of bright green leaves, 17-24cm long and 2-4cm wide, broadest in the middle. Flowers are small, pale yellow, and jar shaped.	Gila, Maricopa, Yavapai	3,600-5,800 ft	Occurs on open slopes in chaparral or juniper grasslands. Prefers shallow, cobbled, and gravelly soils on steep slopes.	Arizona agave is a hybrid produced by a crossing of two other common agave species (A. chrysantha x A. toumeyana ssp. toumeyana).
California brown pelican	*Pelecanus occidentalis californicus*	Delisted	Large, dark gray-brown water bird with webbed feet, pouch underneath its long bill, and wingspan of 7 ft. Adults have a white head and neck, brownish black breast, and silver gray upper parts.	Gila, La Paz, Maricopa, Mohave, Pinal, Yuma	Varies	Coastal land and islands; species found occasionally around Arizona's lakes and rivers.	Considered an uncommon transient in Arizona. Most observations recorded along the Colorado River and in the Gila Valley. Individuals known to wander up from Mexico in summer and fall. No breeding has been documented in Arizona. Delisted on December 17, 2009.

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Appendix B: AZHGIS

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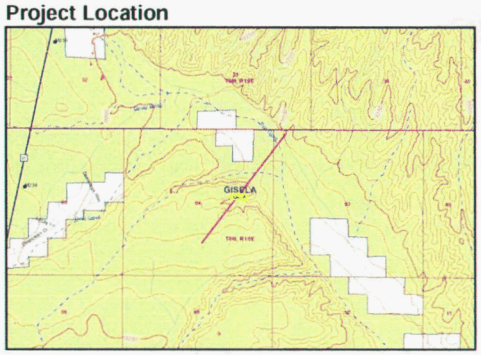
Arizona's On-line Environmental Review Tool
Search ID: 20100512012184
Project Name: Mazatzal 2010
Date: 5/12/2010 8:32:46 AM

Project Location



Project Name: Mazatzal 2010
Submitted By: Robert Pape
On behalf of: CONSULTING
Project Search ID: 20100512012184
Date: 5/12/2010 8:32:38 AM
Project Category: Energy Storage/Production/Transfer,Energy Transfer,Power line/electric line (new)
Project Coordinates (UTM Zone 12-NAD 83): 469200.305, 3769641.576 meter
Project Length: 1501.765 meter
County: GILA
USGS 7.5 Minute Quadrangle ID: 1085
Quadrangle Name: GISELA
Project locality is not anticipated to change

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	FWS	USFS	BLM	State
Agave delamateri	Tonto Basin Agave	SC	S		HS
Cicindela oregona maricopa	Maricopa Tiger Beetle	SC			
Coccyzus americanus	Yellow-billed Cuckoo (Western U.S. DPS)	C	S		WSC
Haliaeetus leucocephalus (wintering pop.)	Bald Eagle - Winter Population	SC, BGA	S	S	WSC
Haliaeetus leucocephalus pop. 3	Bald Eagle - Sonoran Desert area Population	SC, BGA	S	S	WSC
Rana yavapaiensis	Lowland Leopard Frog	SC	S	S	WSC
Thamnophis eques megalops	Northern Mexican Gartersnake	C	S		WSC

 APPLICATION INITIALS: _____

Arizona's On-line Environmental Review Tool
Search ID: 20100512012184
Project Name: Mazatzal 2010
Date: 5/12/2010 8:32:46 AM

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: http://arizonaes.fws.gov/.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
Phone 520-670-6144
Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

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management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Energy Storage/Production/Transfer,Energy Transfer,Power line/electric line (new)

Project Type Recommendations:

All degraded and disturbed lands should be restored to their natural state. Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

Based on the project type entered; coordination with State Historic Preservation Office may be required http://azstateparks.com/SHPO/index.html

Based on the project type entered; coordination with U.S. Fish and Wildlife Service (Migratory Bird Treaty Act) may be required (http://arizonaes.fws.gov/)

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants http://www.azda.gov/PSD/quarantine5.htm. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control: http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml.

Impacts to raptors by above ground power lines and poles have been well documented. A number of structural improvements can minimize potential impacts to raptors and other migratory birds. Arizona Public Service (APS) offers guidelines to reduce mortality to these species http://www.aps.com/my_community/Environmental/Environmental_10.html. In addition, indirect affects to wildlife due to construction (timing of activity, clearing of rights-of-way, associated bridges and culverts, affects to wetlands, fences) should also be considered and mitigated. Please contact the Project Evaluation Program for further recommendations regarding trenching and power line associated activities.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

Project Location and/or Species recommendations:

Heritage Data Management System records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:
Ecological Services Office
US Fish and Wildlife Service
2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

Heritage Data Management System records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area (refer to page 1 of the receipt). Please contact:
Arizona Department of Agriculture
1688 W Adams
Phoenix, AZ 85007
Phone: 602-542-4373

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366

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By using this site, you acknowledge that you have read and understand the terms of use. Department staff may revise these terms periodically. If you continue to use our website after we post changes to these terms, it will mean that you accept such changes. If at any time you do not wish to accept the Terms, you may choose not to use the website.

1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.

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2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act .
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.
5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Signature:_____

Date: _____

Proposed Date of Implementation: _____

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization:_____

Contact Name: _____

Address: _____

City, State, Zip: _____

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Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

Agency/organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

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Appendix C: Species Tables

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Table Appendix C-1 – Species of Mammals that Could be Present within the Project Footprint for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Desert Shrew	*Notiosorex crawfordi*	Any area with ample ground cover, including plant debris, trash, and lumber.
California Leaf-nosed Bat	*Macrotus californicus*	Inhabits lowland desertscrub where it commonly uses abandoned mine tunnels for roosts. Also will roost in rock shelters and man-made structures, such as buildings and bridges.
Cave Myotis	*Myotis velifer*	Roosts primarily in mines or caves in xeric habitats, such as creosote bush or paloverde mixed scrub plant associations. Requires a permanent water source within a few miles of roost.
California Myotis	*Myotis californicus*	Sonoran Desertscrub, and up to oak elevations with caves or mines present.
Small-footed Myotis	*Myotis leibii*	Utilizes a variety of roost types, usually above 3,500 feet.
Western Pipistrelle	*Pipistrellus hesperus*	Found in areas with canyon walls or cliff faces for roosting, and streambeds or tanks for foraging.
Big Brown Bat	*Eptesicus fuscus*	Wooded areas, desertscrub.
Hoary Bat	*Lasiurus cinereus*	Forests with medium to large size trees and dense foliage during the breeding season; during migration, males are found in foothills, deserts, and mountains, and females in lowlands. Hoary bats have been recorded from sea level to 13,200 feet.
Spotted Bat	*Euderma maculatum*	Typically found in higher elevation habitats such as pine forest. Roosts in crevices in cliff faces, often in harsh, rocky desert.
Allen's Lappet-browed Bat	*Idionycteris phyllotis*	Roosts in mines, caves, and snags, generally in mid-elevation forests
Townsend's Big-eared Bat	*Plecotus townsendii*	Roosts in mines, caves, or structures from low desert up into pines.
Pallid Bat	*Antrozous pallidus*	Desertscrub with caves, mines, cliffs, bridges, or other structures for roosts.
Brazilian Free-tailed Bat	*Tadarida brasiliensis*	Desertscrub and foothills with mines, caves, bridges, or old buildings.
Pocketed Free-tailed Bat	*Nyctinomops femorosaccus*	Rocky cliffs and slopes of southern deserts in Arizona, uses man-made shelters, such as under roofing tiles on buildings
Desert Cottontail	*Sylvilagus audubonii*	Desertscrub or semidesert grassland.
Black-tailed Jack Rabbit	*Lepus californicus*	Desertscrub or other areas with open ground cover.
Harris' Antelope Squirrel	*Ammospermophilus harrisii*	Areas of rocky slopes or soil of low deserts.
Rock Squirrel	*Spermophilus variegatus*	Rocky canyons and boulder-strewn slopes.
Botta's Pocket Gopher	*Thomomys bottae*	Wide variety of habitats, any area with soil suitable for digging burrows.
Rock Pocket Mouse	*Perognathus intermedius*	Rocky desertscrub habitats.
Ord's Kangaroo Rat	*Dipodomys ordii*	A variety of habitats at or below juniper-piñon elevation.

Table Appendix C-1 – Species of Mammals that Could be Present within the Project Footprint for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Plains Harvest Mouse	*Reithrodontomys montanus*	Found in dry habitats of desertscrub or chaparral, usually in the presence of mesquite or creosote bush with some grass species.
Western Harvest Mouse	*Reithrodontomys megalotis aztecus*	Wide variety of habitats, including desertscrub and semidesert grassland. Require adequate cover, preferably grasses.
Cactus Mouse	*Peromyscus eremicus*	Found among cactus or in rocky areas from low desert up into chaparral where they will use animal burrows, wood rat houses, and man-made structures.
Deer Mouse	*Peromyscus maniculatus*	Coniferous or riparian woodland, desertscrub; often adjacent to canals or along intermittent creeks.
White-footed Mouse	*Peromyscus leucopus arizonae*	A variety of habitats, typically in thick grasses or other dense vegetation.
Brush Mouse	*Peromyscus boylii*	In a wide variety of situations; usually associated with dense brush.
Northern Grasshopper Mouse	*Onychomys leucogaster*	Sparsely vegetated plains and desert grassland habitats in areas of friable soils.
Southern Grasshopper Mouse	*Onychomys torridus*	Desertscrub to desert grassland habitats.
White-throated Woodrat	*Neotoma albigula*	Most habitats below the conifer belt, and including the piñon-juniper. Areas with rocky outcrops that provide incipient midden structure have higher densities of woodrats. Common in areas with abundant cholla or prickly pear cacti.
Coyote	*Canis latrans*	Cosmopolitan, low desert to spruce forest.
Gray Fox	*Urocyon cinereoargenteus*	Open desertscrub, chaparral, or lower elevation woodland; occasionally in ponderosa pine or Douglas fir.
Raccoon	*Procyon lotor*	Riparian or wetland habitats.
Ringtail	*Bassariscus astutus*	Rocky areas of canyons and mountains where they shelter in cliffs, rocks, caves, or mines. Man-made structures are also utilized.
Badger	*Taxidea taxus berlandieri*	Flats and drainages adjacent to mountains, or in grasslands.
Spotted Skunk	*Spilogale putorius*	Low and middle elevations, often in rocky areas or around human habitation.
Striped Skunk	*Mephitis mephitis*	Found in vegetation thickets, animal burrows, rock piles, or crevices. Man-made structures are often utilized. They are almost always associated with a permanent water source.
Mountain Lion	*Puma concolor*	Usually in mountainous, forested areas, but also in desertscrub and semidesert grassland.
Bobcat	*Lynx rufus*	Rocky upland areas interspersed with open desert, grassland, or woodland.
Javelina	*Pecari tajacu*	Desertscrub up into low oak elevation.
Mule Deer	*Odocoileus hemionus*	Upland desert, chaparral, oak woodland, or pine forest.
Sources: Barbour and Davis 1969; Harvey et al. (1999); Hoffmeister (1986); it is (2007).		

Table Appendix C-2 – Species of Birds that Could be Present within the Project Footprint for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Turkey Vulture	*Cathartes aura*	Open country, agricultural areas.
Northern Harrier	*Circus cyaneus*	Open fields in winter.
Golden Eagle	*Aquila chrysaetos*	Mountainous areas, also grasslands.
Bald Eagle	*Haliaeetus leucocephalus*	Riparian areas, primarily Salt and Verde River watersheds
Cooper's Hawk	*Accipiter cooperi*	Broken woodlands or streamside groves.
Zone-tailed Hawk	*Buteo albonotatus*	Open remote areas of canyons, dry washes, rivers, and creeks that support mature broad-leaved trees.
Northern Gray Hawk	*Buteo nitidus maxima*	Riparian or open woodland; pastures
Red-tailed Hawk	*Buteo jamaicensis*	Plains, prairie groves, desert.
Swainson's Hawk	*Buteo swainsoni*	Prairie, desert, open woodlands.
Ferruginous Hawk	*Buteo regalis*	Open arid country, prairies, and badlands.
American Kestrel	*Falco sparverius*	Open country, cities.
Prairie Falcon	*Falco mexicanus*	Dry open country.
Peregrine Falcon	*Falco peregrinus*	Open habitats in rugged country, usually near lakes, rivers, or streams and with rocky outcrops or cliffs nearby.
Gambel's Quail	*Callipepla gambelii*	Desert scrublands and thickets, often near water.
Mourning Dove	*Zenaida macroura*	Wide variety of habitats.
White-winged Dove	*Zenaida asiatica*	Saguaro-paloverde desert, riparian areas, mesquite stands.
Greater Roadrunner	*Geococcyx californianus*	Desert scrub, chaparral, and arid open habitats with scattered brush.
Barn Owl	*Tyto alba*	Open desert, grasslands, and farmlands. Nests in dark cavities in cliffs, trees, mines, or embankments.
Great Horned Owl	*Bubo virginianus*	Common in wide variety of habitats.
Western Screech Owl	*Otus kennicottii*	Woodlands, including riparian.
Lesser Nighthawk	*Chordeiles acutipennis*	Dry, open country; scrubland and desert.
Whip-poor-will	*Caprimulgus vociferus*	Wooded canyons.
Common Poorwill	*Phalaenoptilus nuttallii*	Rocky and gravelly terrain in broken scrubland or chaparral, and openings in woodlands.
Black-chinned Hummingbird	*Archilochus alexandri*	Lowlands and low mountains.
Costa's Hummingbird	*Calypte costae*	Desert washes and dry chaparral.
Anna's Hummingbird	*Calypte anna*	Open woodland, chaparral, or scrublands.
Northern Flicker	*Colaptes auratus*	Open woodlands, lowlands in winter.
Ladder-backed Woodpecker	*Picoides scalaris*	Arid lowland or montane scrub, pine-oak and gallery forest habitats.
Say's Phoebe	*Sayornis saya*	Dry, open areas; canyons, cliffs.
Vermillion Flycatcher	*Pyrocephalus rubinus*	Shrubbery along streams and lowlands.
Brown-crested Flycatcher	*Myiarchus tyrannulus*	Saguaro desert and wooded areas along streams.

Table Appendix C-2 – Species of Birds that Could be Present within the Project Footprint for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Ash-throated Flycatcher	*Myiarchus cinerascens*	Desertscrub, piñon-juniper, oak woodland, chaparral, and riparian habitats.
Cassin's Kingbird	*Tyrannus vociferans*	Scrub, piñon-juniper-oak woodland, and riparian habitats.
Western Kingbird	*Tyrannus verticalis*	Dry, open lowlands.
Loggerhead Shrike	*Lanius ludovicianus*	Open or brushy areas.
Bell's Vireo	*Vireo bellii*	Mesquite shrublands and riparian corridors.
Gray Vireo	*Vireo vicinior*	Undergrowth of dry habitats.
Common Raven	*Corvus corax*	Mountains, deserts.
Horned Lark	*Eremophila alpestris*	Dirt fields, gravel ridges, grasslands.
Violet-green Swallow	*Tachycineta thalassina*	Primarily a highland species of coniferous or deciduous forests.
Cliff Swallow	*Petrochelidon pyrrhonota*	Near lakesides, streams, ponds, cliffs, and canals. Nest on buildings, under nearby bridges, and other overhangs.
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Open areas, especially near banks of streams and canals, ponds, and lakes.
Verdin	*Auriparus flaviceps*	Dense desert shrubbery, mesquite, and palo verde.
Bushtit	*Psaltriparus minimus*	Piñon-juniper and pine-oak woodland and scrub.
House Wren	*Troglodytes aedon*	Thickets and scrub of open woodland, rural areas and urban parks.
Bewick's Wren	*Thryomanes bewickii*	Brushy slopes, piñon-juniper, live-oak, and mesquite associations.
Rock Wren	*Salpinctes obsoletus*	Arid and semiarid habitats.
Canyon Wren	*Catherpes mexicanus*	Canyons and cliffs, often near water.
Blue-gray Gnatcatcher	*Polioptila caerulea*	Thickets, woodlands, and chaparral.
Black-tailed Gnatcatcher	*Polioptila melanura*	Desert washes
Western Bluebird	*Sialia mexicana*	Open pine, deciduous and mixed woodland, and riparian woodland.
Northern Mockingbird	*Mimus polyglottos*	Variety of habitats up to oak-juniper zone.
Bendire's Thrasher	*Toxostoma bendirei*	Sonoran Desertscrub and brushy grasslands.
Curve-billed Thrasher	*Toxostoma curvirostre*	Canyons and semi-arid brushlands.
Crissal Thrasher	*Toxostoma crissale*	Mesquite and willows along streams and washes.
Phainopepla	*Phainopepla nitens*	Desert and mesquite up into juniper and oak woodland in presence of fruiting mistletoe.
Lucy's Warbler	*Vermivora luciae*	Mesquites and cottonwoods along drainages.
Black-throated Gray Warbler	*Dendroica nigrescens*	Woodlands, brushlands, and chaparral.
Yellow Warbler	*Dendroica petechia*	Cottonwood and willow riparian habitat.
Wilson's Warbler	*Wilsonia pusilla*	Thickets along drainages.
Common Yellowthroat	*Geothlypis trichas*	Grassy fields and thick, shrubby vegetation along riparian corridors.
Summer Tanager	*Piranga rubra*	Among cottonwoods and willows in riparian areas.

Table Appendix C-2 – Species of Birds that Could be Present within the Project Footprint for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Western Tanager	*Piranga ludoviciana*	Coniferous or mixed coniferous-deciduous woodlands.
Canyon Towhee	*Pipilo fuscus*	Arid hills and desert canyons.
Abert's Towhee	*Pipilo aberti*	Desert woodlands and thickets along streams.
Spotted Towhee	*Pipilo maculatus*	Chaparral, oak woodland, lowlands in winter.
Rufous-crowned Sparrow	*Aimophila ruficeps*	Arid and hilly terrain, usually on rocky and grassy or brushy slopes.
Lark Sparrow	*Chondestes grammacus*	Open habitats with scattered bushes and trees.
Black-chinned Sparrow	*Spizella atrogularis*	Chaparral, arid scrub, and brushy hillsides.
Black-throated Sparrow	*Amphispiza bilineata*	Rocky slopes in desert habitats.
Song Sparrow	*Melospiza melodia*	Brush, particularly associated with drainages.
White-crowned Sparrow	*Zonotrichia leucophrys*	Grasslands
Black-headed Grosbeak	*Pheucticus melanocephalus*	Piñon-juniper, pine-oak, or cottonwood riparian woodland. Migrant.
Northern Cardinal	*Cardinalis cardinalis*	Along riparian habitats.
Blue Grosbeak	*Passerina caerulea*	Brush along streamsides.
Eastern Meadowlark	*Sturnella magna*	Grasslands and open fields. Migrant.
Western Meadowlark	*Sturnella neglecta*	Grasslands and cultivated fields.
Hooded Oriole	*Icterus cucullatus*	Deciduous trees along riparian corridors.
Bullock's Oriole	*Icterus bullockii*	Broad-leafed riparian habitat.
Scott's Oriole	*Icterus parisorum*	Arid and semiarid habitats.
House Finch	*Carpodacus mexicanus*	Arid scrub and brush, oak-juniper and pine-oak habitats, and in cultivated and urban areas.
Lesser Goldfinch	*Carduelis psaltria*	Open areas with scattered trees, second growth, and around human habitations.
Sources: AOU (1998); Corman and Wise-Gervais 2005; Ehrlich et al. (1988); NGS (2002); Tomoff (2000); Wheeler (2003).		

Table Appendix C-3 – Species of Amphibians and Reptiles that Could be Present within the Project Footprint for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Mexican Spadefoot	*Spea multiplicata*	Desert grasslands up into piñon-juniper elevations, usually in sandy or gravelly soils.
Red-spotted Toad	*Bufo punctatus*	Desert streams and oases, open grassland and scrubland, oak woodland, rocky canyons and arroyos, in crevices among rocks for shelter, breeds in rain pools, reservoirs, and temporary pools of intermittent streams.
Great Plains Toad	*Bufo cognatus*	Inhabits prairies or deserts, often breeding after heavy rains in summer in shallow temporary pools or quiet water of streams, marshes, irrigation ditches, and flooded fields. Also frequents creosote bush desert, mesquite woodland, and sagebrush plains.
Sonoran Desert Toad	*Bufo alvarius*	Desertscrub, semidesert grassland, and Madrean Evergreen Woodland habitats.
Eastern Collared Lizard	*Crotaphytus collaris*	A rock-dwelling species of canyons, rocky arroyos, limestone ledges from desertscrub up into piñon-juniper elevations.
Long-nosed Leopard Lizard	*Gambelia wislizenii*	Arid plains with bunchgrass or scattered shrubby vegetation.
Greater Earless Lizard	*Cophosaurus texanus*	Bajadas and hillsides in desertscrub and semidesert grassland habitats.
Common Lesser Earless Lizard	*Holbrookia maculata*	Exposed patches of sand or gravel along washes, and in mesquite, short-grass prairie and piñon-juniper woodland.
Ornate Tree Lizard	*Urosaurus ornatus*	Generally found where trees are present, but may occur in treeless areas, from low desert up to spruce-fir elevations.
Side-blotched Lizard	*Uta stansburiana*	Primarily a ground dwelling lizard found in almost any habitat or soil type.
Plateau Lizard	*Sceloporus tristichus*	Grassy plains and shrubby foothills.
Desert Spiny Lizard	*Sceloporus magister*	Arid or semi-arid habitats from creosote desert up into piñon-juniper elevations, including riparian habitats.
Clark's Spiny Lizard	*Sceloporus clarkii*	Found from desertscrub to Madrean Evergreen Woodland habitats.
Greater Short-horned Lizard	*Phrynosoma hernandesi*	Occurs from semi-arid plains up to spruce-fir elevations on a variety of soil types, but usually with loose soils being present.
Gila Spotted Whiptail	*Cnemidophorus flagellicaudus*	Found in brushy areas in desert grassland and chaparral up to piñon-juniper or oak woodland habitats.
Desert Grassland Whiptail	*Cnemidophorus uniparens*	Normally a species of desert or mesquite grassland, but will get up into coniferous forest along drainages.
Tiger Whiptail	*Cnemidophorus tigris*	Desertscrub, semidesert grassland, and Interior Chaparral habitats.
Great Plains Skink	*Eumeces obsoletus*	Generally found on fine-grained loose soils in areas of grasses and low shrubby growth, particularly along arroyos. Occurs from grassland elevations up into mountain elevations.
Madrean Alligator Lizard	*Elgaria kingii*	Foothills and Steep Mountain Slopes from semidesert grassland up into Petran Montane Conifer Forest.

Table Appendix C-3 – Species of Amphibians and Reptiles that Could be Present within the Project Footprint for the Proposed Mazatzal Substation Project		
Common Name	**Scientific Name**	**Habitat**
Western Banded Gecko	*Coleonyx variegatus*	Occurs in a wide variety of arid habitats from dune areas to rocky hillsides in desertscrub habitat.
Gila Monster	*Heloderma suspectum*	Usually inhabits rocky bajadas, washes, and hillsides in desertscrub or semidesert grassland habitats.
Western Threadsnake	*Leptotyphlops humilis*	A nocturnally active snake that lives mostly underground, usually in desertscrub or semidesert grassland habitats.
Sonoran Coralsnake	*Micruroides euryxanthus*	Occurs from Sonoran Desertscrub to semidesert grassland habitats.
Groundsnake	*Sonora semiannulata*	Primarily a snake of Arizona Upland Sonoran Desertscrub and semidesert grassland habitats.
Smith's Black-headed Snake	*Tantilla hobartsmithi*	Arizona Upland Desertscrub to Great Basin Conifer Woodland habitats.
Ring-necked Snake	*Diadophis punctatus*	Generally associated with springs or watercourses, but may occur in more arid habitat among rocks.
Night Snake	*Hypsiglena torquata*	Wide range of habitats, including deserts, grassland, chaparral, woodlands, and mountain meadows.
Western Lyresnake	*Trimorphodon biscutatus*	Canyons and rocky foothills of Arizona Upland Desertscrub habitat.
Gopher Snake	*Pituophis catenifer*	Open areas in a variety of habitats, including desertscrub, grassland, chaparral, woodlands, and coniferous forest.
Western Patch-nosed Snake	*Salvadora hexalepis*	From desertscrub up to piñon-juniper elevations; sandy or rocky, often dry habitats.
Sonoran Whipsnake	*Masticophis bilineatus*	Rocky streams from low desert up into pine-oak elevation.
Striped Whipsnake	*Masticophis taeniatus*	In both lowlands and mountains on flats and in canyons, in areas with grasses or shrubs.
Coachwhip	*Masticophis flagellum*	Sparsely vegetated areas from low desert to juniper woodland.
Long-nosed Snake	*Rhinocheilus lecontei*	Sandy soils of valleys and plains with grasses and shrubby vegetation.
Common Kingsnake	*Lampropeltis getula*	Wide variety of habitats, including desert, grassland, chaparral, woodlands, and coniferous forests.
Black-necked Gartersnake	*Thamnophis cyrtopsis*	Occurs from Arizona Upland Desertscrub up into lower Petran Montane Conifer Forest.
Western Diamond-backed Rattlesnake	*Crotalus atrox*	Rock outcrops, washes, or among dense vegetation, usually in dry lowland habitats, but also occurs up into open pine forest.
Mohave Rattlesnake	*Crotalus scutulatus*	Primarily a species of semidesert grasslands, but also common in desertscrub habitats.
Black-tailed Rattlesnake	*Crotalus molossus*	Primarily a montane species, preferring rocky cliffs in canyons or slopes with rocky cover.
Source: Brennan and Holycross 2006; Degenhardt et al. (1996); Stebbins (2003).		

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EXHIBIT E: SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND ARCHAEOLOGICAL SITES

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit E reads as follows:

"Describe any existing scenic areas, historic sites and structures or archaeological sites in the vicinity of the proposed facilities and state the effects, if any, the proposed facilities will have thereon."

Exhibit E includes summaries of existing visual and cultural resources, as well as the potential impacts the Project may have on each resource.

SCENIC AREAS AND VISUAL RESOURCES

Overview

This section of Exhibit E addresses scenic areas and visual resources, including visual quality objectives (VQO), and visibility related to the construction, operation, and maintenance of the proposed substation and 345kV interconnection. The visual resource study was based on the Visual Management System (National Forest Landscape Management, Volume 2, Handbook Number 462, 1974), and included a data inventory and assessment of potentially affected visual resources associated with the construction and operation of the Project. Data sources included existing land use plans, aerial photography, USFS VQO data, and field reconnaissance. Data inventory included the determination of VQO, VQO compliance, and viewing conditions within the study area. The text below provides a description of the affected visual resource environment for the Project, followed by a description of the potential impacts to visual resources.

Existing Conditions – Proposed Route

The Project is located within the Basin and Range Province in central Arizona (Fenneman 1931). The Basin and Range Province is distinguished by isolated, roughly parallel mountain ranges separated by closed desert basins. The Tonto character type, a further delineation of the Basin and Range, is located in central Arizona and comprises two subtypes, the Sonoran Arizona Uplands and the Upper Tonto. The topographic character within the study area is predominately flat to slightly rolling tablelands bisected by creeks. The predominate vegetation identified within the study area is defined as semi-desert grassland composed of a variety of species, especially grasses, and prickly pear on the tablelands (Brown and Lowe 1978). Cultural modifications include the existing Four Corners–Cholla–Pinnacle Peak 345kV transmission lines, a 69kV sub-transmission line, SR 87, FR 184, FR 379, FR 379B, FR 380, and other paved and unpaved roads.

Visual Quality Objectives

The Project is entirely within the TNF, which is currently managed by the TNF Land and Resource Management Plan (RMP). This plan directs that the scenic qualities of forest landscapes be recognized and emphasized in all resource planning and management activities. The primary objectives of scenery management, referred to as VQOs in the RMP, are to maintain natural appearance and minimize alterations that contrast with the natural elements of the forest landscapes. As outlined in the Visual Management System Handbook (Number 462), variety classes, distance zones, and sensitivity levels were inventoried for all TNF land and combined through a matrix system to determine a VQO, which in turn specifies how much visible manmade alteration of a landscape is permissible.

The current RMP VQO designation for the Project area is Partial Retention. The VQO of Partial Retention allows management activities to be apparent, but requires that the landscape remain at least predominately natural. Activities may repeat form, line, color, or texture common to the characteristic landscapes; however, changes in the size, amount, intensity, direction, and pattern of landscape elements should remain visually subordinate to the characteristic landscape. Variety Class for the majority of the Project area is classified as Class C landscapes, where variety is minimal and isolated areas of Class B landscapes which is associated with moderate variety. Variety Class A is not present in the Project area. Per Forest Service Landscape Architect, Kim Vander Hoek, visual resources within the Project area generally meet the prescribed VQO level of Partial Retention as defined in the Forest plan.

Sensitive Viewpoints

Visual sensitivity reflects the degree of concern for change in the visual character of a landscape. For this Project, residential and recreational viewers, as well as all travelway viewers, were identified as high-sensitivity viewers; this is consistent with TNF sensitivity level classifications for the Project study area. Visibility reflects how the Project would be seen (i.e., residential views, recreational views, or travel route views) and what distance the viewer is from a particular viewpoint or viewing area. The Forest Service VQO system provides the foundation for defining distance zones, as described in USDA handbook number 462. The Forest Service typically defines distance zones as foreground (0-3 miles), middleground (3-5 miles), and background (5+ miles).

Residential development occurs 1.5 to 3 miles from the proposed substation. Recreation areas typically include picnic areas, campgrounds, trails, scenic overlooks, rest areas, or other recreational facilities. The Deer Creek trailhead is located within the Project study area, approximately 2.5 miles from the proposed substation. The Barnhardt trailhead, located approximately 5 miles west of the Project, provides recreation access into the Mazatzal Wilderness Area. Views associated with dispersed recreation exist throughout the study area, concentrated mainly on forest service roads and trails. State Route 87 is attributed with high sensitivity, due to adjacent scenery that ranges from Retention to Partial Retention. Travelway viewers and dispersed recreation viewers would have distant, open views of the Mazatzal Mountains. FR 184, which parallels Rye Creek, is a maintained forest service road within ½ mile of the Project.

Potential Impacts

The proposed substation and ancillary facilities would be visible from SR 87 intermittently for approximately 4 miles and the Project would be viewed in the foreground distance zone (approximately 1 to 2 miles). The Project would be back-dropped by adjacent mountainous terrain and viewed in the context of existing transmission lines for viewers along SR 87; therefore impacts are anticipated to be reduced. Potential foreground (approximately 0.5 to 3 miles) views of the Project from residences near FR 184 are anticipated; however, the Project would be viewed in the context of two existing 345kV transmission lines, reducing impacts. Lower impacts are anticipated for dispersed recreationists with potential views of the Project in various viewing thresholds (i.e., distances) because the Project would be back-dropped by adjacent terrain and viewed in the context of existing modifications including SR 87, development, and utility corridor. The Project would be completely screened by terrain for viewers at the Deer Creek Trailhead; therefore impacts are not anticipated. The Barnhardt Trailhead and trail are located in the background distance zone (5 miles and beyond) and the Project would be partially to completely screened by terrain; therefore impacts are anticipated to be minimal. Travelers on FR 379, FR 379B, and FR 380 would have foreground views of the Project and would be minimally screened by topography and vegetation. The Tonto National Forest Landscape Architect was consulted to develop mitigation measures to reduce visibility of the Project for VQO compliance. The Project would pose short- and long-term impacts to the visual quality of the landscape, although the VQO of Partial Retention would be met with appropriate mitigation measures.

HISTORIC SITES AND STRUCTURES, AND ARCHAEOLOGICAL SITE

As required by the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, the potential impacts of the proposed Mazatzal Substation on historic sites and structures and archaeological sites were assessed. That assessment is documented in a separate report (provided to the Arizona State Historic Preservation Office [SHPO] and interested tribes) and is summarized in this exhibit. The assessment, in support of the EA included in Exhibit B-1, was also prepared to provide the SHPO an opportunity to review and comment on the Commission's actions that affect properties listed in or eligible for the Arizona Register.

To be eligible for the Arizona Register, properties must be at least 50 years old (less, if they have special significance) and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They also must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of four criteria:

- Criterion A: be associated with significant historical events or trends
- Criterion B: be associated with historically significant people
- Criterion C: have distinctive characteristics of a style or type, or have artistic value, or represent a significant entity whose components may lack individual distinction
- Criterion D: have yielded or have potential to yield important information (Arizona Administrative Code, Title 12, Chapter 8, Article 3, R12-8-302)

Records Review

A records review was conducted to identify any prior research or previously recorded sites located within a 1-mile radius of the Class III survey area. The original records review, in support of the Project, was conducted on April 3, 2006, with subsequent records reviews taking place on May 19 and September 30, 2008, and in September 2009. The reviews involved an examination of records maintained by the following institutions:

- SHPO
- National Register of Historic Places (NRHP)
- Arizona State Register of Historic Places
- TNF
- AZSITE (http://www.azsite.arizona.edu) electronic database (includes records from Arizona State University, Arizona State Museum [ASM], SHPO, and Museum of Northern Arizona)
- Bureau of Land Management (BLM) General Land Office (GLO) maps
- Arizona Department of Transportation Historic Preservation Team Portal

The records review relied on the AZSITE Cultural Resources Inventory, a geographical information system database that includes records of the AZSITE Consortium members (ASM, Arizona State University, Museum of Northern Arizona, and SHPO) and other participating agencies such as the BLM (AZSITE Consortium 2010). The AZSITE database includes information about properties listed in the Arizona Register, as well as tens of thousands of other cultural resources recorded by thousands of researchers for a variety of purposes over many decades. Reports of selected prior studies were reviewed to supplement the AZSITE information. GLO plats on file at the BLM also were reviewed for indications of potential unrecorded historic resources.

The records review identified 43 previous cultural resource studies that were conducted within 1 mile of the survey areas (Table E-1). These studies were conducted to support a variety of projects such as road improvements, transmission lines, pipelines, trail and fence construction, and archaeological site stabilization. A portion of the Mazatzal Substation survey area had been previously surveyed by Archaeological Research Services (ARS) (Stone 1986), but because the survey was more than 20 years old EPG resurveyed the area on March 26, 2010.

A total of 239 previously recorded sites have been identified within a 1-mile radius of the survey areas (Table E-2). Twenty-eight of these previously recorded sites have been recommended or determined as eligible for the NRHP, 5 sites have been recommended or determined not eligible for the NRHP, and the remainder have not been evaluated for listing on the NRHP. There were 35 previously recorded sites in the area of potential effect; 27 sites were relocated during the pedestrian surveys.

Review of the historic GLO plat map for Township 8 North, Range 10 East, filed on February 23, 1909, shows the Globe–Payson Road (SR 188) crossing the western Project area in Sections 4 and 8. This road alignment corresponds to the modern SR 87, which has been extensively modified from its historic state. Crossing the Project area through Sections 3 and 4 is

Rye Creek Road/FR 184. This road designates the southwestern edge of one of the parcels surveyed as a possible location for the substation.

Inventory Survey

The original surveys of four potential sites for the substation, access roads, routes for the 69/21kV subtransmission lines, and a construction yard took place in March 2006, and March and April 2009. In September 2009, EPG was asked to survey 25 feet from the centerline on each side of FR 379. In February and March of 2010, APS requested that EPG survey an additional access road, a realignment of the subtransmission line route, and parcels for acceleration and deceleration lanes along SR 87. Finally, in May 2010, EPG returned to the Project area to complete recording of three sites.

A total of 32 sites (one of which combined two previously recorded sites) were identified in the survey areas. These include 26 previously recorded and 6 newly recorded sites (Table E-3). The most commonly observed site type was a small single-room structure with an associated artifact scatter. These sites included artifact scatters, roasting pits, and small habitations. Under the terms of the Region 3 Programmatic Agreement between the TNF and the Arizona SHPO signed in 2003, the sites are recommended to be eligible for listing on the NRHP under Criterion D.

Three sites could potentially be impacted by the Project and ancillary activities, and will either be mitigated through testing or avoided (Table E-4). One site, AR-03-12-06-2707, was identified in the substation area. Two sites, AR-03-12-06-1403 and AR-03-12-06-1425, were recorded along FR 379, which will be improved and used as an access road during the Project. It was recommended that impacts to these historic properties be mitigated through implementation of a Historic Properties Treatment Plan (HPTP) that was developed in consultation with the TNF archaeologist.

Historic Properties Treatment Plan

In order to avoid and/or mitigate adverse effects to historic properties, a HPTP was developed. The proposed treatment plan should be carried out prior to commencing construction. The Project will have adverse effects to three NRHP-eligible properties (AR-03-12-06-1403, AR-03-12-06-1425, and AR-03-12-06-2707). It is recommended that data recovery be conducted at these three historic properties prior to construction, as outlined in the HPTP. All three sites will undergo detailed mapping and surface collection, but the extent of excavation efforts varies by site.

Native American Consultation

TNF Archaeologist Scott Wood, on behalf of the TNF, initiated consultation with the Arizona tribes with a letter requesting comments. The letter was sent to all Arizona tribes that might have an interest in the Project. In August 2010, Scott Wood also sent representatives of the Arizona tribes copies of the cultural resources inventory report and the HPTP, with a request for review and comments. Further details of tribal consultation efforts are provided in Exhibit J.

Impact Assessment

An undertaking can have an effect on historic sites and structures and archaeological sites when it alters the characteristics of the property that qualify it for inclusion on the NRHP. Effects are adverse when they diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:

- physical destruction of or damage to all or part of the property
- removal of the property from its historic location
- change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic characteristics
- neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe
- transfer, lease, or sale of property out of government ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance

Direct Impacts

The Project and ancillary facilities will have adverse effects to three NRHP-eligible properties (AR-03-12-06-1403, AR-03-12-06-1425, and AR-03-12-06-2707). It is recommended that data recovery be conducted at these three historic properties prior to construction, as outlined in the HPTP. All three sites will undergo detailed mapping and surface collection, but extent of excavation efforts varies by site.

Indirect Impacts

Because the archaeological sites recorded in the study area have Arizona Register and NRHP significance for their information value under Criterion D, they would not be affected by indirect effects such as visual changes of the landscape.

Conclusion

A total of 32 sites were identified during the Mazatzal Substation survey. Six Register-eligible sites could potentially be impacted by Project activities, and will either be mitigated through testing or avoided. A HPTP was developed in consultation with the TNF archaeologist in order to mitigate the impacts to these historic properties. The HPTP recommends that data recovery be conducted at three of the historic properties prior to construction. For the other three sites, it is recommended that they be barricaded and monitored by a qualified archaeologist.

Table E-1 – Prior Cultural Resource Studies				
Project Name	**Project Reference Number[1]**	**Acreage**	**Sites in Study Area[2]**	**Reference**
No Report	70-05.TNF	Unknown	No Data	No Report
Arizona Game and Fish Horse Pasture Fence	76-13.TNF	Unknown	AR-03-12-06-0228	Wood (1977)
No Report	77-11.TNF	Unknown	No Data	No Report
Rye Creek Materials Pit	77-22.TNF	43	None	Tjaden (1977)
Mountain Bell Payson	82-34.TNF/ 82-80.TNF	Unknown	20	Yablon (1982)
Deer Creek Village	82-50.TNF	Unknown	None	Stoyer (1982)
Materials Pits #7634 and #7635	82-93.TNF/ 1982-103.ASM	53	None	Perrine (1982)
Brady Pipeline	84-16.TNF	Unknown	AR-03-12-06-1143	Snell (1984a)
Ridge Pipeline	84-19.TNF	4.85	None	Snell (1984b)
Brady Well and Pipeline	84-75.TNF	3.7	None	Snell (1984c)
Electric Inventory	85-01.TNF	Unknown	No Data	Service CRS Clearance Form
Aggregate Materials Pit 8738	86-45.TNF	Unknown	AR-03-12-06-1038	Stone and Mitchell (1985)
Oak Spring	86-200.TNF	12.1	None	Snell (1986)
SR 87 Realignment	86-215.TNF	Unknown	9	Stone (1986)
Black Mountain/Hardt Creek	86-284.TNF	6	AR-03-12-06-1143	Snell (1987a)
Brady Well	87-29.TNF	1	None	Snell (1987b)
Deer Creek Trailhead	87-98.TNF	2	None	Karkula (1987a)
Orotex Drill Hole	87-206.TNF	1	None	Karkula (1987b)
No Report	87-220F.TNF	Unknown	No Data	Inventory Standards and Accounting Form
SR 87 Supplemental	87-273.TNF	90	None	Stone (1987)
Ridge Pipeline Extension	87-318.TNF	5	None	Snell (1987c)
No Report	88-248D.TNF	Unknown	No Data	No Report
Deer Creek Trail Relocation	88-387.TNF	6	None	Snell (1988)
Maintenance for Cholla 345kV Line	89-154.TNF/ 1989-57.ASM	Unknown	AR-03-12-06-1587	Hoffman (1989)
SR 87/SR 188 Junction Rest Area	89-263.TNF	30	NA17230, AR-03-12-06-1116, AR-03-12-06-1614, AR-03-12-06-1615, AR-03-12-06-1616, AZ O:15:27 (ARS)/ Payson to Globe Rd	Curtis (1989)
SR 87/SR 188 Junction Alternate Rest Area	90-57.TNF	90	AZ O:15:110 (ASM), AZ O:15:111 (ASM), AZ O:15:112 (ASM)	Stone (1990)
Shake Ridge Pipeline	90-90.TNF	5	None	Sevy and Zamora (1990)

Table E-1 – Prior Cultural Resource Studies				
Project Name	**Project Reference Number[1]**	**Acreage**	**Sites in Study Area[2]**	**Reference**
Rye Creek Ruin Stabilization	90-197C.TNF	Unknown	AR-03-12-06-1435 AR-03-12-06-1436 AR-03-12-06-1437 AR-03-12-06-1438	Johnson (1992)
FR 1438 Maintenance	91-256.TNF	12	7	Johnson and Germick (1991)
SR 188 Improvement Project	92-56.TNF	170.7	None	Hoffman (1991)
No Report	92-266	Unknown	No Data	TNF
No Report	94-187	Unknown	No Data	TNF
Rye Creek Riparian Fence	98-16.TNF	10	None	Dorathy and Germick (1998)
Tonto Basin–Roosevelt Lake 21kV Transmission Line	99-36.TNF	36	AR-03-12-06-2527, AR-03-12-06-2528, AR-03-12-06-2529, AZ O:15:161 (ASM)	Moreno (1999)
SR 188, MP 275.9-276.7	03-64.TNF	25	None	Weaver (2002)
Box Ruin Survey	03-86.TNF	Unknown	AR-03-12-06-2615 AR-03-12-06-2616	Germick (2004)
No Report	05-01.TNF	Unknown	No Data	TNF
Deer Creek Storage and Pipeline	06-103.TNF	1	None	Dorathy (2006)
Cultural Overview	95-9.CDA	Unknown	AR-03-12-06-54	Gregory (1996)
The Rye Creek Project	11.CDA	NA	AZ O:15:70 (ASM), AZ O:15:71 (ASM)	Elson and Craig (1992)
SR 87: Ord Mine Road to SR 188	1980-238.ASM	909	AR-03-12-06-520–7	Ferg and Dongoske (1980)
Mazatzal Rest Area Data Recovery	1996-370.ASM	31	AZ O:15:110 (ASM), AZ O:15:111 (ASM), AZ O:15:112 (ASM)	Bilsbarrow and Woodall (1997)
SR 87, MP 228.7-235.7	2002-43.ARS	360	AR-03-12-06-1645, AZ AA:6:63 (ASM)	Goldstein and Coriell (2003)

[1]CDA=Center for Desert Archaeology; [2]All sites are USFS unless otherwise indicated.

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-54/ AR-03-12-06-706/ NA9584/ AZ O:15:1 (ASM)/ Rye Creek Ruins	Prehistoric village	No Data	Recommended Eligible	Gregory (1996)
AR-03-12-06-114	Prehistoric structure and artifact scatter	8 x 8	Not Evaluated	TNF
AR-03-12-06-228	Prehistoric structure and artifact scatter	300 x 300	Recommended Eligible	Wood (1977)
AR-03-12-06-335	Prehistoric structure and artifact scatter	No Data	Not Evaluated	TNF
AR-03-12-06-520/ AZ O:15:74 (ASM)	Prehistoric structure and artifact scatter	26 x 14	Not Evaluated	Ferg and Dongoske (1980)
AR-03-12-06-521/ AZ O:15:73 (ASM)	Prehistoric lithic scatter and agricultural features	32 x 28	Not Evaluated	Ferg and Dongoske (1980)
AR-03-12-06-522/NA16920	Prehistoric structure, artifact scatter, agricultural features	50 x 25	Not Evaluated	Ferg and Dongoske (1980)
AR-03-12-06-523/ AZ O:15:77 (ASM)	Prehistoric village	90 x 65	Not Evaluated	Ferg and Dongoske (1980)
AR-03-12-06-524/NA17228	Prehistoric structure and artifact scatter	10 x 10	Not Evaluated	Ferg and Dongoske (1980)
AR-03-12-06-525/NA17230/ AZ O:15:71 (ASM)	Prehistoric structure and artifact scatter	56 x 37	Not Evaluated	Curtis (1989); Elson and Craig (1992); Ferg and Dongoske (1980)
AR-03-12-06-526/ AZ O:15:70 (ASM)	Prehistoric structure and artifact scatter	12 x 9	Unknown	Ferg and Dongoske (1980); Elson and Craig (1992); Stone (1986)
AR-03-12-06-527/ AZ O:15:51 (ASM)	Prehistoric structure and artifact scatter	30 x 15	Not Evaluated	Ferg and Dongoske (1980)
AR-03-12-06-538	Prehistoric village	183 x 165	Recommended Eligible	TNF
AR-03-12-06-539	Prehistoric village	124 x 89	Recommended Eligible	TNF
AR-03-12-06-647	**Prehistoric structure and artifact scatter**	**144 x 84**	**Recommended Eligible**	**Yablon (1982)**
AR-03-12-06-648	**Prehistoric structure and artifact scatter**	**20 x 30**	**Not Evaluated**	**Yablon (1982)**
AR-03-12-06-649	**Prehistoric structure and artifact scatter**	**26 x 30**	**Not Evaluated**	**Yablon (1982)**
AR-03-12-06-650	Prehistoric structure and artifact scatter	21 x 20	Not Evaluated	Yablon (1982)
AR-03-12-06-651	Prehistoric structure and artifact scatter	10 x 20	Not Evaluated	Yablon (1982)
AR-03-12-06-652	Prehistoric structure and artifact scatter	15 x 20	Not Evaluated	Yablon (1982)

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-653	Prehistoric structure and artifact scatter	30 x 105	Not Evaluated	Yablon (1982)
AR-03-12-06-654	Prehistoric structure and artifact scatter	20 x 63	Not Evaluated	Yablon (1982)
AR-03-12-06-655	Prehistoric structure and artifact scatter	15 x 30	Not Evaluated	Yablon (1982)
AR-03-12-06-656	Prehistoric artifact scatter	13 x 8	Not Evaluated	Yablon (1982)
AR-03-12-06-657	Prehistoric structure and artifact scatter	30 x 30	Not Evaluated	Yablon (1982)
AR-03-12-06-658	Prehistoric structure and artifact scatter	80 x 25	Not Evaluated	Yablon (1982)
AR-03-12-06-659	Prehistoric structure and artifact scatter	10 x 10	Not Evaluated	Yablon (1982)
AR-03-12-06-662	Prehistoric structure and artifact scatter	35 x 40	Not Evaluated	Yablon (1982)
AR-03-12-06-696	Prehistoric structure and artifact scatter	4 x 3	Not Evaluated	Snell (1984)
AR-03-12-06-708	Prehistoric structure and artifact scatter	30 x 30	Recommended Eligible	TNF
AR-03-12-06-709	Prehistoric structure and artifact scatter	50 x 50	Recommended Eligible	TNF
AR-03-12-06-710	Prehistoric structure and artifact scatter	150 x 40	Recommended Eligible	TNF
AR-03-12-06-711	Prehistoric structure and artifact scatter	20 x 20	Recommended Eligible	TNF
AR-03-12-06-712	Prehistoric artifact scatter and roasting pit	No Data	Recommended Eligible	TNF
AR-03-12-06-713	Prehistoric structure and artifact scatter	300 x 200	Recommended Eligible	TNF
AR-03-12-06-727/ NA17238	Prehistoric structure and artifact scatter	10 x 7	Requires Testing	Whitlock (1982)
AR-03-12-06-1038	Prehistoric artifact scatter and agricultural features	No Data	Eligible	Stone and Mitchell (1985)
AR-03-12-06-1039	Prehistoric structure	20 x 20	Eligible	TNF
AR-03-12-06-1040	Prehistoric structure	30 x 20	Eligible	TNF
AR-03-12-06-1041	Prehistoric structure	8 x 7	Eligible	TNF
AR-03-12-06-1042	Prehistoric agricultural features	2 x 2	Eligible	TNF
AR-03-12-06-1043	Prehistoric structure and artifact scatter	20 x 20	Eligible	TNF
AR-03-12-06-1103	Prehistoric structure and artifact scatter	46 x 46	Requires Testing	Stone (1986)
AR-03-12-06-1104	Structure	14 x 11	Eligible	Stone (1986)

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-1105	Prehistoric structure and artifact scatter	10 x 8	Eligible	Stone (1986)
AR-03-12-06-1109	Prehistoric structure and artifact scatter	12 x 9	Requires Testing	Stone (1986)
AR-03-12-06-1110	Prehistoric structure and artifact scatter	15 x 15	Recommended Eligible	Stone (1986)
AR-03-12-06-1115	Historic trash	No Data	Recommended Not Eligible	Stone (1986)
AR-03-12-06-1116	Prehistoric structure	4 x 4	Requires Testing	Curtis (1989); Stone (1986)
AR-03-12-06-1143	Prehistoric structure and artifact scatter	3 x 5	Recommended Eligible	Snell (1984a)
AR-03-12-06-1174	Prehistoric structure and artifact scatter	53 x 44	Recommended Eligible	TNF
AR-03-12-06-1175	Unknown	No Data	Not Evaluated	TNF
AR-03-12-06-1399	Prehistoric structure and artifact scatter	3 x 3	Not Evaluated	TNF
AR-03-12-06-1400	Prehistoric structure and artifact scatter	21 x 21	Not Evaluated	TNF
AR-03-12-06-1401	Prehistoric structure and artifact scatter	3 x 3	Not Evaluated	TNF
AR-03-12-06-1402	Prehistoric structure and artifact scatter	20 x 10	Not Evaluated	TNF
AR-03-12-06-1403	**Prehistoric structure and artifact scatter**	**No Data**	**Not Evaluated**	**TNF**
AR-03-12-06-1404	Prehistoric structure and artifact scatter	20 x 10	Not Evaluated	TNF
AR-03-12-06-1405	Prehistoric structure and artifact scatter	5 x 5	Not Evaluated	TNF
AR-03-12-06-1406	Prehistoric structure and artifact scatter	10 x 10	Not Evaluated	TNF
AR-03-12-06-1408	Prehistoric structure and artifact scatter	10 x 9	Not Evaluated	TNF
AR-03-12-06-1409	Prehistoric structure and artifact scatter	5 x 5	Not Evaluated	TNF
AR-03-12-06-1410	Prehistoric structure and artifact scatter	8 x 14	Not Evaluated	TNF
AR-03-12-06-1411	Prehistoric structure and artifact scatter	8 x 9	Not Evaluated	TNF
AR-03-12-06-1412	Prehistoric structure and artifact scatter	No Data	Not Evaluated	TNF
AR-03-12-06-1413	Prehistoric structure and artifact scatter	20 x 20	Not Evaluated	TNF
AR-03-12-06-1414	Prehistoric structure and artifact scatter	30 x 30	Not Evaluated	TNF

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-1415	Prehistoric structure and artifact scatter	5 X 5	Not Evaluated	TNF
AR-03-12-06-1416	Prehistoric structure and artifact scatter	5 X 5	Not Evaluated	TNF
AR-03-12-06-1417	Prehistoric structure and artifact scatter	9 x 6	Not Evaluated	TNF
AR-03-12-06-1418	Prehistoric structure and artifact scatter	20 x 20	Not Evaluated	TNF
AR-03-12-06-1419	Prehistoric structure and artifact scatter	5 x 4	Not Evaluated	TNF
AR-03-12-06-1420	Prehistoric structure and artifact scatter	3 x 4	Not Evaluated	TNF
AR-03-12-06-1421	Prehistoric structure and artifact scatter	20 x 20	Not Evaluated	TNF
AR-03-12-06-1422	Structure	3 x 3	Not Evaluated	TNF
AR-03-12-06-1423	Prehistoric structure and artifact scatter	5 x 4	Not Evaluated	TNF
AR-03-12-06-1424	Prehistoric structure	5 x 5	Not Evaluated	TNF
AR-03-12-06-1425	**Prehistoric structure and artifact scatter**	**3 x 8**	**Not Evaluated**	**TNF**
AR-03-12-06-1426	Prehistoric structure and artifact scatter	3 x 3	Not Evaluated	TNF
AR-03-12-06-1427	Prehistoric structure and artifact scatter	20 x 20	Not Evaluated	TNF
AR-03-12-06-1428	Prehistoric structure and artifact scatter	12 x 12	Not Evaluated	TNF
AR-03-12-06-1429	Prehistoric structure and artifact scatter	10 x 6	Not Evaluated	TNF
AR-03-12-06-1430	Prehistoric structure and artifact scatter	No Data	Not Evaluated	TNF
AR-03-12-06-1431	"Ground to air" sign	20 x 10	Not Evaluated	TNF
AR-03-12-06-1432	Prehistoric structure and artifact scatter	20 x 15	Not Evaluated	TNF
AR-03-12-06-1435	Prehistoric structure and artifact scatter	150 x 150	Recommended Eligible	Johnson (1992)
AR-03-12-06-1436	Prehistoric structure and artifact scatter	70 x 45	Not Evaluated	Johnson (1992)
AR-03-12-06-1437	Prehistoric structure and artifact scatter	40 x 50	Recommended Eligible	Johnson (1992)
AR-03-12-06-1438	Prehistoric structure and artifact scatter	60 x 60	Not Evaluated	Johnson (1992)
AR-03-12-06-1533	Prehistoric structure and artifact scatter	3 x 3	Not Evaluated	TNF
AR-03-12-06-1534	Prehistoric structure and artifact scatter	6 x 6	Not Evaluated	TNF

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-1535	Prehistoric structure and artifact scatter	8 x 5	Not Evaluated	TNF
AR-03-12-06-1536	Prehistoric structure	12 x 7	Not Evaluated	TNF
AR-03-12-06-1587	Prehistoric artifact scatter	70 x 30	Recommended Not Eligible	Hoffman (1989)
AR-03-12-06-1614	Prehistoric structure and artifact scatter	9 x 8	Requires Testing	Curtis (1989)
AR-03-12-06-1615	Historic Payson to Globe Road	565 x 3	Requires Testing	Curtis (1989)
AR-03-12-06-1616	Historic erosion control	13 x 2	Requires Testing	Curtis (1989)
AR-03-12-06-1645/ AZ O:15:111(ASM)	Prehistoric structure and artifact scatter	60 x 58	Determined Not Eligible	Bilsbarrow and Woodall (1997); Goldstein and Coriell (2003); Stone (1990)
AR-03-12-06-2216	Prehistoric rock alignment	20 x 25	Not Evaluated	TNF
AR-03-12-06-2218	Prehistoric structure	25 x 34	Not Evaluated	TNF
AR-03-12-06-2219	Prehistoric structure and artifact scatter	20 x 20	Not Evaluated	TNF
AR-03-12-06-2220	Prehistoric roasting pit and artifact scatter	22 x 20	Not Evaluated	TNF
AR-03-12-06-2221	Agriculture	2 x 2	Not Evaluated	TNF
AR-03-12-06-2223	Prehistoric structure and artifact scatter	100 x 25	Not Evaluated	TNF
AR-03-12-06-2226	Prehistoric structure	12 x 15	Not Evaluated	TNF
AR-03-12-06-2227	Prehistoric structure	25 x 11	Not Evaluated	TNF
AR-03-12-06-2228	Prehistoric structure and artifact scatter	26 x 26	Not Evaluated	TNF
AR-03-12-06-2229	Prehistoric agricultural features and artifact scatter	40 x 40	Not Evaluated	TNF
AR-03-12-06-2230	Prehistoric structure and artifact scatter	120 x 20	Not Evaluated	TNF
AR-03-12-06-2231	Prehistoric structure and artifact scatter	12 x 14	Not Evaluated	TNF
AR-03-12-06-2232	Prehistoric structure and artifact scatter	6 x 6	Not Evaluated	TNF
AR-03-12-06-2233	Prehistoric structure and artifact scatter	54 x 54	Not Evaluated	TNF
AR-03-12-06-2234	Prehistoric check dam	No Data	Not Evaluated	TNF
AR-03-12-06-2235	Prehistoric agricultural features	No Data	Not Evaluated	TNF
AR-03-12-06-2269	Prehistoric structure and artifact scatter	43 x 27	Not Evaluated	TNF
AR-03-12-06-2270	Prehistoric structure and artifact scatter	46 x 46	Not Evaluated	TNF

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-2271	Prehistoric artifact scatter	38 x 23	Not Evaluated	TNF
AR-03-12-06-2272	Prehistoric structure and artifact scatter	12 x 9	Not Evaluated	TNF
AR-03-12-06-2273	Prehistoric structure and artifact scatter	38 x 38	Not Evaluated	TNF
AR-03-12-06-2274	Prehistoric structure and artifact scatter	38 x 30	Not Evaluated	TNF
AR-03-12-06-2275	Prehistoric structure and artifact scatter	21 x 21	Not Evaluated	TNF
AR-03-12-06-2276	Prehistoric structure and artifact scatter	33 x 20	Not Evaluated	TNF
AR-03-12-06-2277	Prehistoric structure and artifact scatter	15 x 20	Not Evaluated	TNF
AR-03-12-06-2278	Prehistoric structure and artifact scatter	24 x 30	Not Evaluated	TNF
AR-03-12-06-2279	Prehistoric structure and artifact scatter	46 x 15	Not Evaluated	TNF
AR-03-12-06-2280	Prehistoric structure and artifact scatter	12 x 12	Not Evaluated	TNF
AR-03-12-06-2282	Prehistoric check dam	16 x 1	Not Evaluated	TNF
AR-03-12-06-2292	Prehistoric structure	5 x 6	Not Evaluated	TNF
AR-03-12-06-2293	Prehistoric structure	6 x 5	Not Evaluated	TNF
AR-03-12-06-2294	Prehistoric structure	8 x 7	Not Evaluated	TNF
AR-03-12-06-2295	Prehistoric structure and artifact scatter	15 x 45	Not Evaluated	TNF
AR-03-12-06-2296	Prehistoric structure	5 x 5	Not Evaluated	TNF
AR-03-12-06-2297	Prehistoric structure	6 x 4	Not Evaluated	TNF
AR-03-12-06-2298	Prehistoric structure and artifact scatter	1 x 2	Not Evaluated	TNF
AR-03-12-06-2299	Prehistoric structure	11 x 6	Not Evaluated	TNF
AR-03-12-06-2300	Prehistoric structure and artifact scatter	18 x 18	Not Evaluated	TNF
AR-03-12-06-2301	Prehistoric structure and artifact scatter	8 x 5	Not Evaluated	TNF
AR-03-12-06-2302	Prehistoric structure	6 x 6	Not Evaluated	TNF
AR-03-12-06-2303	Prehistoric structure	5 x 5	Not Evaluated	TNF
AR-03-12-06-2304	Prehistoric artifact scatter	7 x 6	Not Evaluated	TNF
AR-03-12-06-2305	Prehistoric structure	4 x 3	Not Evaluated	TNF
AR-03-12-06-2306	Prehistoric structure	3 x 3	Not Evaluated	TNF
AR-03-12-06-2307	Prehistoric structure	4 x 8	Not Evaluated	TNF
AR-03-12-06-2308	Prehistoric structure and artifact scatter	9 x 9	Not Evaluated	TNF

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-2309	Prehistoric structure	3 x 3	Not Evaluated	TNF
AR-03-12-06-2310	Prehistoric structure and artifact scatter	4 x 8	Not Evaluated	TNF
AR-03-12-06-2311	Prehistoric structure	5 x 5	Not Evaluated	TNF
AR-03-12-06-2312	Prehistoric structure	6 x 6	Not Evaluated	TNF
AR-03-12-06-2313	Prehistoric structure and artifact scatter	12 x 12	Not Evaluated	TNF
AR-03-12-06-2314	Prehistoric structure and artifact scatter	9 x 13	Not Evaluated	TNF
AR-03-12-06-2315	Prehistoric structure and artifact scatter	7 x 6	Not Evaluated	TNF
AR-03-12-06-2316	Prehistoric structure and artifact scatter	17 x 14	Not Evaluated	TNF
AR-03-12-06-2317	Prehistoric structure	5 x 5	Not Evaluated	TNF
AR-03-12-06-2318	Prehistoric structure and artifact scatter	21 x 6	Not Evaluated	TNF
AR-03-12-06-2319	Prehistoric structure and artifact scatter	27 x 38	Not Evaluated	TNF
AR-03-12-06-2320	Prehistoric artifact scatter	30 x 22	Not Evaluated	TNF
AR-03-12-06-2321	Structure	33 x 25	Not Evaluated	TNF
AR-03-12-06-2322	Prehistoric structure and artifact scatter	15 x 15	Not Evaluated	TNF
AR-03-12-06-2323	**Prehistoric structure**	**23 x 30**	**Not Evaluated**	**TNF**
AR-03-12-06-2324	Prehistoric structure and artifact scatter	23 x 23	Not Evaluated	TNF
AR-03-12-06-2325	Prehistoric structure and artifact scatter	15 x 6	Not Evaluated	TNF
AR-03-12-06-2326	**Prehistoric structure and artifact scatter**	**10 x 6**	**Not Evaluated**	**TNF**
AR-03-12-06-2327	**Prehistoric structure**	**7 x 3**	**Not Evaluated**	**TNF**
AR-03-12-06-2328	**Prehistoric structure**	**7 x 5**	**Not Evaluated**	**TNF**
AR-03-12-06-2329	Prehistoric structure and artifact scatter	23 x 23	Not Evaluated	TNF
AR-03-12-06-2330	Prehistoric rock alignment	7.6 x 7.6	Not Evaluated	TNF
AR-03-12-06-2331	**Prehistoric structure and artifact scatter**	**6 x 5**	**Not Evaluated**	**TNF**
AR-03-12-06-2332	**Prehistoric structure and artifact scatter**	**6 x 5**	**Not Evaluated**	**TNF**
AR-03-12-06-2333	**Prehistoric structure and artifact scatter**	**30 x 17**	**Not Evaluated**	**TNF**
AR-03-12-06-2334	Prehistoric structure and artifact scatter	30 x 26	Not Evaluated	TNF

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-2335	Prehistoric structure and artifact scatter	5 x 4	Not Evaluated	TNF
AR-03-12-06-2336	**Prehistoric structure and artifact scatter**	**23 x 23**	**Not Evaluated**	**TNF**
AR-03-12-06-2337	Prehistoric structure and artifact scatter	16 x 15	Not Evaluated	TNF
AR-03-12-06-2339	Prehistoric structure and artifact scatter	21 x 21	Not Evaluated	TNF
AR-03-12-06-2340	Prehistoric structure and artifact scatter	9 x 12	Not Evaluated	TNF
AR-03-12-06-2341	Prehistoric structure and artifact scatter	10 x 10	Not Evaluated	TNF
AR-03-12-06-2342	Prehistoric agricultural features and artifact scatter	30 x 15	Not Evaluated	TNF
AR-03-12-06-2343	Prehistoric structure and artifact scatter	10 x 9	Not Evaluated	TNF
AR-03-12-06-2344	Prehistoric structure and artifact scatter	9 x 8	Not Evaluated	TNF
AR-03-12-06-2345	Prehistoric structure	13 x 11	Not Evaluated	TNF
AR-03-12-06-2346	Prehistoric structure	12 x 10	Not Evaluated	TNF
AR-03-12-06-2347	Prehistoric agricultural features	6 x 1	Not Evaluated	TNF
AR-03-12-06-2348	Prehistoric structure and artifact scatter	12 x 12	Not Evaluated	TNF
AR-03-12-06-2349	Prehistoric structure and artifact scatter	20 x 20	Not Evaluated	TNF
AR-03-12-06-2350	Prehistoric structure and artifact scatter	34 x 34	Not Evaluated	TNF
AR-03-12-06-2351	Prehistoric structure	15 x 15	Not Evaluated	TNF
AR-03-12-06-2352	Prehistoric structure	21 x 21	Not Evaluated	TNF
AR-03-12-06-2353	Prehistoric structure	No Data	Not Evaluated	TNF
AR-03-12-06-2354	Prehistoric artifact scatter	18 x 18	Not Evaluated	TNF
AR-03-12-06-2355	Prehistoric structure	6 x 6	Not Evaluated	TNF
AR-03-12-06-2356	Prehistoric structure	90 x 60	Not Evaluated	TNF
AR-03-12-06-2357	Prehistoric structure	15 x 6	Not Evaluated	TNF
AR-03-12-06-2358	Prehistoric structure	18 x 9	Not Evaluated	TNF
AR-03-12-06-2359	Prehistoric structure	5 x 5	Not Evaluated	TNF
AR-03-12-06-2360	Prehistoric structure	No Data	Not Evaluated	TNF
AR-03-12-06-2361	Prehistoric structure	No Data	Not Evaluated	TNF
AR-03-12-06-2362	**Prehistoric structure**	**No Data**	**Not Evaluated**	**TNF**
AR-03-12-06-2363	**Prehistoric structure**	**No Data**	**Not Evaluated**	**TNF**

Table E-2 – Previously Recorded Sites				
Site Number	Description	Size (meters)	Eligibility	Reference
AR-03-12-06-2364	**Prehistoric structure**	**3 x 4**	**Not Evaluated**	**TNF**
AR-03-12-06-2365	**Prehistoric artifact scatter**	**30 x 30**	**Not Evaluated**	**TNF**
AR-03-12-06-2366	Prehistoric structure	21 x 18	Not Evaluated	TNF
AR-03-12-06-2367	Prehistoric structure	26 x 20	Not Evaluated	TNF
AR-03-12-06-2368	Prehistoric structure	21 x 15	Not Evaluated	TNF
AR-03-12-06-2369	Prehistoric structure	No Data	Not Evaluated	TNF
AR-03-12-06-2370	Prehistoric structure and artifact scatter	9 x 10	Not Evaluated	TNF
AR-03-12-06-2371	Prehistoric structure and artifact scatter	46 x 26	Not Evaluated	TNF
AR-03-12-06-2372	Prehistoric structure	27 x 24	Not Evaluated	TNF
AR-03-12-06-2373	**Prehistoric structure**	**7 x 11**	**Not Evaluated**	**TNF**
AR-03-12-06-2374	**Prehistoric structure**	**15 x 13**	**Not Evaluated**	**TNF**
AR-03-12-06-2375	**Prehistoric structure and artifact scatter**	**14 x 11**	**Not Evaluated**	**TNF**
AR-03-12-06-2376	**Prehistoric structure and artifact scatter**	**14 x 14**	**Not Evaluated**	**TNF**
AR-03-12-06-2377	**Prehistoric structure and artifact scatter**	**15 x 12**	**Not Evaluated**	**TNF**
AR-03-12-06-2378	**Prehistoric structure and artifact scatter**	**12 x 12**	**Not Evaluated**	**TNF**
AR-03-12-06-2379	**Prehistoric structure and artifact scatter**	**9 x 9**	**Not Evaluated**	**TNF**
AR-03-12-06-2380	**Prehistoric structure and artifact scatter**	**35 x 25**	**Not Evaluated**	**TNF**
AR-03-12-06-2381	Prehistoric structure and artifact scatter	8 x 6	Not Evaluated	TNF
AR-03-12-06-2394	Prehistoric structure and artifact scatter	45 x 110	Not Evaluated	TNF
AR-03-12-06-2398	Prehistoric structure and artifact scatter	3 x 4	Not Evaluated	TNF
AR-03-12-06-2399	Prehistoric structure and artifact scatter	25 x 2	Not Evaluated	TNF
AR-03-12-06-2400	Prehistoric structure	8 x 5	Not Evaluated	TNF
AR-03-12-06-2401	Prehistoric structure	10 x 10	Not Evaluated	TNF
AR-03-12-06-2402	Prehistoric structure and artifact scatter	20 x 20	Not Evaluated	TNF
AR-03-12-06-2403	Prehistoric structure	10 x 8	Not Evaluated	TNF
AR-03-12-06-2404	Prehistoric structure and artifact scatter	7 x 7	Not Evaluated	TNF
AR-03-12-06-2405	Prehistoric structure	No Data	Not Evaluated	TNF
AR-03-12-06-2406	Prehistoric structure and artifact scatter	2 x 2	Not Evaluated	TNF

Table E-2 – Previously Recorded Sites				
Site Number	**Description**	**Size (meters)**	**Eligibility**	**Reference**
AR-03-12-06-2407	Prehistoric structure	No Data	Not Evaluated	TNF
AR-03-12-06-2408	Prehistoric structure	70 x 10	Not Evaluated	TNF
AR-03-12-06-2409	Prehistoric structure	No Data	Not Evaluated	TNF
AR-03-12-06-2527	Prehistoric structure	**83 x 30**	**Recommended Eligible**	**Moreno (1999)**
AR-03-12-06-2528	Prehistoric structure	**10 x 10**	**Recommended Eligible**	**Moreno (1999)**
AZ AA:6:63(ASM)/ Beeline Highway	Historic road	4,870 x 10 in study area	Determined Eligible	Goldstein and Coriell (2003)
AZ O:15:27(ARS)/ Payson to Globe Rd	Historic road	535 x 3	Requires Testing	Curtis (1989); Stone (1989)
AZ O:15:110(ASM)	Prehistoric structure and artifact scatter	245 x 75	Recommended Eligible	Bilsbarrow and Woodall (1997); Stone (1990)
AZ O:15:112(ASM)	Prehistoric structure and artifact scatter	46 x 44	Determined Not Eligible	Bilsbarrow and Woodall (1997); Stone (1990)
AZ O:15:161(ASM)	Prehistoric structure	62 x 72	Recommended Not Eligible	AZSITE
NA17204	Prehistoric structure	21 x 20	Not Evaluated	Yablon (1982)
NA17205	Unknown	No Data	Not Evaluated	Unknown
NA17209	Unknown	No Data	Not Evaluated	Unknown
Sites in **Bold** were relocated during the current Project.				

Table E-3 – Sites Recorded During Mazatzal Substation Project				
Site Number	**Survey Area**	**Chronology**	**Description**	**Eligibility Recommendation**
AR-03-12-06-647	A	Classic	Multiple-room structure/Agricultural features	Eligible
AR-03-12-06-648	A	Early Classic	Multiple-room structure/Plaza/Artifact scatter	Eligible
AR-03-12-06-649	A	Early Classic	Multiple-room structure/Artifact scatter	Eligible
AR-03-12-06-1403	FR 379	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-1425	FR 379	Classic	Multiple-room structure/Agricultural features/Artifact scatter	Eligible
AR-03-12-06-2323	D	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2326	D	Late Classic	Multiple-room structure/Artifact scatter	Eligible
AR-03-12-06-2327	D	Late Classic	Multiple-room structure/Artifact scatter	Eligible
AR-03-12-06-2328	D	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2331	D	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2332	D	Classic	Single-room structure/Artifact scatter	Eligible

Table E-3 – Sites Recorded During Mazatzal Substation Project				
Site Number	**Survey Area**	**Chronology**	**Description**	**Eligibility Recommendation**
AR-03-12-06-2333	D	Classic	Wall/Artifact scatter	Eligible
AR-03-12-06-2336	D	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2362	D	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2363	D	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2364	D	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2365	D	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2373	C	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2374	C	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2375	C	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2376	C	Late Classic	Multiple-room structure/Artifact scatter	Eligible
AR-03-12-06-2377	C	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2378	C	Prehistoric	Roasting pit/Artifact scatter	Eligible
AR-03-12-06-2379	C	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2380	C	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2527/2528[1]	A	Classic	Habitation/Agricultural features/Artifact scatter	Eligible
AR-03-12-06-2707[2]	B and FR 379	Classic/ Historic/ Modern	Prehistoric structure, agricultural features, and artifact scatter/Historic/modern concrete	Eligible
AR-03-12-06-2708[2]	A	Early Classic	Multiple-room structure/Artifact scatter	Eligible
AR-03-12-06-2939[2]	B	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2940[2]	69/21kV	Classic	Single-room structure/Artifact scatter	Eligible
AR-03-12-06-2941[2]	69/21kV	Preclassic	Pit house/Artifact scatter	Eligible
AR-03-12-06-2942[2]	69/21kV	Classic	Artifact scatter	Eligible
[1]Sites AR-03-12-06-2527 and AR-03-12-06-2528 were combined into a single site; [2]Newly recorded sites.				

Table E-4 – Treatment of Historic Resources in Project Area of Potential Effect						
Site Number	**Time Period**	**Description**	**Eligibility**	**Project Component**	**Potential Impact(s)**	**Mitigation**
AR-03-12-06-1403	Classic Period	Structure/ Artifact Scatter	Eligible, Criterion D	Access road	Grading (cut and fill)	Detailed mapping, test excavation in structure
AR-03-12-06-1425	Classic Period	Structure/ Agricultural Field/ Artifact Scatter	Eligible, Criterion D	Access road	Grading (cut and fill)	Detailed mapping, test excavation in structure
AR-03-12-06-2707	Classic Period, Historic/ Modern	Structure/ Agricultural Field/ Artifact Scatter	Eligible, Criterion D	Substation footprint	Grading/ leveling	Detailed mapping, test excavation in structure, in clearing near historic feature, cross-section 1-3 rock features

REFERENCES

Lonardo, Cara
2010 *A Cultural Resource Survey for the Proposed Mazatzal Substation, Gila County, Arizona-Addendum A*. Environmental Planning Group, Phoenix.

Rowe, Robert, and Steven Shelley
2009 *A Cultural Resource Survey for the Proposed Mazatzal Substation, Gila County, Arizona. EPG Cultural Resource Services Technical Paper No. 2006-6.* Environmental Planning Group, Phoenix.

EXHIBIT F: RECREATIONAL PURPOSES AND ASPECTS

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit F reads as follows:

"State the extent, if any, the proposed site or route will be available to the public for recreational purposes, consistent with safety considerations and regulations and attach any plans the applicant may have concerning the development of the recreational aspects of the proposed site or route."

Exhibit F includes a summary of recreation uses, as well as the potential impacts the Project may have on recreation. For further information refer to the EA included as Exhibit B-1.

Recreational uses on TNF land within the study area are primarily of a dispersed nature, including hiking, wildlife viewing, bird-watching, OHV driving, and hunting.

Short-term impacts include the disturbance of land during construction of the Project, and potential restrictions on access to FR 379. Long-term impacts include the removal of approximately 41 acres for the Project from areas used for dispersed recreation. Because existing access (FR 379) would be upgraded, new access roads would not be necessary for the substation.

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EXHIBIT G: CONCEPTS OF PROPOSED FACILITIES

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit G-1 reads as follows:

"Attach any artist's or architect's conception of the proposed plan or transmission line structures and switchyards, which applicant believes may be informative to the committee."

Exhibit G-1 – Typical 345kV Structure
Exhibit G-2 – North Site Conceptual Layout

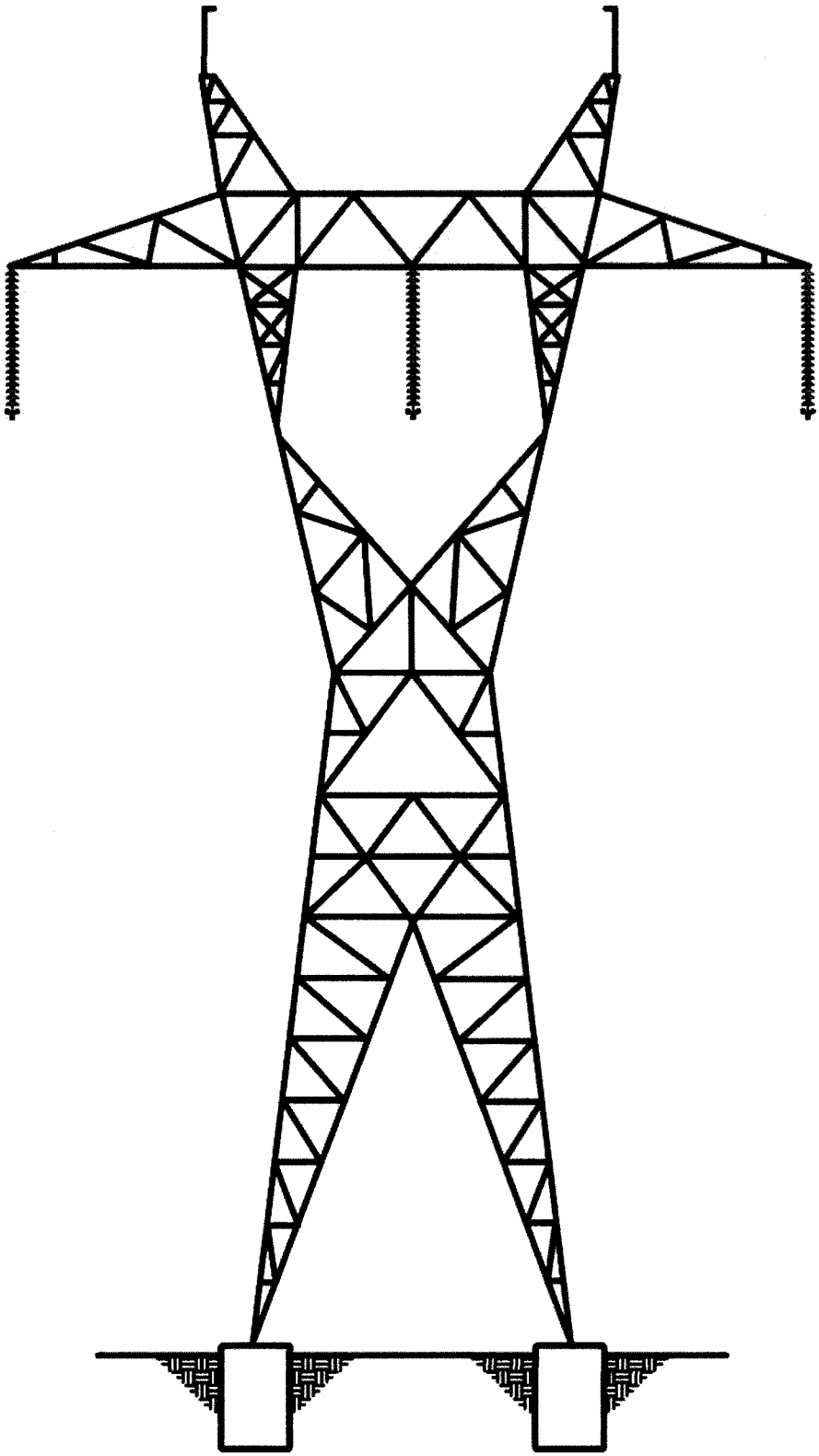

Exhibit G-1 – 345kV Structure

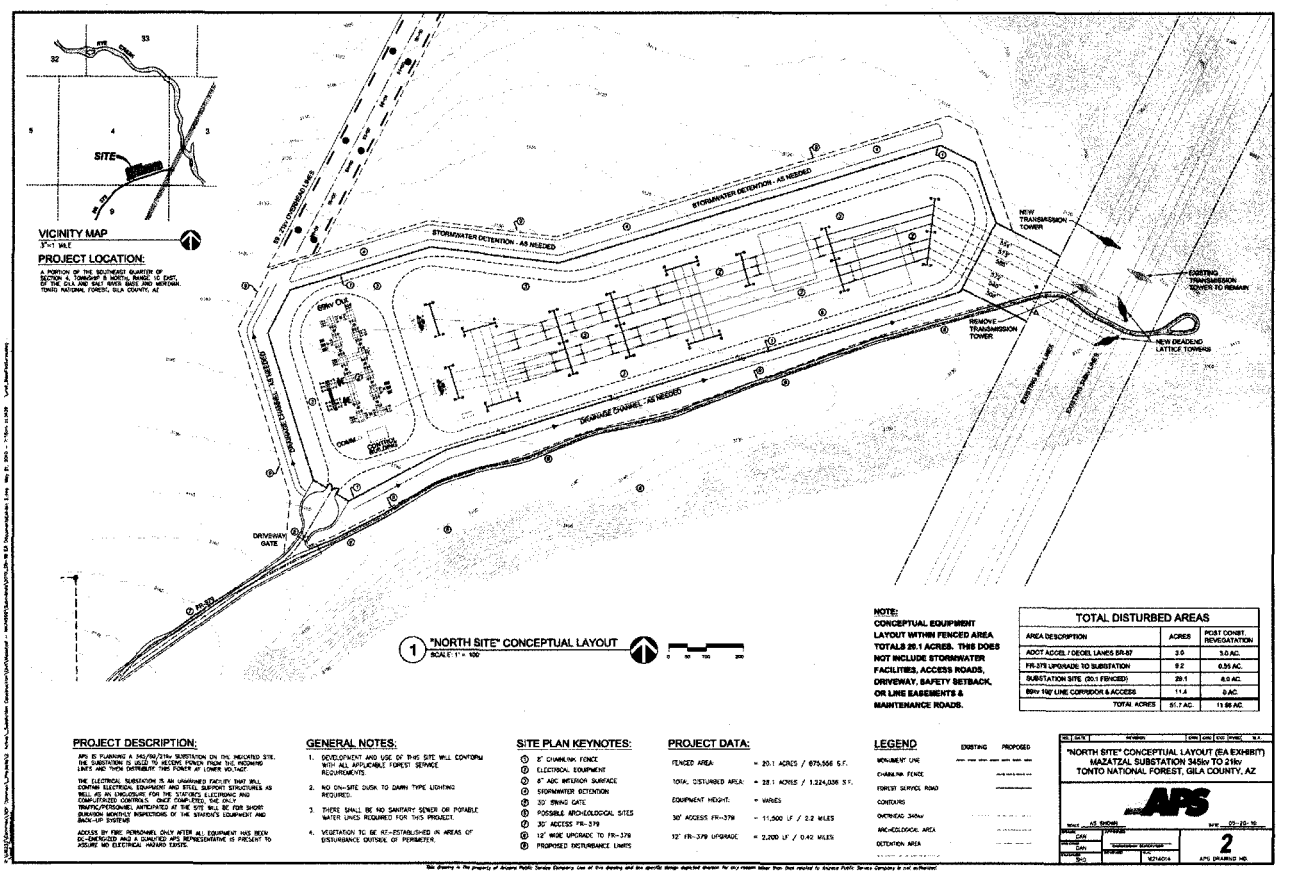

Exhibit G-2 – North Site Conceptual Layout

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EXHIBIT H: EXISTING PLANS

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit H reads as follows:

"To the extent applicant is able to determine, state the existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site or route."

Existing land use is mapped in Exhibit A-2, Future land use is mapped in Exhibit A-3, and discussed in Exhibit B. For further information refer to the EA, included as Exhibit B-1.

AGENCY AND PUBLIC COORDINATION

As part of the land use study for the Project, general and specific plans were gathered from federal, state, and local jurisdictions. A Project meeting and presentation was held with representatives from the TNF and Gila County, Arizona, during the planning process to gather information concerning planned development and potential issues. Initial federal agency coordination commenced in April 2007, when the Applicant met with TNF representatives to initiate the development of the EA. Subsequent meetings with the TNF Project Manager and resource representatives were held throughout the development of the EA.

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October 5, 2010

Troy Waskey, Recreation, Lands, and Minerals Staff
Tonto Basin Ranger District
Tonto National Forest
28079 N. AZ Hwy 188
Roosevelt, AZ 85545

Dear Mr. Waskey,

Arizona Public Service Company (APS) plans to file an Application for a Certificate of Environmental Compatibility (CEC) for the Mazatzal Substation and 345kV Interconnection Project with the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) in October 2010. The proposed project involves building a new 345/69/21kV substation, a short in and out connection off of the existing 345kV transmission lines and two new 69/21kV sub-transmission lines. The proposed project would provide reliable power and infrastructure to the communities in the Payson, Rye, and Tonto Basin areas of Gila County, Arizona. APS has been working with the Tonto National Forest on an Environmental Assessment for the project due to the project being entirely within the Forest, and a decision and Finding of No Significant Impact (FONSI) was issued on August 24, 2010. APS will request Siting Committee approval for a CEC for the loop in of the 345kV transmission lines and 345/69/21kV substation as the project has been determined as being environmentally compatible and would help to adequately address the project need.

Arizona Administrative Code Rule R14-2-219 directs an applicant to include in its Application an Exhibit H addressing the following:

"To the extent the applicant is able to determine, state the existing plans of the State, local government and private entities for other developments at or in the vicinity of the proposed site or routes."

This letter is a request for any information or comments that your organization wishes to provide regarding development plans for inclusion in the Application. Specifically, please advise me of any existing or future plans that may have changed since the completion of our data collection efforts in July 2010.

To allow your information to be included in the Application, please forward it to me no later than October 15, 2010, at the address above.

Thank you for your cooperation.

Sincerely,

Kevin C. Duncan, Project Manager
Environmental Planning Group

cc: Brad Larsen, APS Project Manager

4141 NORTH 32ND STREET
SUITE 102
PHOENIX, ARIZONA 85018
602 956-4370
602 956-4374
www.epgaz.com

October 5, 2010

Robert Gould, Community Development Director
Gila County Community Development
Guerrero Complex
1400 East Ash Street
Globe, AZ 85501

Dear Mr. Gould,

Arizona Public Service Company (APS) plans to file an Application for a Certificate of Environmental Compatibility (CEC) for the Mazatzal Substation and 345kV Interconnection Project with the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) in October 2010. The proposed project involves building a new 345/69/21kV substation, a short in and out connection off of the existing 345kV transmission lines and two new 69/21kV sub-transmission lines. The proposed project would provide reliable power and infrastructure to the communities in the Payson, Rye, and Tonto Basin areas of Gila County, Arizona. APS has been working with the Tonto National Forest on an Environmental Assessment for the project due to the project being entirely within the Forest, and a decision and Finding of No Significant Impact (FONSI) was issued on August 24, 2010. APS will request Siting Committee approval for a CEC for the loop in of the 345kV transmission lines and 345/69/21kV substation as the project has been determined as being environmentally compatible and would help to adequately address the project need.

Arizona Administrative Code Rule R14-2-219 directs an applicant to include in its Application an Exhibit H addressing the following:

"To the extent the applicant is able to determine, state the existing plans of the State, local government and private entities for other developments at or in the vicinity of the proposed site or routes."

This letter is a request for any information or comments that your organization wishes to provide regarding development plans for inclusion in the Application. Specifically, please advise me of any existing or future plans that may have changed since the completion of our data collection efforts in July 2010.

To allow your information to be included in the Application, please forward it to me no later than October 15, 2010, at the address above.

Thank you for your cooperation.

Sincerely,

Kevin C. Duncan, Project Manager
Environmental Planning Group

cc: Brad Larsen, APS Project Manager

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EXHIBIT I: ANTICIPATED NOISE AND INTERFERENCE WITH COMMUNICATION SIGNALS

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit I reads as follows:

"Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities."

Certain electromagnetic effects are inherently associated with overhead transmission of electrical power at extra high voltage. These effects are produced by the electric and magnetic fields of the transmission line with one of the primary effects being corona discharge. Corona effects are manifest as audible noise, radio interference, and television interference. These particular effects will be minimized by line location, line design, and construction practices. Results presented in this exhibit are based on the anticipated construction configuration for the line. The line will consist of a single span that connects the substation A-frame structure with dead-end structures that will be connected to the existing line.

CORONA

Corona is a luminous discharge due to ionization of the air surrounding a conductor and is caused by a voltage gradient, which exceeds the breakdown strength of air. Corona is a function of the voltage gradient at the conductor surface. This voltage gradient is controlled by engineering design and is a function of voltage, phase spacing, height of conductors above ground, phase geometry, and meteorological conditions. In particular, irregularities on the surface of the conductor such as nicks, scratches, contamination, insects, and water droplets, increase the amount of corona discharge. Consequently, during periods of rain and foul weather, corona discharges increase. For the transmission design considered for this Project, the maximum calculated voltage gradient at the conductor surface under normal conditions was 16.24 kVrms/cm. For comparison purposes, the breakdown strength of air is 21.1 kVrms/cm at 25 degrees Celsius and 76 mm barometric pressure.

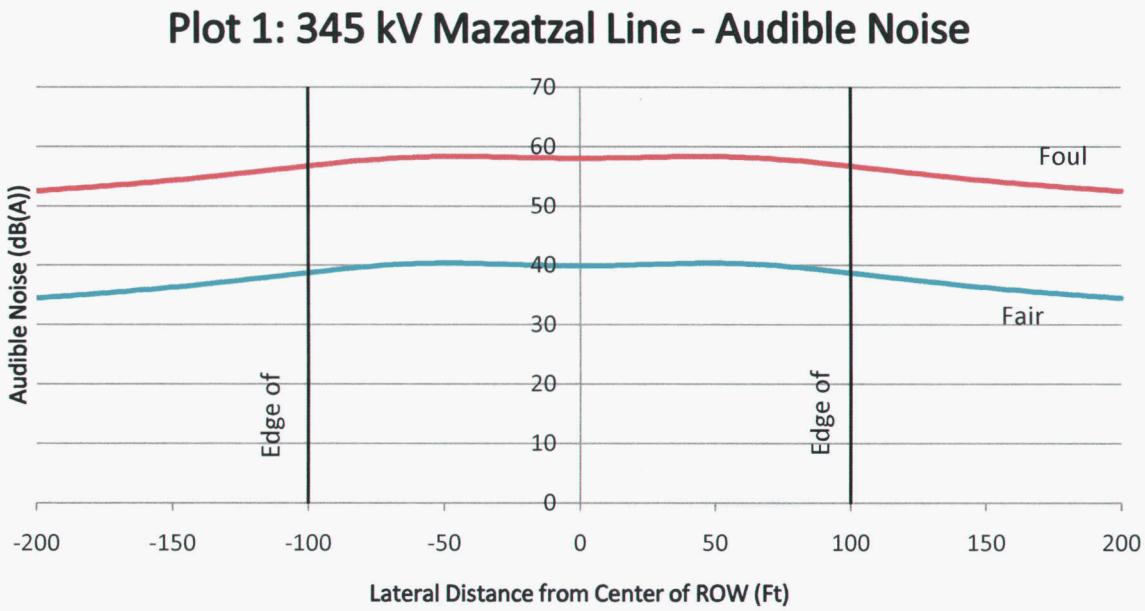
Corona represents power loss on the transmission line and creates transmission line noise. Successful operation of 345kV lines with similar gradients indicates that this transmission line will not create adverse corona effects.

TRANSMISSION LINE AUDIBLE NOISE

Audible noise (AN) is created by corona discharge along the transmission line. As a result, the amount of AN is directly related to the amount of corona, which is in turn affected by meteorological conditions (most notably rain). Transmission line AN is categorized into broadband high frequency sounds, which can be described as hissing or sputtering, and low frequency tones, which are best described as humming sounds.

The highest calculated AN levels for the transmission line design during foul weather (rain) may reach 56.7 dB measured on an "A" weighted scale at the edge of the right-of-way. This noise level will occur during heavy rain (L5 – Rain), which will serve to mask the noise. During fair weather the AN at the edge of the right-of-way is reduced with a maximum value of 38.7 dB(A) (L50 – Fair). Plot 1 shows the L5 foul weather and L50 fair weather calculated audible noise profiles for the expected line configuration.

Due to the expected low AN levels, the line noise will normally be inaudible at the edge of the right-of-way. Considering the relatively few hours of AN producing weather, the location of the line with respect to neighboring land uses, and the calculated AN levels during foul weather, no serious AN problems are expected even during foul weather.

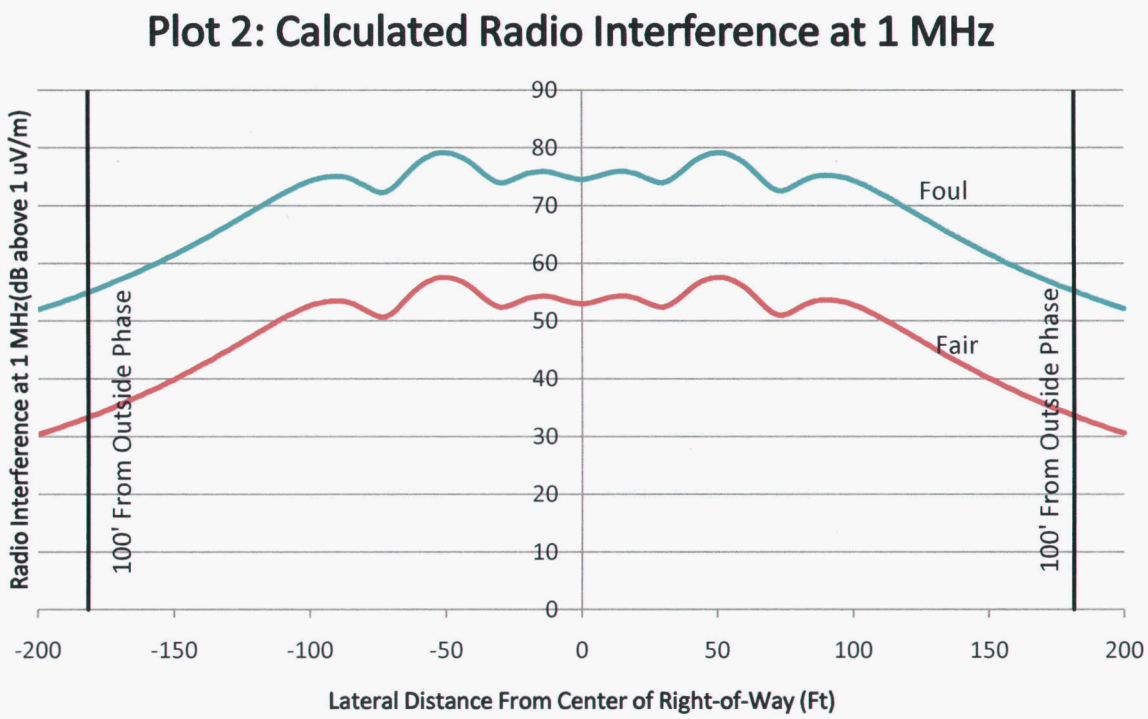


RADIO INTERFERENCE

Radio interference is the reception of spurious energy not generated by the transmitting station. In general, this energy affects the amplitude modulated (AM) radio band, but not the frequency modulated (FM) radio band. Transmission line radio interference is caused by corona and by gap discharges. Gap discharges are electrical discharges across a small gap with the most common cause being loose hardware. Gap discharges comprise a large percentage of all interference problems and are easily remedied. Experience shows that gap discharges are not a problem with steel structures, but are more prevalent with wood structures due to the expansion and contraction of the wood causing hardware to loosen.

Corona caused radio interference impact is dependent on various factors including distance from the line to the receiver, radio signal strength, ambient radio noise level, receiving antenna orientation, and weather conditions. A common practice of determining the expected level of radio interference is to calculate the transmission line radio interference at a frequency of 1 MHz.

Comparison of the calculated radio noise levels for the transmission line design shows the highest magnitude fair weather radio noise level is in the range of 33.2 dB (above 1 μV/meter) at a distance of 100 feet from the outside phase (clean construction). Experience shows that there are generally no problems with radio interference when calculated noise interference levels are below 40 dB (above 1 μV/m) at 100 ft from the outside phase [IEEE 1980]. During inclement weather, transmission line noise levels increase to levels in the range of 55 dB, above 1 μV/meter 100 ft from the outside phase. Transmission line experience for the existing 345kV line of similar design and traversing similar terrain has shown radio interference to not be a problem. Plot 2 shows the calculated radio interference for the line.



TELEVISION INTERFERENCE

Historically traditional television broadcasts occur in three ranges:

- 54 – 88 MHz (channels 2 – 6)
- 174 – 216 MHz (channels 7 – 13)
- 470 – 890 MHz (channels 14 – 83)

Transmission line interference reduces with increasing frequency above 100 MHz. Consequently, television interference (TVI) only affects the lower VHF band (channels 2 through 6) and no interference will be experienced in the upper VHF (channels 7 through 13) and UHF bands (channels 14 through 83) even during foul weather. TVI noise levels can potentially affect amplitude modulated (AM) signals; therefore the picture quality of analog broadcasts,

which is AM, can be affected, but not the sound quality as these signals are frequency modulated (FM).

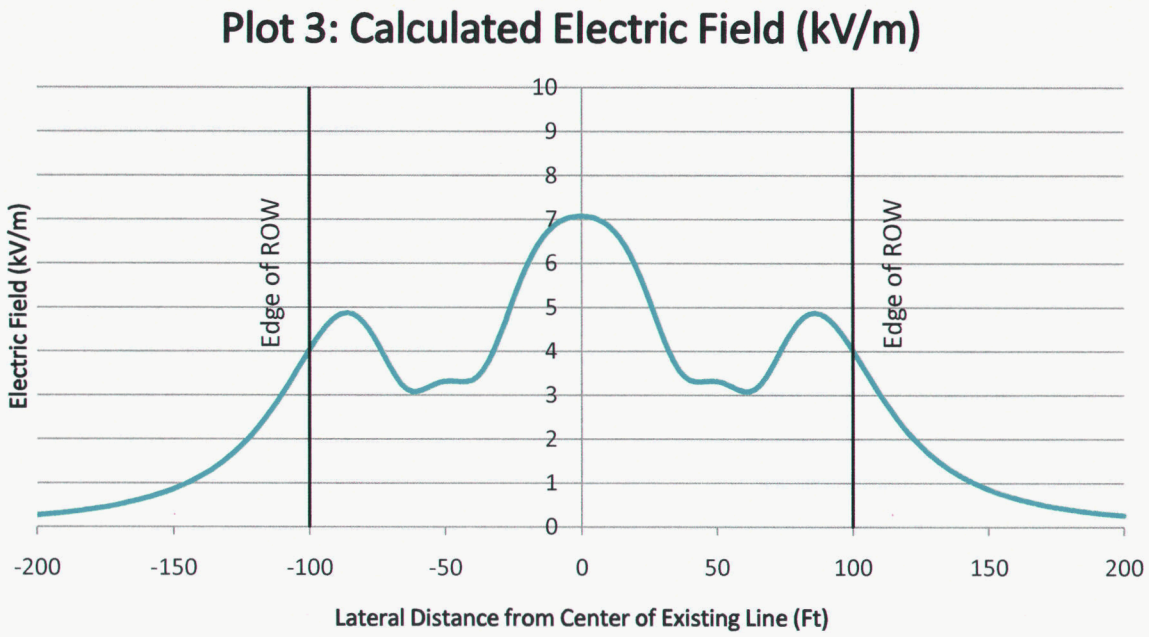
In the past where transmission line generated TVI has been found to be a problem, it is generally the result of induced voltage on fences, conductors, and hardware, which are adjacent to the right-of-way. In these situations, the interference can be easily corrected by grounding the objects, or by realigning, relocating, or providing higher gain television antennas. APS has always been prepared to assist affected parties in resolving TVI problems resulting from the operation of our facilities.

On June 12, 2009, over-the-air analog television broadcasts ceased and all over-the-air broadcasts converted to digital broadcasts. These digital broadcasts are assigned to the UHF frequency band which is the frequency range not affected by transmission line noise due to the noise attenuation at these higher frequencies. Thus, digital television will not experience the interference problems that analog television had the potential of experiencing. Hence, no objectionable noise or interference with television signals is anticipated.

ELECTRIC AND MAGNETIC FIELD EFFECTS

Electric and magnetic field (EMF) effects are primarily electric and magnetic induction effects whereby voltages and currents are induced in nearby conductive objects by the voltage and current associated with the line.

Electrostatic induction is the capacitive coupling of a voltage onto insulated objects near the transmission line. The induced voltage is a function of the electric field associated with the line, which in turn is a function of the line voltage. Other factors, which affect the level of induced voltage, include insulation, object orientation and dimensions, and line height. When a person reaches to touch a conducting object which has been charged by electrostatic induction, a spark discharge will occur similar to that experienced by a person reaching for a doorknob after walking on a nylon carpet with the difference that sparking will continue to occur as long as the person's hand remains close enough to the object for the sparks to occur. Based on computer modeling the electric fields associated with the proposed transmission line will be consistent with the electric field values of the existing 345kV transmission line(s). No electrostatic induction problems are anticipated. Should any electrostatic induction problems occur, they can be easily corrected by grounding the conductive objects. The transmission line will be designed to limit the value of short-circuit current from a conductive object to 5 mA or below, which is the maximum design limit permitted by the National Electrical Safety Code. Plot 3 shows the expected electric field (calculated 1m above ground) for the expected configuration of the line. Note that the expected electric field is below the 5 kV/m limit outside the right-of-way and 10 kV/m inside the right-of-way as specified by IEEE Standards [IEEE C95.6].

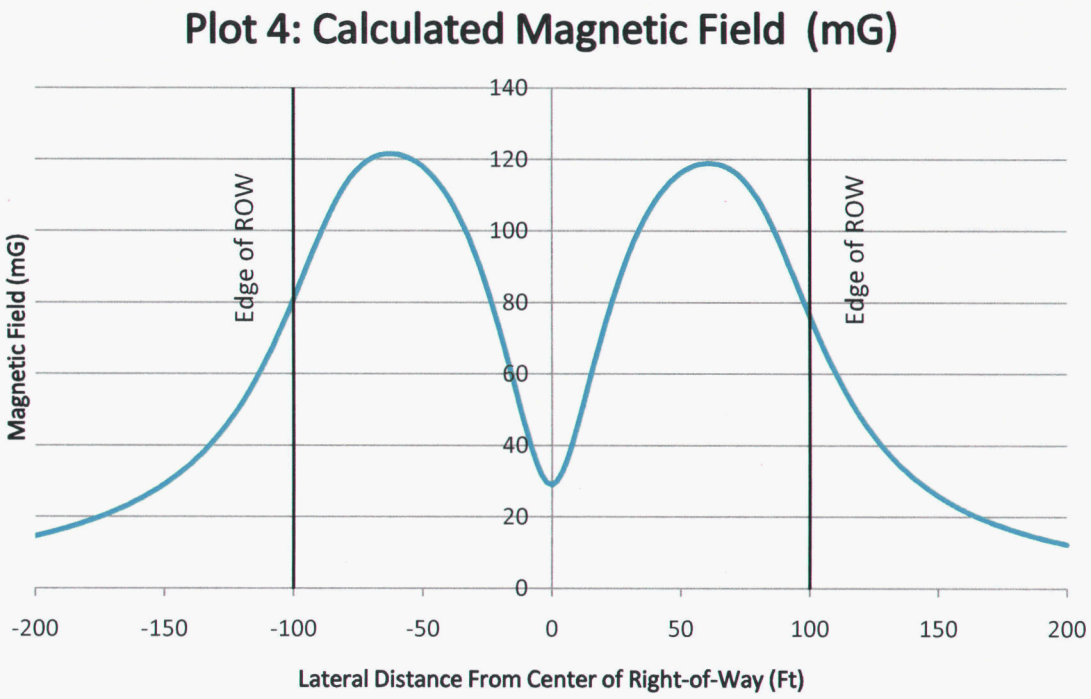


The magnetic fields associated with transmission lines can also induce voltages and currents in conductive objects (e.g. fences, communication lines, railroads, pipelines, etc.), which are close to and run parallel to the transmission line. The magnetic field level is a function of the current level in the transmission line, which in turn is a function of the line loading.

In addition to the EMF induction issues described above, scientific and public interest regarding potential health effects of human exposure to 60 hertz EMF has led to extensive study for more than 20 years. One example of such research is a World Health Organization (WHO) report titled "Extremely Low Frequency Fields Environmental Health Criteria Monograph No. 238" which details the results of a health risk assessment of extremely low frequency (ELF) electromagnetic fields up to 100 kHz. The WHO study found that scientific evidence that demonstrates a consistent pattern of increased risk for childhood leukemia due to chronic low-intensity power-frequency magnetic field exposure is based on epidemiological studies. The report goes on to state that "Virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status"[WHO]. The report concludes that "Thus, on balance, the evidence is not strong enough to be considered causal, but sufficiently strong to remain a concern" [WHO]. The results of the WHO report support previous findings by the National Institute of Environmental Health Science [NIEHS] and International Agency for Research on Cancer [IARC] that the use of electricity does not pose a major unrecognized health danger.

As noted above, the WHO Report did concur with the overall conclusions of the 2002 IARC report on EMF. The 2002 IARC report did not conclude that power frequency fields present a specific health risk, however, IARC did state that, with respect to childhood leukemia, power frequency magnetic fields are 'possibly carcinogenic to humans'. This finding was based on limited human evidence and inadequate evidence in experimental animals [IARC].

The actual electric and magnetic fields associated with these power lines will depend on the final construction, the amount of current in the lines, height of the conductors, and other nearby sources of fields. Based on computer modeling of expected construction configuration and operating conditions, the electric and magnetic fields associated with these lines is comparable to other already existing lines of this voltage in the state. Plot 4 shows the calculated magnetic field for the expected line configuration (calculated 1 m above ground). The Plot 4 simulation case was modeled with a line flow of 650 A which corresponds to 75 percent of the highest expected flow on the line. Actual flows are expected to be below this value over 90 percent of the time.



REFERENCES

[IEEE] 1980. "Review of Technical Considerations on Limits to Interference from Power Lines and Stations", IEEE Radio Noise and Corona Subcommittee Report, RI Limits Task Force, Working Group #3, IEEE Transactions on Power Apparatus and Systems, Vol. PAS-99, No. 1, Jan./Feb. 1980, pages 365-388.

[IEEE C95.6] "IEEE Standard for Safety Levels with Respect to Human Exposure to Electromagnetic Fields, 0 – 3 kHz.", 2002.

[NIEHS] Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, National Institute of Environmental Health Sciences, National Institutes of Health, NIH Publication No. 99-4493, May 1999.

[IARC] IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 80, Non-Ionizing Radiation, Part 1: Static and Extremely Low Frequency (ELF) Electric and Magnetic Fields, 2002: Lyon, France.

[WHO] Extremely Low Frequency Fields Environmental Health Criteria Monograph No. 238 (2007), World Health Organization, Geneva, Switzerland, ISBN 978-92-4-157238-5

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EXHIBIT J: SPECIAL FACTORS

Pursuant to the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, applications for certificates of environmental compatibility shall include information required as exhibits. Exhibit J reads as follows:

"Describe any special factors not previously covered herein, which Applicant believes to be relevant to an informed decision on its application."

Exhibit J-1 – Scoping Letter
Exhibit J-2 – Public Notices for Scoping Comment Period
Exhibit J-3 – Public Notice for Draft Environmental Assessment Commenting Period
Exhibit J-4 – Draft Environmental Assessment Comments Received
Exhibit J-5 – Website
Exhibit J-6 – Finding of No Significant Impact

INTRODUCTION

This exhibit includes information on the public involvement program that has been conducted for the Mazatzal Substation and 345kV Interconnection Project. Public outreach efforts began in February 2008 in support of the EA prepared for the USFS. The outreach efforts provided information to agencies and individuals, solicited information on the Project area, and helped to identify potential issues relative to the Project.

PUBLIC INVOLVEMENT PROGRAM SUMMARY

The study area was entirely within the TNF in Gila County, Arizona. A public involvement process was initiated at the onset of the planning process to ensure that affected stakeholders were provided with the opportunity to relay information or potential concerns.

To reach the affected communities, the Applicant utilized a mailing list provided by the TNF for the scoping letter, and local official briefings. A letter was provided on behalf of the TNF to notify people of the community meeting. By providing the public with opportunities to access Project information and to relay comments, the Project team was able to identify potential issues and address them through the planning process and environmental studies.

Scoping and Mailing List

A scoping letter was produced and mailed to 115 agencies and individuals on February 5, 2008. The letter included the Project description, purpose and need, description of alternatives, and a map. This letter helped to introduce the Project to the public (Exhibit J-1).

Public Notice

The TNF determined that the remoteness of the Project did not warrant a public scoping meeting, and directed APS to publish the legal notice for public review and comment. The Project and the 30-day scoping comment period were announced through legal notice publications in the *Payson Roundup* and *East Valley Tribune*. Public comments received are described below. The Project has been listed in the TNF's Schedule of Proposed Actions (SOPA) since the first quarter 2008 SOPA. A copy of the newspaper publications is included in Exhibit J-2.

Comments Received During Scoping Process

During the scoping process and over the course of the Project, eight comments were received, including questions regarding the Project purpose and need, Project alternatives, visual concerns, biological concerns, concerns about Waters of the U.S., grazing resources, and cultural resources concerns. Two tribes responded to express their desire to continue to engage in consultation regarding cultural resources; one tribe expressed a preference for the avoidance and preservation of cultural resources, two letters of support for the Project were received; and two requests for additional information were received by telephone.

Draft Environmental Assessment Public Notice and Comments Received

To announce the 30-day public comment period for the EA, a public notice was posted on June 25, 2010 in the Arizona Capitol Times, Phoenix (Exhibit J-3). During the 30-day public comment period, two letters were received. The first letter received was from the Gila County Board of Supervisors stating their support for the Project. The Board of Supervisors felt the Project would provide reliable infrastructure and power to the Payson, Rye, and Tonto Basin areas.

The second letter received was from Jack Cowan. Mr. Cowan had concerns with the visibility of the Project and the introduction of new access into the forest. In response, APS and the TNF will collect a baseline inventory and photo documentation of existing unauthorized roads and trails adjacent to FR 379 prior to any construction activities. Cross country vehicular use will be monitored.

Website

The TNF has created a web page dedicated to the Project. On the webpage a general description of the Project and a link to the draft EA are available (Exhibit J-5) The Project contact is also listed. The website is located at: http://www.fs.fed.us/nepa/project_content.php?project=29530.

Exhibit J-1 – Scoping Letter

United States Department of Agriculture | **Forest Service** | **Tonto National Forest, Supervisor's Office**

2324 E. McDowell Road
Phoenix, AZ 85006
Phone: (602) 225-5200
Fax: (602) 225-5295

File Code: 1950
Date: February 5, 2008

Dear Interested Party:

Your input is being sought for the proposed **Mazatzal 345/69/21 kilovolt (kV) Substation Project** on the Tonto Basin Ranger District of the Tonto National Forest (TNF). This letter and enclosed map will provide you with information on the Purpose and Need and the Proposed Action for the project.

Purpose and Need for Action

Arizona Public Service Company (APS) is the electric power supplier to the communities in the Payson, Rye, Roosevelt Lake, and adjacent areas. These areas have been experiencing considerable growth for the past several years. Due to the current and projected future growth of these areas, APS's electric infrastructure is nearing its capacity. Currently, the Rye and Payson communities are supplied with electricity from the Tonto Substation, located in Payson, which feeds a temporary substation in Rye. The Tonto Substation is nearing its capacity during peak summer loads and icing conditions during winter. APS has determined that a new 345/69/21kV substation is needed to ensure reliable service to existing customers and to expand the system to serve new development in the region.

Construction of the proposed Mazatzal 345/69/21kV Substation and associated 69kV subtransmission line would ensure reliable electric service to both existing and future area residents and accomplish the following:

- provide a looped transmission system and the ability to restore power in a timely manner in the event of an outage
- provide capacity for projected load growth in the Payson, Rye, and Tonto Basin areas and develop the 69kV system for meeting long-term needs
- improve power quality in the area by providing a stable voltage source

The Purpose and Need for action by the U.S. Forest Service is to identify a suitable corridor and site for the proposed facilities on National Forest System land, in order to facilitate the completion of the proposed project and to meet the management needs and requirements set forth in the TNF Land and Resource Management Plan (Forest Plan). The improvements would occur adjacent to an existing transmission line easement, which is consistent with the Forest Plan.

The project is consistent with the National Energy Policy (NEP). The NEP's purpose is to increase domestic energy supplies, modernize and improve our nation's energy infrastructure, and improve the

reliability of the delivery of energy from its sources to points of use. The use and occupancy of federal land, including National Forest System land, is an important element in facilitating the exploration, development, and transmission of affordable and reliable energy to meet these NEP goal

Proposed Action

The proposed project is to construct, operate, and maintain a 345/69/21kV substation and double-circuit 69kV subtransmission line with a double-circuit 21kV underbuild. The project would require the authorization of a Special Use Permit, issued for a 50-year term. The proposed substation would be located as close as possible to the existing Four Corners-Cholla-Pinnacle Peak 345kV transmission line on National Forest System land south of Rye, Arizona. Specifically, the proposed substation would be located near the intersection of the existing 345kV transmission lines and either Forest Road (FR) 379B or FR 380. Approximately 1 to 2 miles of new double-circuit 69kV subtransmission line, with a double-circuit 21kV underbuild, would connect the proposed substation to existing facilities. Please refer to the enclosed map. Note that the route shown for the subtransmission line is approximate; the exact route will depend on the substation location as well as construction and engineering considerations.

The substation would require up to 21 acres for construction and maintenance. The two sites being considered were identified for further evaluation after extensive preliminary siting studies looking at factors such as environmental considerations, system needs, and engineering requirements. The 69kV subtransmission line is proposed to be built on 70-foot steel poles; some poles may need to be taller due to terrain and environmental constraints. Construction of the proposed project would require improvements to the existing Forest Road for the delivery of materials, transformers, equipment, and all-weather maintenance access.

Environmental Planning Group (EPG, Inc.) of Phoenix, Arizona, a third-party contractor, has been approved by the Forest Service to prepare an environmental assessment (EA) to analyze the impacts of constructing a 345/69/21kV substation, 69kV subtransmission line, and improving the access roads under the National Environmental Policy Act (NEPA).

Decision Framework and Responsible Official

This letter initiates the NEPA analysis process for this project. The analysis will be documented in the EA. It is important to note that an EA is not a decision document. The EA is a document disclosing the environmental consequences of implementing the proposed action and alternatives to that action. If the analysis demonstrates that there are no significant impacts, the responsible official documents his or her decision in a Decision Notice and Finding of No Significant Impact.

I, as the Tonto Basin District Ranger, am the responsible official for this project. In the decision, I will address the following two questions based on the environmental analysis:

1. Should the Proposed Action proceed as proposed, as modified by an alternative, or not at all? If it proceeds…
2. What mitigation measures and monitoring requirements should the Forest Service apply to the construction?

Exhibit J-1 – Scoping Letter (cont'd)

If implementation occurs, it is estimated to begin as early as summer of 2008 and be completed in 2011.

Request for Comments

Your comments are important. We would like to know of any issues or concerns that you may have about this proposal. When you respond, please make sure that your comments are fully formed and as specific as possible in order to assist us in the analysis. Although comments are welcome at any time, the open comment period will end **March 7, 2008**.

Please send your comments to:

Mazatzal Scoping
c/o Nancy Favour
Environmental Planning Group
4141 N. 32nd Street, Suite 102
Phoenix, AZ 85018

or by email: nfavour@epgaz.com

This comment period is considered the official Notice and Comment period for this project, per 36 CFR Part 215.3(a). If we do not receive any substantive comments, or only supportive comments, there will be no appeal period following the completion of the EA and my subsequent decision (36 CFR 215.12(1)). Public comments (written, oral, facsimile, hand-delivered, or electronic) on the Proposed Action will be accepted for 30 days following the date of publication of legal notice in the *East Valley Tribune* and the *Payson Roundup*. Regulations prohibit extending the length of this comment period. You must comment during this official 30-day comment period, as described above, to have standing to appeal the decision when it is made.

Thank you for your time and interest in this proposal.

Sincerely,

/s/ Gary Smith
GARY SMITH
District Ranger

Exhibit J-2 – Public Notices for Scoping Comment Period

Payson Roundup
February 5, 2008

11336: 2/5/2008

NOTICE OF THE OPPORTUNITY TO COMMENT on the
Mazatzal 345/69/21 kilovolt (kV)
Substation Project
Tonto Basin Ranger District
Tonto National Forest USDA - Forest Service
Gila County, Arizona

The Mazatzal 345/69/21 kV Substation Project Environmental Assessment (EA) will analyze the impacts of constructing, operating, and maintaining a 345/69/21kV substation and approximately 2 miles of double-circuit 69kV subtransmission line, with a double-circuit 21kV underbuild, under the National Environmental Policy Act. The improvements would occur adjacent to an existing transmission line easement, on National Forest System land.

This is considered the official Notice and Comment period for this project, per 36 CFR Part 215.3(a).

If we do not receive any substantive comments, or only supportive comments, there will be no appeal period following the completion of the EA and my subsequent decision (36 CFR 215.12(1)). Public comments (written, oral, facsimile, hand-delivered, or electronic) on the Proposed Action will be accepted for 30 days following the date of publication of this notice. You must comment during this official 30-day comment period, as described above, to have standing to appeal the decision when it is made.

Comments may be sent to: Mazatzal Scoping, c/o Nancy Favour, EPG, 4141 N. 32nd Street, Suite 102, Phoenix, AZ 85018; faxed to 602-956-4374, or via email to comments@epgaz.com.

Gary Smith, Tonto Basin District Ranger, is the responsible official for this project.

The Tribune (East Valley and Scottsdale Editions)
February 5, 2008

NOTICE OF THE OPPORTUNITY TO COMMENT on the
Mazatzal 345/69/21 kilovolt (kV) Substation Project
Tonto Basin Ranger District
Tonto National Forest USDA - Forest Service
Gila County, Arizona

The Mazatzal 345/69/21-kV Substation Project Environmental Assessment (EA) will analyze the impacts of constructing, operating, and maintaining a 345/69/21kV substation and approximately 2 miles of double-circuit 69kV subtransmission line, with a double-circuit 21kV underbuild, under the National Environmental Policy Act. The improvements would occur adjacent to an existing transmission line easement, on National Forest System land.

This is considered the official Notice and Comment period for this project, per 36 CFR Part 215.3(a). If we do not receive any substantive comments, or only supportive comments, there will be no appeal period following the completion of the EA and my subsequent decision (36 CFR 215.12(1)). Public comments (written, oral, facsimile, hand-delivered, or electronic) on the Proposed Action will be accepted for 30 days following the date of publication of this notice. You must comment during this official 30-day comment period, as described above, to have standing to appeal the decision when it is made.

Comments may be sent to: Mazatzal Scoping, c/o Nancy Favour, EPG, 4141 N. 32nd Street, Suite 102, Phoenix, AZ 85018; faxed to 602-956-4374, or via email to comments@epgaz.com.

Gary Smith, Tonto Basin District Ranger, is the responsible official for this project.

Feb. 5, 2008/15787500

Exhibit J-3 – Public Notice for Draft Environmental Assessment Commenting Period

County: Maricopa
Printed In: Arizona Capitol Times (Phoenix)
Printed On: 2010/06/25
Public Notice:

PUBLIC NOTICE Legal Notice of Proposed Action Opportunity to Comment Mazatzal Substation Project Environmental Assessment The Tonto Basin Ranger District, Tonto National Forest is preparing an Environmental Assessment for the Mazatzal Substation Project. Arizona Public Service Company is proposing to construct a 345/69/21 kilovolt (kV) substation and approximately 1 mile of two parallel double-circuit 69/21kV sub-transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas. The Project is located on National Forest System land on the east side of State Route 87, north of Arizona 188, in Gila County, Arizona. The proposed action and associated analysis can be obtained from the Tonto Basin Ranger District at 28079 N. AZ Highway 188, Roosevelt, AZ 85545, the Tonto National Forest Supervisor's Office at 2324 E. McDowell, Phoenix, AZ 85051 or online at http://www.fs.fed.us/r3/tonto/projects/. The comment period ends 30 days following the date of publication of this legal notice in the Arizona Capitol Times on June 25, 2010. This publication date is the exclusive means for calculating the time to submit comments on the proposed action. Those wishing to comment on this proposal should not rely upon dates or timeframes provided by any other source. Only those who provide comment or otherwise express interest in the proposed action during the comment period will be eligible as appellants. Interest expressed or comments provided on this project prior to or after the close of this comment period will not constitute standing for appeal purposes. Comments must meet the requirements of 36 CFR 215.6. Comments must be submitted to Mazatzal Draft EA Public Comments, c/o Kevin Duncan, EPG, 4141 N. 32nd Street, Suite 102, Phoenix, AZ 85018 or faxed to 602-956-4374. Comments may also be submitted by email in word (.doc), rich text format (.rtf), text (.txt), portable document format (.pdf), and hypertext markup language (.html) to comments@epgaz.com. Comments may also be hand delivered weekdays 8:00 am – 4:30 pm at the above stated address. To be eligible for appeal, each individual or representative from each organization submitting comments must either sign the comments or verify identity upon request. Names and addresses of commentors will become part of the public record. The U.S. Department of Agriculture is an equal opportunity provider and employer. 6/25, 2010 edition Arizona Capitol Times

Public Notice ID: 13573752.HTM

Exhibit J-4 – Draft Environmental Assessment Comments Received

Tommie C. Martin, District I
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GILA COUNTY
BOARD OF SUPERVISORS
1400 E. Ash Street
Globe, Arizona 85501

Don E. McDaniel, Jr.,
County Manager
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John F. Nelson,
Deputy County Manager/
Clerk of the Board of Supervisors
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jnelson@gilacountyaz.gov

July 6, 2010

Mazatzal Draft EA Public Comments
c/o Kevin Duncan, EPG
4141 North 32nd Street, Suite 102
Phoenix, AZ 85018

Dear Mr. Duncan,

The undersigned members of the Board of Supervisors of Gila County, Arizona, would like to provide the following comments on the proposed construction of a new substation and one mile of transmission lines to provide reliable power to communities in Gila County by Arizona Public Service Company. The project is located on National Forest System land on the east side of State Route 87, and north of Arizona 188.

We support this proposed new substation and the efforts to provide reliable power to the residents in the Payson, Rye and Tonto Basin areas. Reliable infrastructure is important in the continued growth and success of Gila County. This location is ideal for this project, given the location of the existing power lines that cross forest land that this substation would connect to.

We look forward to the successful completion of this project.

Respectfully submitted,

Michael A. Pastor	Shirley L. Dawson	For: Tommie C. Martin
Chairman	Member	Member

Phone (928) 425-3231 **Fax (928) 425-0319** **T.D.D. (928) 425-0839**

July 22,2010

To: Kelly Jardine
District Ranger
Tonto District, TNF

re:: Mazatzal Substation Project

The growth Of Northern Gila County is not only limited by a shortage of a reliable electrical supply It is more critically impacted by the lack of a reliable source of water. Both must be addressed prior to future planned development of this area. While not opposed to the construction of the Mazatzal Substation Project I seriously question the location and scope of the proposed development.

A few years ago, in discussions with the District Ranger Gary Smith, concerning a request for a proposed Substation were held. At that time the proposal was for three to five acres for the substation and an additional storage facility (APS) increasing the total to twenty to twenty five acres. Smith stated his desire that the substation not be visible or accessible from Hwys.87 or 188, to limit the intended and unintended consequences to the overall environment and limit the footprint on the Tonto National Forest.

The proposed area is a very fragile environment. Abuse and the Willow Fire have shown the time factor for recovery. Increasing the use of the environmental resources should be kept to a minimum. Earlier this month I invited you to accompany me to see to see damages to the Barnhardt Trailhead area. We observed trails, roadways, camping and parking areas that were created by people failing to abide by USFS Regulations The destruction was not limited to these but included historical sites and improvement to provide water to wildlife and livestock and to control grazing. This destruction was not off well maintained roadways as the proposed access to the Mazatzal Substation would be.

The proposed road improvement would create a new road to make transport to the construction site more accessible. There is now limited vehicular access to this area but with the construction of the new roadway and improved entry the magnitude of ATV and 4X4 use will increase dramatically. As witnessed throughout the Tonto National Forest a large percentage of motorized visitors fail to remain on approved roadways. This damages the vegetation and creates significant erosion problems. Wildlife will also be affected by the reckless use of motorized vehicles.

Quoting Arizona Highways, August, 2008, "Off-road vehicles are destroying fragile vegetation in the Ironwood Forest National Monument. The article continues speaking Fossil Creek as example environmental restoration being trashed by the deluge of people drawn to its sparking waters. Cabesa Prieta National Wildlife Refuse wilderness character is so damaged it could not now be considered wilderness status with approximately 1200 miles of illegal roads and trails. Both Agua Fria National Monument and Ironwood Forest National Monument are suffering from an increase in tourism where

illegal off road vehicles, pothunters, and others damaging the environment, saquaros and petroglyphs.

To maintain this easily accessible area within the Tonto National Forest we must be proactive in its protection. We not want another blythed area like the one between Hwy 87 and Sugarloaf Mountain. The direct impact of the Mazatzal Substation might be minimal the indirect impact without doubt severe. The Forest Service does not have the resources to prevent the abuses of those visitors who fail or refuse to abide by the guidelines to protect and preserve the forest for future generations.

While not ideal it would be better to locate the substation off Hwy 188 under the powerlines so as to expose a reduced area to development or destruction. If that is not possible at least closed access of motorized vehicles to those related to the substation or maintaining of improvements. This could be accomplished by the simple installation of a gate lock.

Sincerely:

Jack M. Cowan

Jack M. Cowan

Exhibit J-5 – Website

Projects

APS Mazatzal 345 Kv Substation

Project Summary

The Arizona Public Service Company is proposing to construct a new substation on approximately 28 acres of National Forest System land and construct approximately one mile of transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas. The project is located on the east side of State Route 87, north of Arizona 188 in Gila County.

Project Contact

Troy Waskey, 928-467-3230

twaskey@fs.fed.us

Project Documents

Decision Documents

- APS Mazatzal Substation DN/FONSI (PDF 140kb)

Analysis Documents

- APS Mazatzal Substation Final EA (PDF 17261kb)
- APS Mazatzal Substation draft EA (PDF 15441kb)

Supporting Documents

- APS Mazatzal Substation Legal Notice for Decision_082710 (PDF 7kb)

Exhibit J-5 – Website

Projects

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DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT
ARIZONA PUBLIC SERVICE MAZATZAL 345/69/21kV SUBSTATION
U.S. D. A. - FOREST SERVICE
TONTO BASIN RANGER DISTRICT, TONTO NATIONAL FOREST
GILA COUNTY, AZ

INTRODUCTION

The Arizona Public Service Company (APS) is the electric power supplier to communities in the Payson, Rye, Roosevelt Lake, and adjacent areas in Gila County, Arizona. APS is proposing to construct a 345/69/21 kilovolt (kV) substation and approximately 1 mile of two parallel double-circuit 69/21kV sub-transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas.

An *Environmental Assessment* (EA) was prepared to evaluate the proposal. Two alternatives were analyzed in detail by an interdisciplinary team: A *No Action* alternative would have the existing facilities continue to serve the Payson, Rye, and Tonto Basin areas at the same level of reliability; and the *Proposed Action* involves the construction of the 345/69/21kV substation and the 69/21kV sub-transmission line for increased reliability of power supplies to those communities. Further description of alternatives can be found in Chapter 2 of the EA. A copy of the final EA is available for public review at http://www.fs.fed.us/r3/tonto/projects/.

DECISION

This *Decision Notice* documents my decision and reasons for this decision. The purpose and need for this project is defined as construction of electrical facilities for increased reliability of electrical power to the communities of northern Gila County. Given the purpose and need, I have reviewed the environment affects of the proposed action and the no action alternative and carefully considered the public comments received on the draft EA. The analysis of the environmental effects, public input and management direction and policy considerations contributed collectively to determining the selected alternative. The information is contained in the Project record.

Based upon my review of the APS Mazatzal 345/69/21kV Substation EA, I have decided to implement Alternative 2, as described in the final EA, with the following changes and mitigation measures:

Changes to the Final EA

- References to wild burros in the vicinity of the study area were removed because they are not present in the area.

Planned Activities for Selected Alternative

The following activities are summarized descriptions. Complete descriptions can be found in Chapter 2 of the EA.

The proposed substation and 69/21kV sub-transmission lines would be located on National Forest System (NFS) lands, in Section 4, Township 8 North, Range 10 East, approximately 1.5 miles east of SR 87 (Beeline Highway). The proposed substation would be located near the intersection of the existing 345kV transmission lines and FR 379, on the west side of the 345kV lines. The substation would be interconnected with the existing 345kV lines and the new 69/21kV sub-transmission lines, including the modification to or addition of 345kV towers.

Additionally, approximately 2.5 miles of existing forest roads (FR 379) would need to be widened and improved. Temporary deceleration/acceleration turning lanes may be constructed to facilitate the safe movement of construction vehicles from SR 87 to FR 379.

Approximately 1–2 miles of parallel new 69/21kV sub-transmission lines would be needed to connect the proposed substation with existing facilities, requiring a right-of-way 100 feet wide. Structures would be made of steel, average 75–95 feet tall with a maximum height of 105 feet, and be spaced between 250 and 400 feet apart. Additional access roads would also be required for the construction of the sub-transmission lines.

Monitoring of Resources

The Tonto National Forest (TNF) would monitor implementation of the selected alternative.

Alternative 2 – Proposed Action

- An archaeological monitor would be present during construction activities within 100 feet of eligible sites, or as stipulated by the TNF.
- A baseline inventory and photo documentation of existing unauthorized roads and trails adjacent to FR 379 will be collected prior to any construction activities. Cross country vehicular use will be monitored.

PUBLIC INVOLVEMENT

This action was listed as a proposal on the TNF *Schedule of Proposed Actions* and updated periodically during the analysis. People were invited to review and comment on the proposal by scoping letters and publication in newspapers serving the area. The EA lists agencies and people consulted on pages 4-1 and 4-2.

During the 30-day public comment period, two letters were received. The first letter received was from the Gila County Board of Supervisors stating their support for the project. The Board of Supervisors felt the project would provide reliable infrastructure and power to the Payson, Rye, and Tonto Basin areas. No response was needed for this letter.

The second letter received was from a grazing permittee on the Tonto Basin Ranger District of the TNF. The permittee commented that the proposed substation access road should be gated and closed to public access to prevent visitors and ATV users from creating unauthorized trails, roadways, camping, and parking areas off of the proposed substation access road. This would

help to avoid damage to the environment, such as vegetation destruction and erosion. In response, additional mitigation and monitoring criteria were added to the proposed action (see Monitoring of Resources).

Tribal consultation is currently being completed by the TNF. If tribal consultation results in additional mitigation measures, those measures will be implemented during project construction.

DECISION RATIONALE

I have decided to implement *Alternative 2* because it best meets the purpose and need for this action as determined from management direction and because it responds well to key issues and public comments.

Reason(s) for Not Selecting Other Alternative(s)

I did not select Alternative 1 because it did not meet the purpose and need. Even though there would be no ground disturbance or resource impacts, reliability of the existing electrical infrastructure would diminish with continued electrical load growth and the probability of power outages would increase.

FINDING OF NO SIGNIFICANT IMPACT

I have determined through the EA that this is not a major federal action that will significantly affect the quality of the human environment; therefore, an *Environmental Impact Statement* is not needed. There were no significant, adverse, or controversial impacts to the human environment identified in this review. This determination is also based on the following findings and criteria listed below.

CONTEXT

The significance of effects of my decision has been analyzed in several contexts. My decision is consistent with the requirements of the Forest Plan and contributes to meeting the goals of the Forest Plan. The analysis considers and discloses cumulative effects on the resources within the project area and associated resource areas. In addition, direct and indirect effects o the project area have been considered in this determination.

INTENSITY

The intensity of effects was considered in terms of the following:

1. **Impacts may be both beneficial and adverse.** Consideration of the intensity of environmental effects is not biased by beneficial effects of the action. The EA considers and discloses both beneficial and adverse effects.
2. **The degree to which the proposed action affects public health or safety**. There will be no significant effects on public health and safety.

3. **Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.** There will be no significant effects on unique characteristics of the area because implementation of the Project's mitigation measures, as well as federal and state law, will help to prevent potential impacts. By preparing and implementing a Historic Properties Treatment Plan (HPTP), the six *National Register of Historic Places* (NRHP)-eligible prehistoric archaeological sites in the Project APE would be mitigated to prevent potential impacts.
4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** The effects on the quality of the human environment are not likely to be highly controversial. There is no known credible scientific controversy over the impacts of the proposed action. No opposing scientific conclusions were identified during the analysis.
5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** The analysis shows the effects are not uncertain, and do not involve unique or unknown risk. Based on the environmental analysis and the decision process, the TNF has determined that the Project is compatible and consistent with the TNF Forest Plan.
6. **The degree to which the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.** The action is not likely to establish a precedent for future actions with significant effects, because past and present general actions within the vicinity of the Project remain the same as the reasonably foreseeable future actions within the vicinity of the Project. To prevent future actions with significant effects, mitigation measures would be implemented, such as installing a gate to the entrance of the substation access road to prevent unauthorized uses by visitors in the TNF.
7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.** This analysis considers and disclosed the effects of similar and connected actions to this proposal. These include road reconstruction and right-of-way access for future maintenance needs. The EA also analyzes and discloses cumulative effects, including past, present, and reasonably foreseeable actions. The cumulative impacts are not significant.
8. **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed , or eligible for listing, in the *National Register of Historic Places* or may cause loss or destruction of significant scientific, cultural, or historical resources.** The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP, because adverse effects may be resolved by excavation data recovery through the implementation of the HPTP. The action will also not cause loss or destruction of significant scientific, cultural, or historical resources because the mitigation measures presented in the HPTP will help to prevent any loss or destruction to these areas. State Historic Preservation Office (SHPO) consultation will be ongoing throughout the process to ensure that mitigation is properly administered.

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the *Endangered Species Act of 1973*.** The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the *Endangered Species act of 1973*, because information was reviewed including a literature search, secondary data provided by TNF, a review of previous studies conducted in the area, and a field visit. The Arizona Game and Fish Department's On-line Environmental Review Tool was accessed to obtain a list of special status species for records of occurrence within a 3-mile radius of the Project. A Project *Biological Assessment* was also completed that addressed federal species and their designated Critical Habitat. A separate TNF document was also prepared to address migratory bird species protected under the federal *Migratory Bird Treaty Act*. With the conclusion of these studies, no significant impacts on threatened and endangered species or critical habitat were found with the implementation of this Project.
10. **Whether the action threatens to violate Federal, State, or local law or requirements imposed for the protection of the environment.** The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA.

FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

The action is consistent with the TNF Land Management Plan. Planned activities are consistent with management area direction, comply with Forest Plan standards, and contribute to Forest Plan goals and objectives.

My decision is also based upon consideration of the best available science. I have reviewed the project records, which shows thorough review of relevant scientific information, consideration of responsible opposing views, and acknowledgement of incomplete or unavailable scientific information, scientific uncertainty, and risk.

IMPLEMENTATION

Implementation of the selected alternative will occur under the authority of this Decision Notice, subject to the appropriate appeal and implementation procedures cited below. Construction is expected to begin in early 2011.

ADMINISTRATIVE REVIEW (APPEAL) OPPORTUNITIES

This decision is subject to administrative review (appeal) pursuant to *36 CFR Part 215*.

Individuals or organizations who provided comment or otherwise expressed interest in the proposed action during the comment period may appeal. Interest expressed or comments provided on this project prior to or after the close of the comment period do not have standing for appeal purposes. The appeal must be filed (regular mail, fax, email, hand-delivery, express

delivery, or messenger service) with the appropriate Appeal Deciding Officer. Submit appeals to: Corbin Newman, Reviewing Appeal Officer, 333 Broadway SE, Albuquerque, NM 87102.

If hand delivered, the appeal must be received at the above address during business hours (Monday - Friday 8:00 am to 4:30 pm), excluding holidays. Electronic appeals may be submitted to appeals-southwestern-regional-office@fs.fed.us (.doc, .rtf, or .txt formats only). The appeal must have an identifiable name attached or verification of identity will be required. Names and addresses of appellants will become part of the public record. A scanned signature may serve as verification on electronic appeals.

Appeals, including attachments, must be in writing, fully consistent with *36 CFR 215.14*, and filed (postmarked) within 45 days following the date this notice is published in the *Arizona Capital Times.* This publication date is the exclusive means for calculating the time to file an appeal. Those wishing to appeal this decision should not rely upon dates or timeframes provided by any other source.

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

CONTACT

For additional information concerning this decision, contact: Troy Waskey, Recreation, Lands, and Minerals Staff, Tonto Basin Ranger District; 928-467-3230.

Thomas J. Klobuchar 8/24/2010

GENE BLANKENBAKER Date

Forest Supervisor

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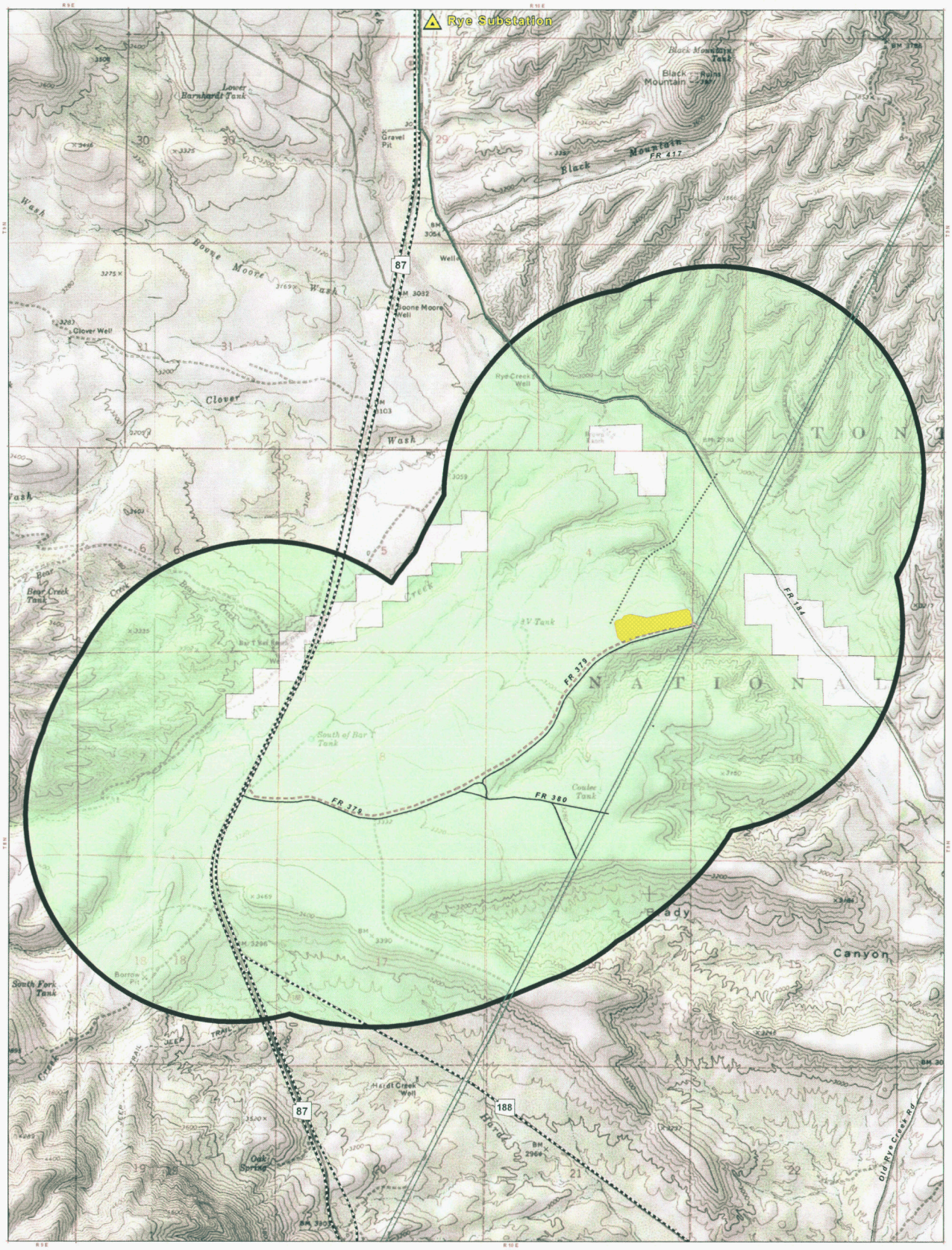
Brad Larsen, P.E.

Arizona Public Service Company
Project Manager
Transmission and Facility Siting

aps

EXHIBIT
A-2
ADMITTED



LEGEND

Project Features

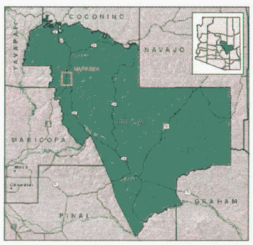
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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Witness Background

- Educational Background
  - BSEE in Electrical Engineering, Arizona State University
- Professional Background
  - Registered Professional Electrical Engineer in the State of Arizona since 1994

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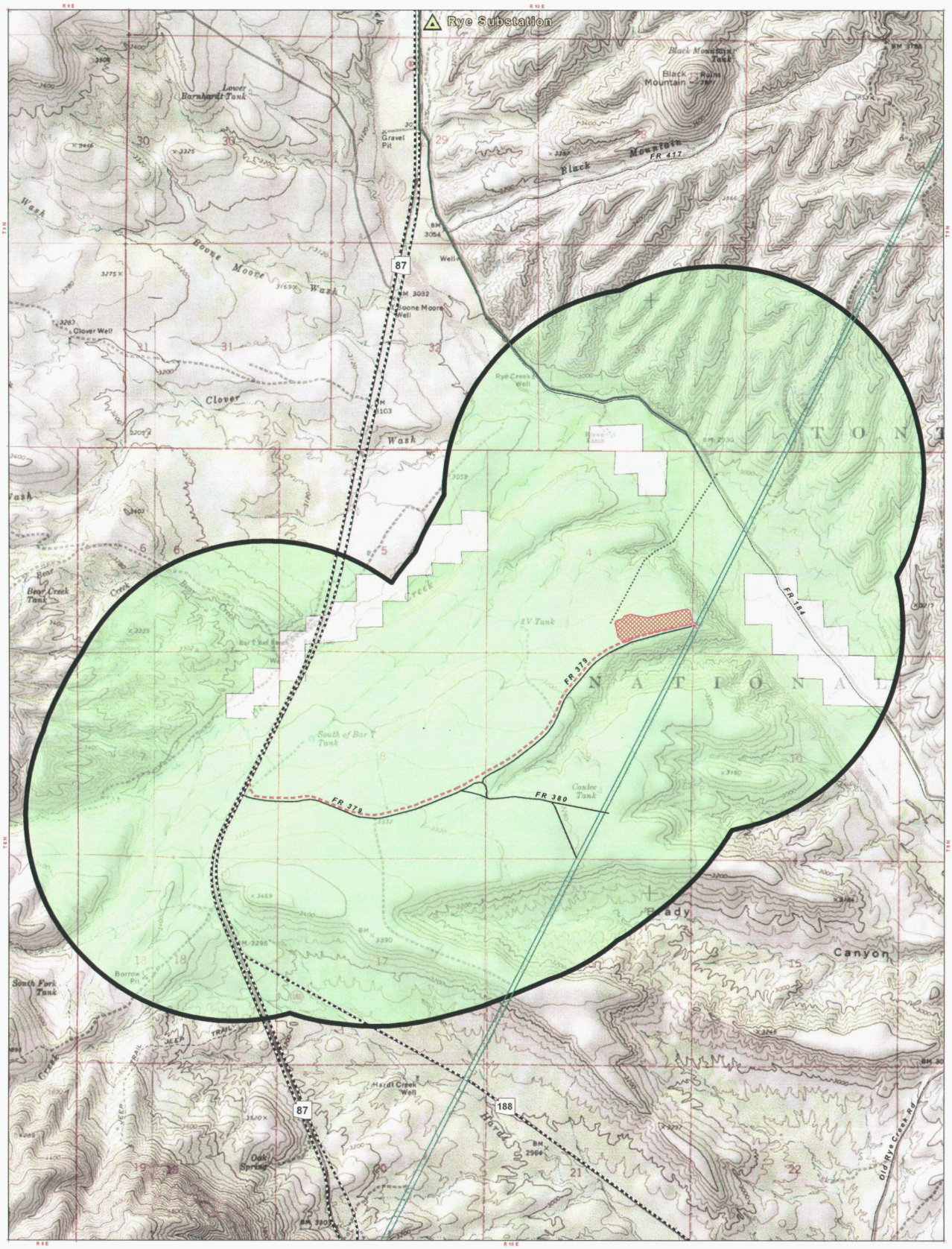

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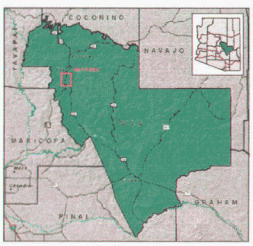

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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Witness Background (cont'd)

- Professional Background (cont'd)
  - 21 years of electric utility experience at APS
    - Transmission Line Siting Project Manager
    - Transmission/Sub-transmission Planning Engineer
    - Substation Engineering and Construction – Engineer/Supervisor
    - Underground Construction Project Management – Supervisor

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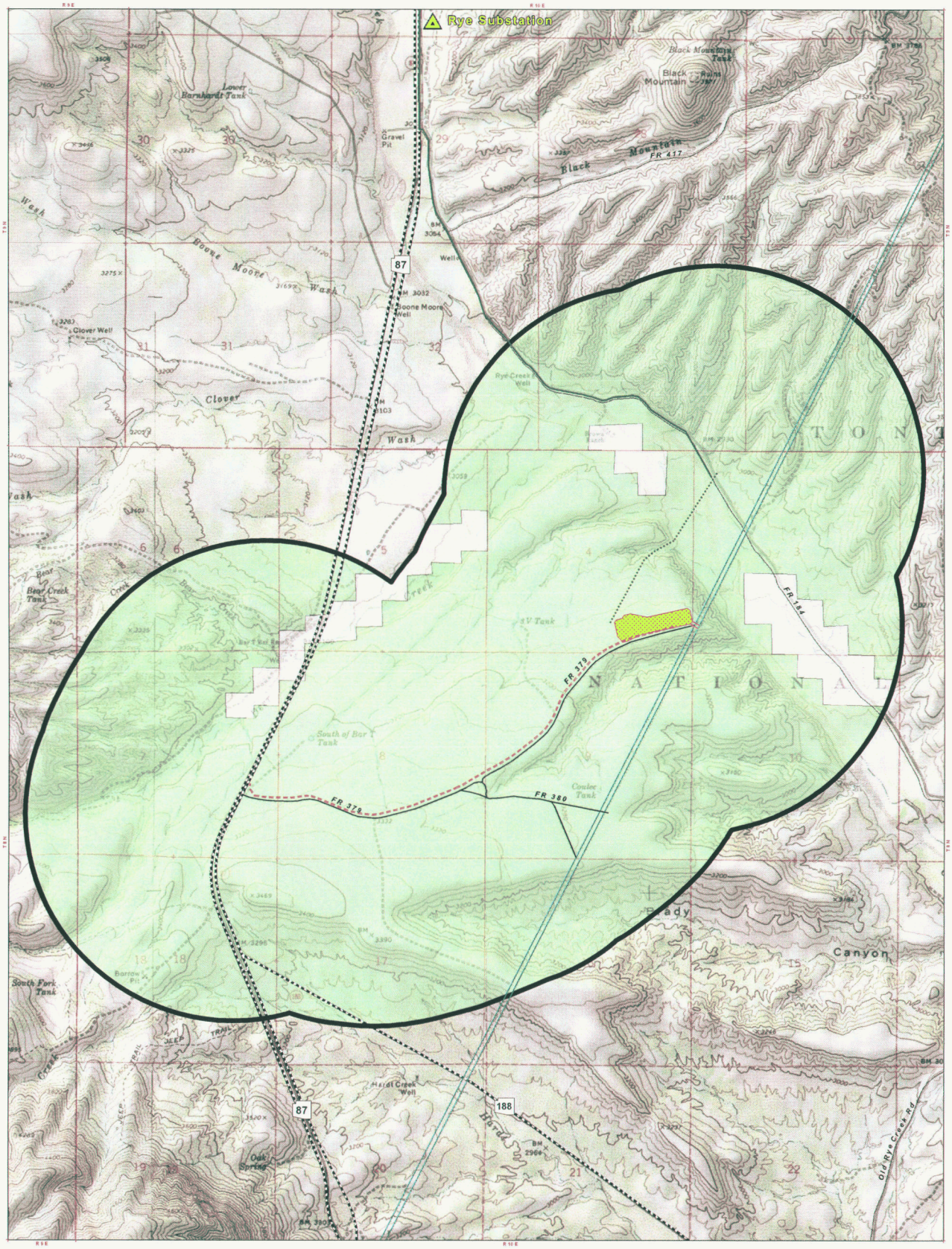

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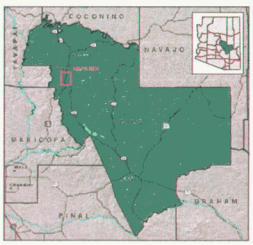

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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Outline of Testimony

- Project Description
- Project Benefits and Need

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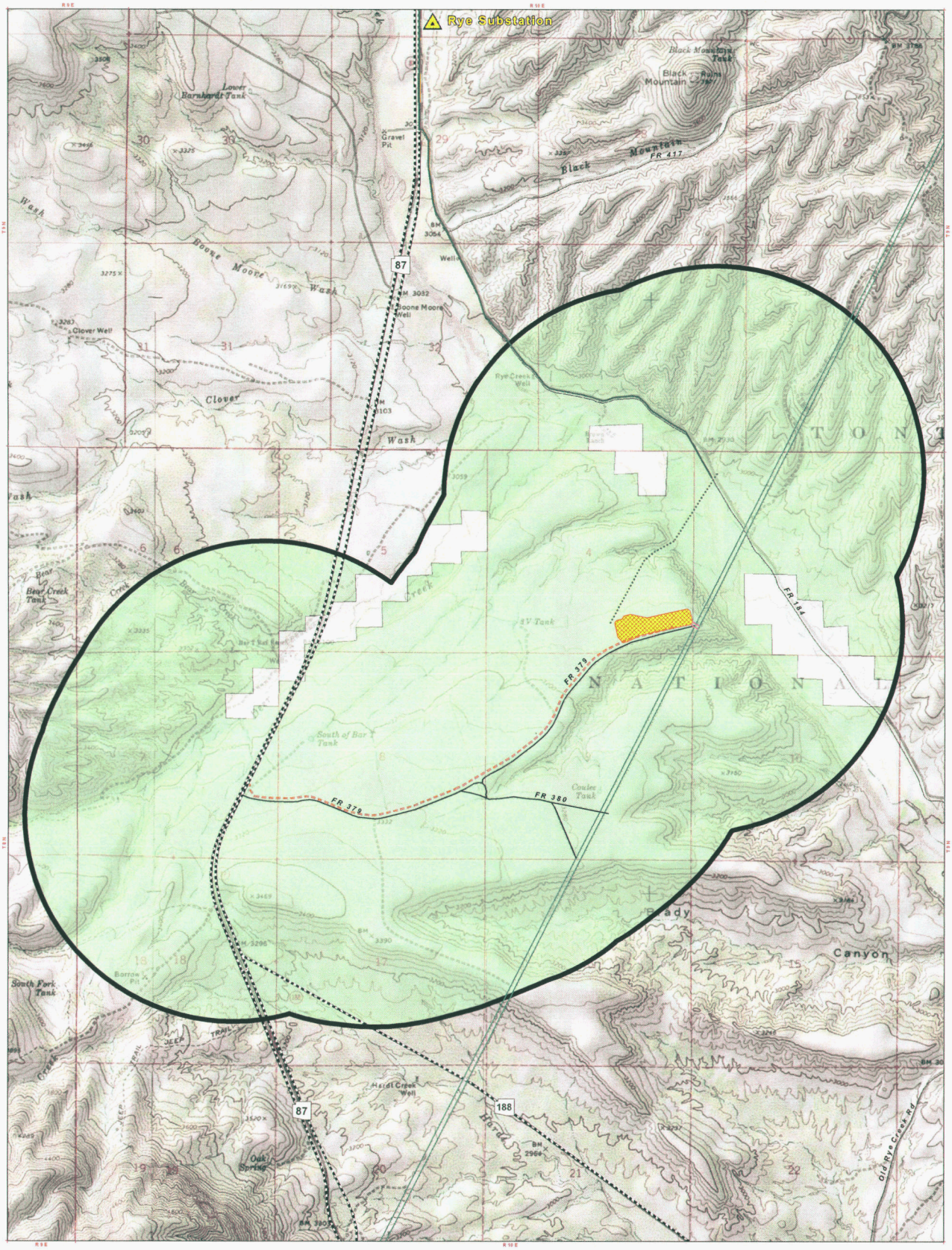

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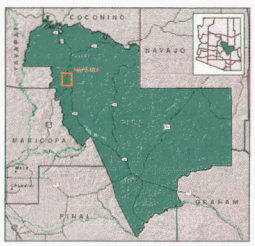

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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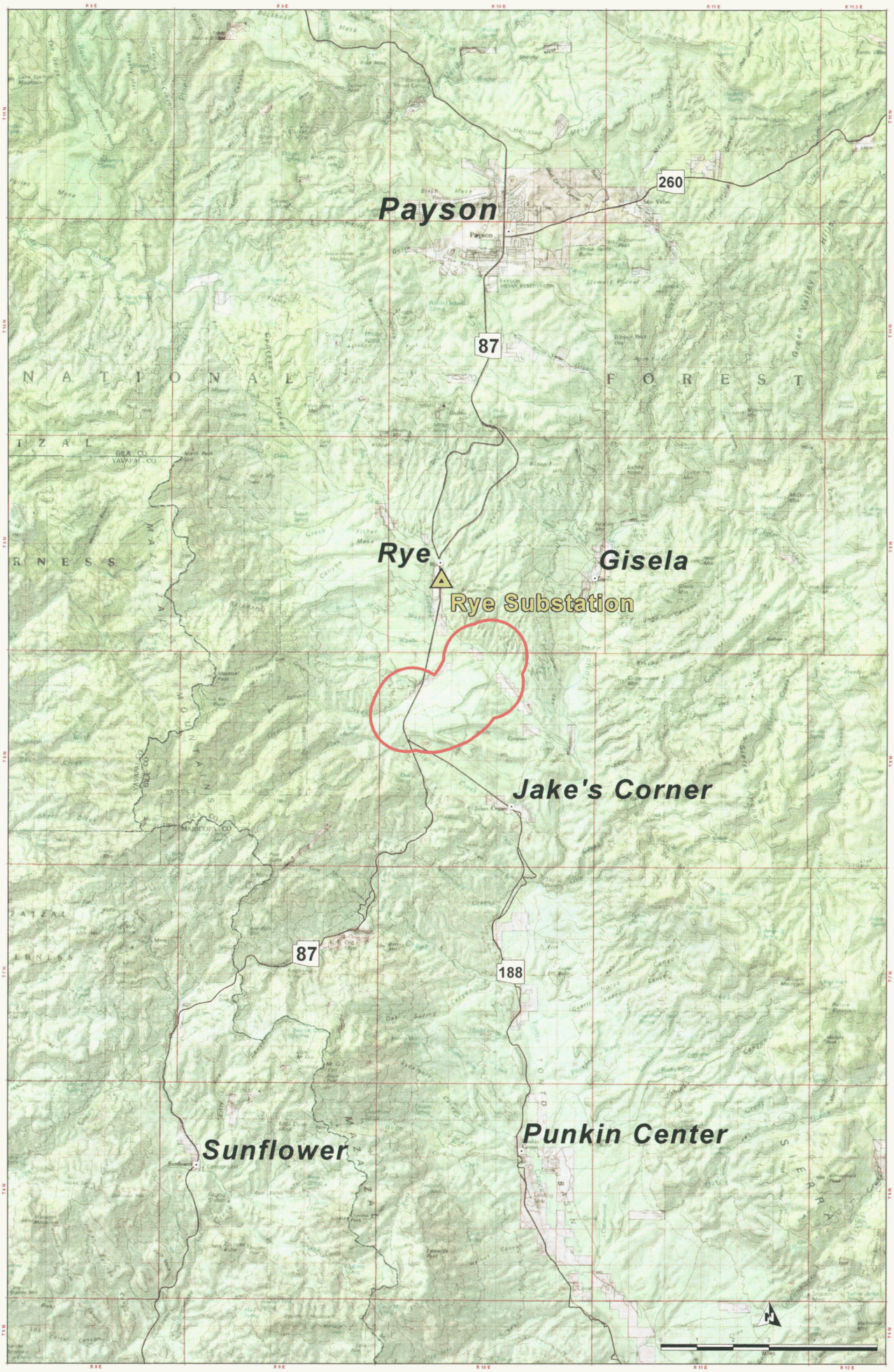
Project Description

- Project area is located within unincorporated Gila County
  - Gila County Board of Supervisors provided letter of support for Project
- Project is entirely on USFS land
  - Issued a Finding of No Significant Impact (FONSI) for the Project

aps


Payson
260
87
NATIONAL FOREST
Rye
Gisela
Rye Substation
Jake's Corner
87
188
Sunflower
Punkin Center

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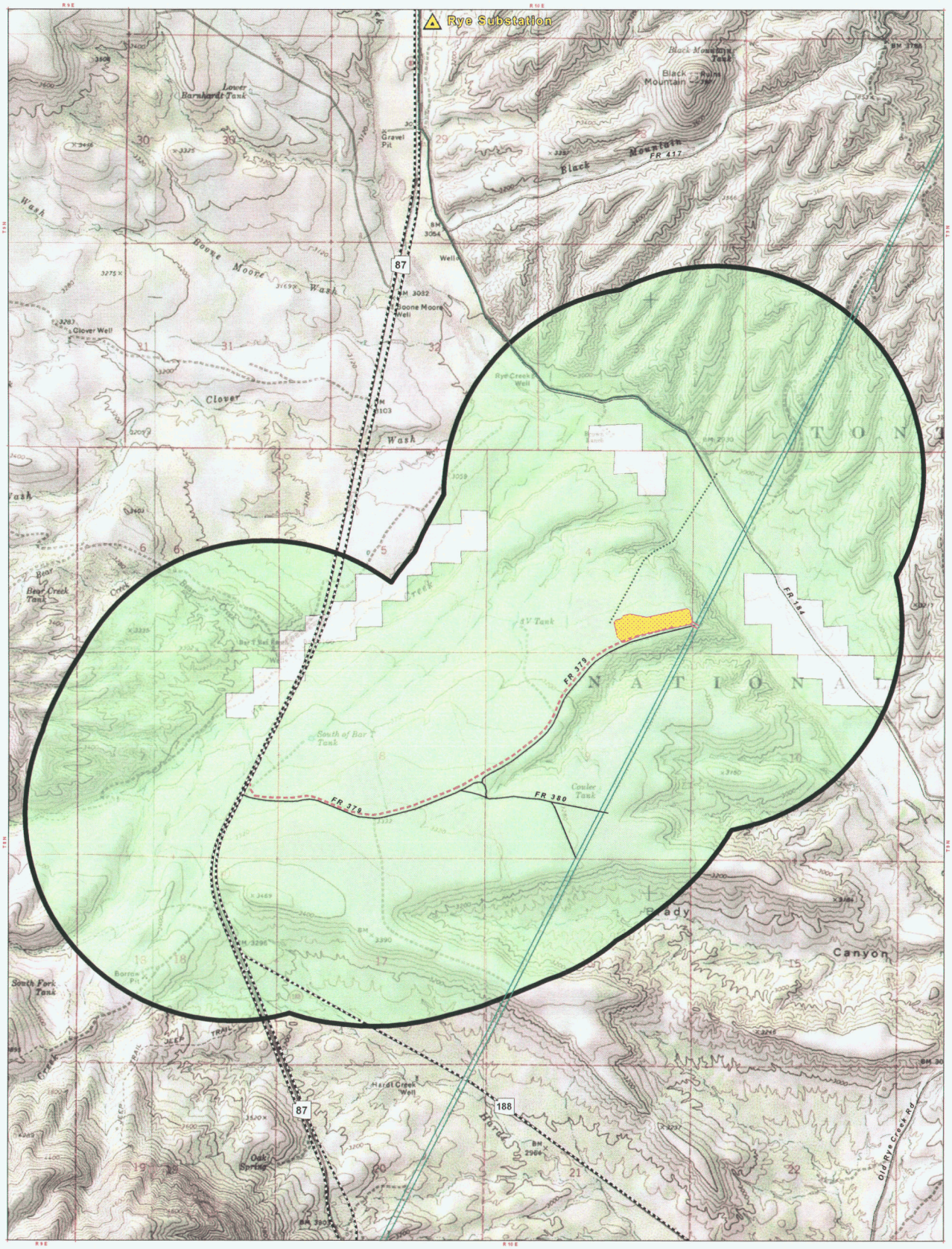

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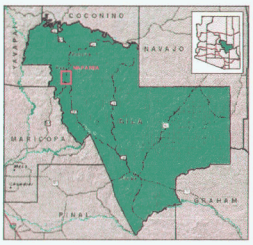

Land Ownership

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U.S. D. A. - FOREST SERVICE
TONTO BASIN RANGER DISTRICT, TONTO NATIONAL FOREST
GILA COUNTY, AZ

INTRODUCTION

The Arizona Public Service Company (APS) is the electric power supplier to communities in the Payson, Rye, Roosevelt Lake, and adjacent areas in Gila County, Arizona. APS is proposing to construct a 345/69/21 kilovolt (kV) substation and approximately 1 mile of two parallel double-circuit 69/21kV sub-transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas.

An *Environmental Assessment* (EA) was prepared to evaluate the proposal. Two alternatives were analyzed in detail by an interdisciplinary team: A *No Action* alternative would have the existing facilities continue to serve the Payson, Rye, and Tonto Basin areas at the same level of reliability; and the *Proposed Action* involves the construction of the 345/69/21kV substation and the 69/21kV sub-transmission line for increased reliability of power supplies to those communities. Further description of alternatives can be found in Chapter 2 of the EA. A copy of the final EA is available for public review at http://www.fs.fed.us/r3/tonto/projects/.

DECISION

This *Decision Notice* documents my decision and reasons for this decision. The purpose and need for this project is defined as construction of electrical facilities for increased reliability of electrical power to the communities of northern Gila County. Given the purpose and need, I have reviewed the environment affects of the proposed action and the no action alternative and carefully considered the public comments received on the draft EA. The analysis of the environmental effects, public input and management direction and policy considerations contributed collectively to determining the selected alternative. The information is contained in the Project record.

Based upon my review of the APS Mazatzal 345/69/21kV Substation EA, I have decided to implement Alternative 2, as described in the final EA, with the following changes and mitigation measures:

Changes to the Final EA

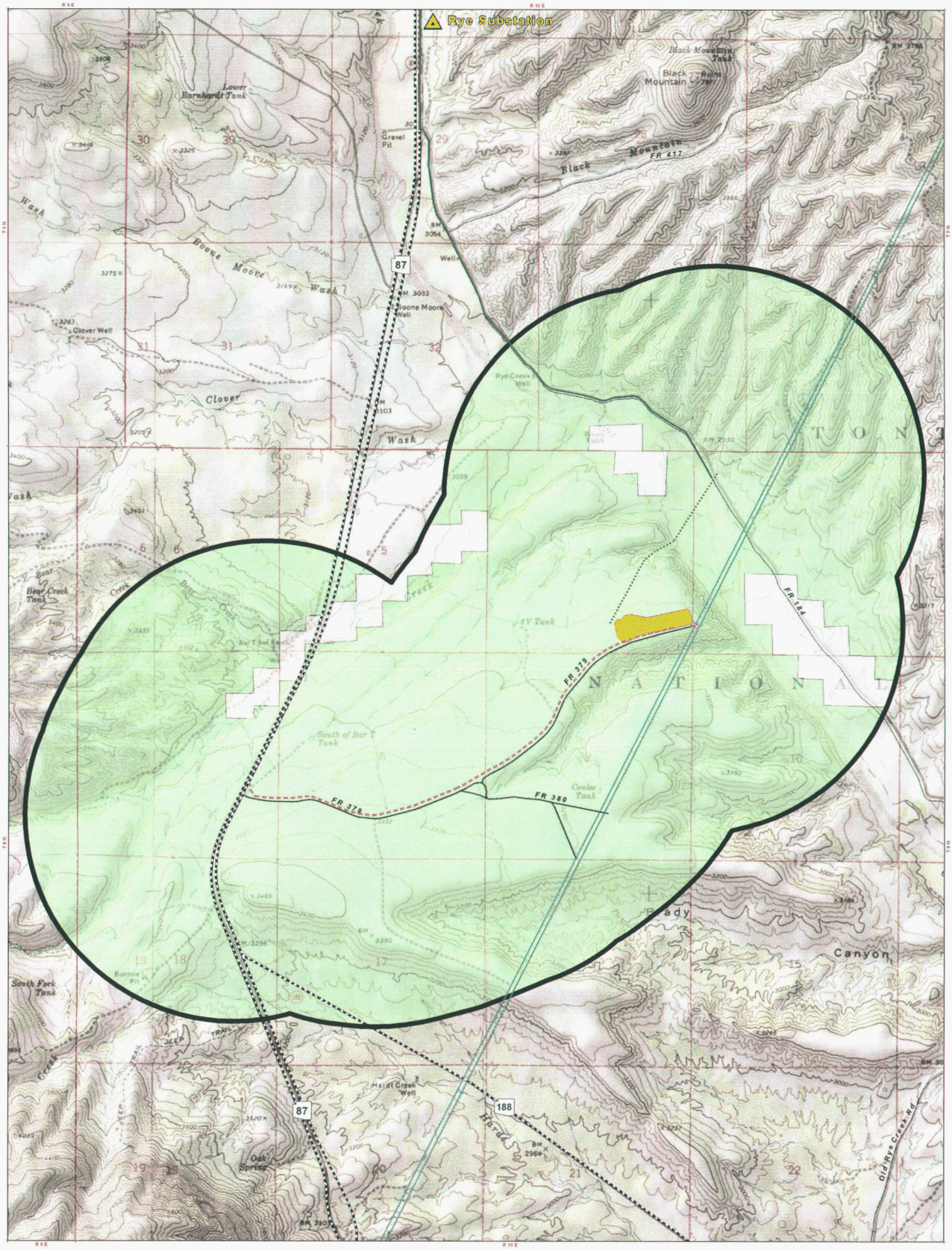
- References to wild burros in the vicinity of the study area were removed because they are not present in the area.

Project Description (cont'd)

- Involves interconnection of an existing 345kV transmission line and construction of new 345kV substation

- Immediately adjacent to existing 345kV transmission line

aps



LEGEND

Project Features

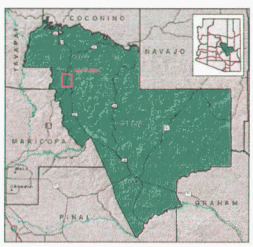
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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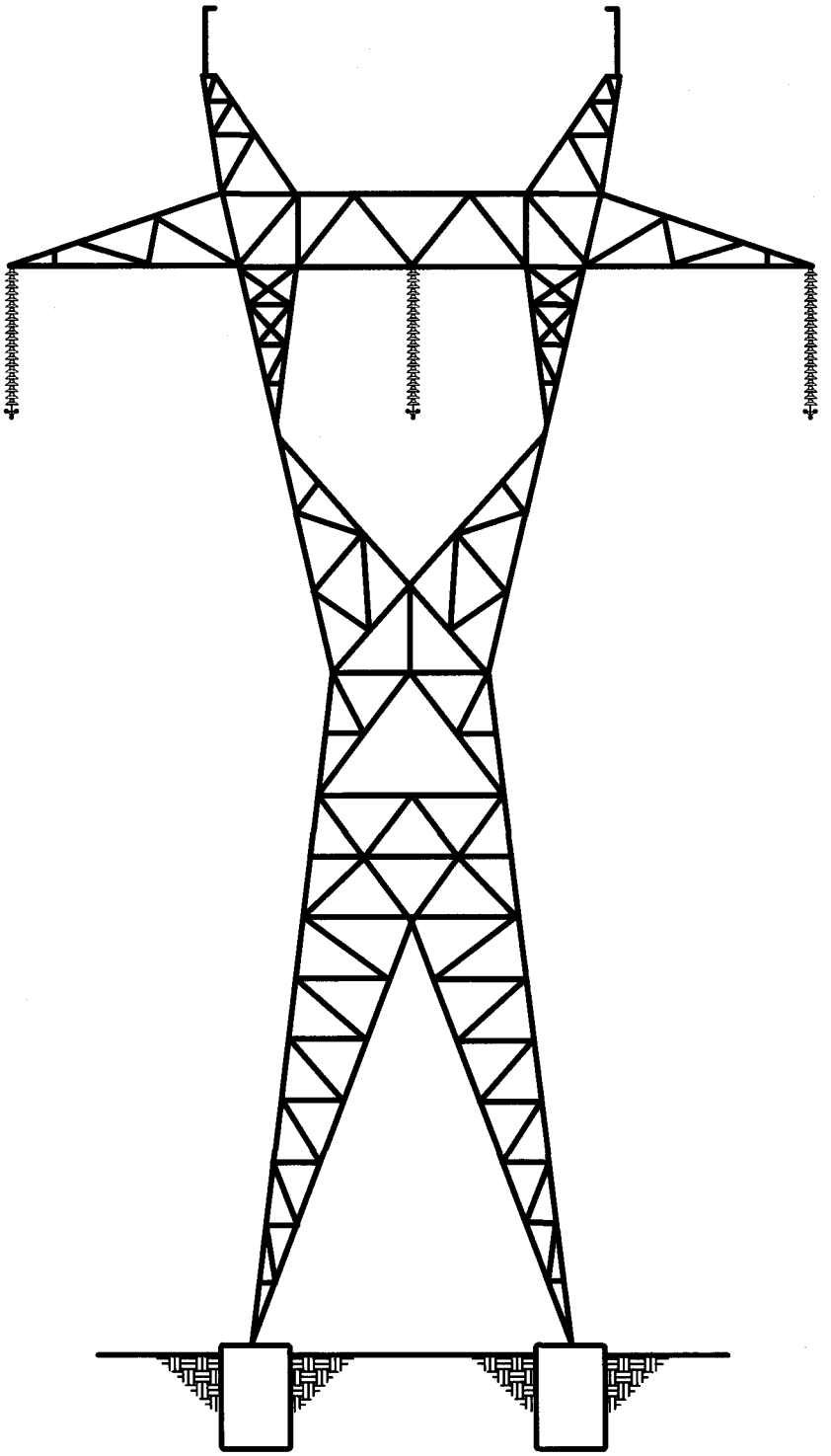
Facilities

- Transmission Interconnection
  - Transmission line length 600 feet
  - Lattice structures

- Substation
  - 20.1 acres in size
  - 345kV

aps



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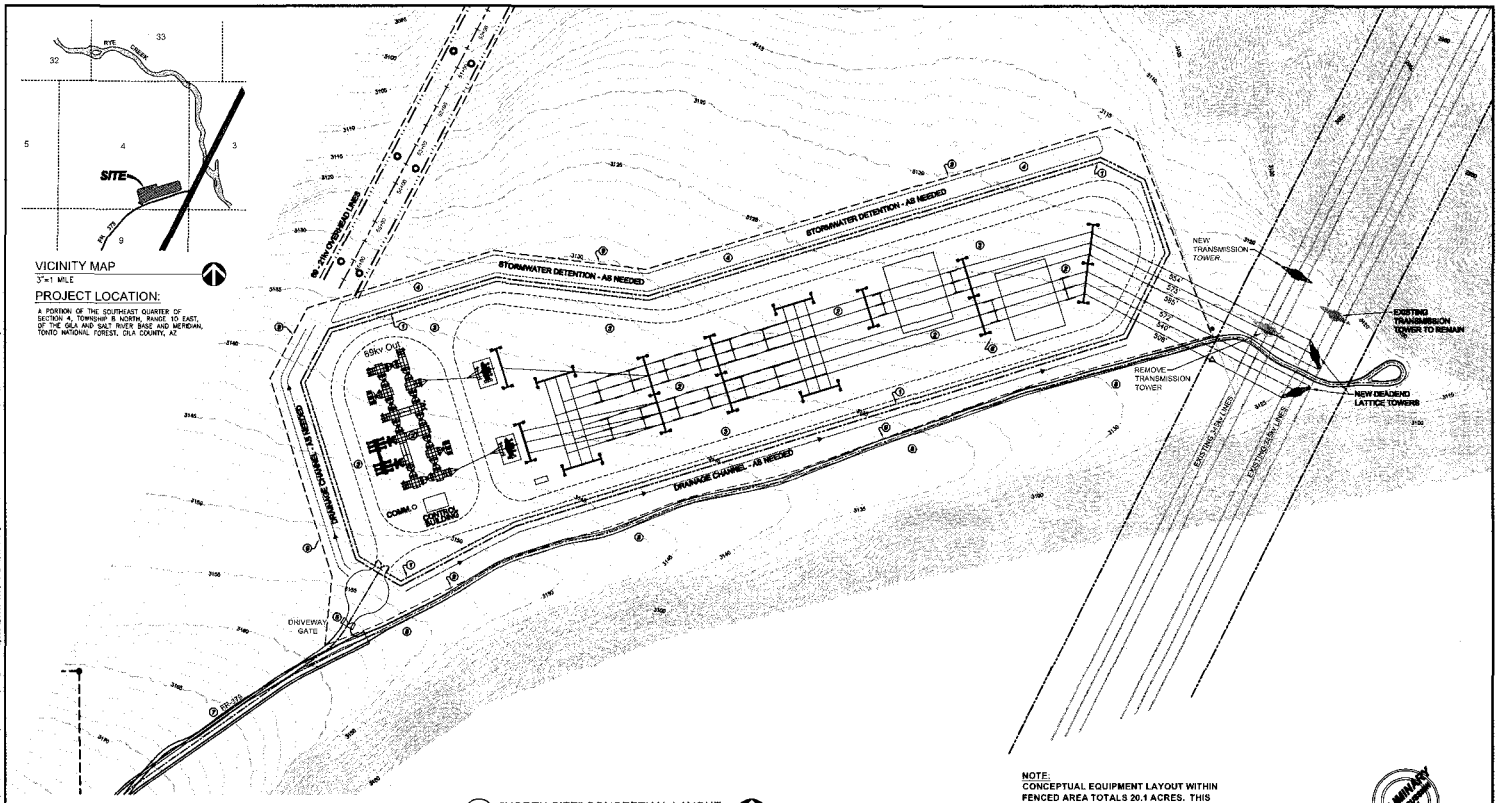

VICINITY MAP

3"=1 MILE

PROJECT LOCATION:

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 4, TOWNSHIP 8 NORTH, RANGE 10 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, TONTO NATIONAL FOREST, GILA COUNTY, AZ

1 "NORTH SITE" CONCEPTUAL LAYOUT

SCALE: 1" = 100'

0 50 100 200

NOTE:
CONCEPTUAL EQUIPMENT LAYOUT WITHIN FENCED AREA TOTALS 20.1 ACRES. THIS DOES NOT INCLUDE STORMWATER FACILITIES, ACCESS ROADS, DRIVEWAY, SAFETY SETBACK, OR LINE EASEMENTS & MAINTENANCE ROADS.

PRELIMINARY FOR REVIEW ONLY

PROJECT DESCRIPTION:

APS IS PLANNING A 345/69/21kv SUBSTATION ON THE INDICATED SITE. THE SUBSTATION IS USED TO RECEIVE POWER FROM THE INCOMING LINES AND THEN DISTRIBUTE THIS POWER AT LOWER VOLTAGE.

THE ELECTRICAL SUBSTATION IS AN UNMANNED FACILITY THAT WILL CONTAIN ELECTRICAL EQUIPMENT AND STEEL SUPPORT STRUCTURES AS WELL AS AN ENCLOSURE FOR THE STATION'S ELECTRONIC AND COMPUTERIZED CONTROLS. ONCE COMPLETED, THE ONLY TRAFFIC/PERSONNEL ANTICIPATED AT THE SITE WILL BE FOR SHORT DURATION MONTHLY INSPECTIONS OF THE STATION'S EQUIPMENT AND BACK-UP SYSTEMS.

ACCESS BY FIRE PERSONNEL ONLY AFTER ALL EQUIPMENT HAS BEEN DE-ENERGIZED AND A QUALIFIED APS REPRESENTATIVE IS PRESENT TO ASSURE NO ELECTRICAL HAZARD EXISTS.

GENERAL NOTES:

1. DEVELOPMENT AND USE OF THIS SITE WILL CONFORM WITH ALL APPLICABLE FOREST SERVICE REQUIREMENTS.
2. NO ON-SITE DUSK TO DAWN TYPE LIGHTING REQUIRED.
3. THERE SHALL BE NO SANITARY SEWER OR POTABLE WATER LINES REQUIRED FOR THIS PROJECT.
4. VEGETATION TO BE ESTABLISHED IN AREAS OF DISTURBANCE OUTSIDE OF PERIMETER.

SITE PLAN KEYNOTES:

1. 9' CHAINLINK FENCE
2. ELECTRICAL EQUIPMENT
3. 6" ABC INTERIOR SURFACE
4. STORMWATER DETENTION
5. 30' SWING GATE
6. POSSIBLE ARCHEOLOGICAL SITES
7. 30' ACCESS FR-379
8. 12' WIDE UPGRADE TO FR-379
9. PROPOSED DISTURBANCE LIMITS

PROJECT DATA:

FENCED AREA:	= 20.1 ACRES / 875,556 S.F.
10' SAFETY AREA:	= 1.1 ACRES / 47,827 S.F.
TOTAL DISTURBED AREA:	= 28.1 ACRES / 1,224,036 S.F.
EQUIPMENT HEIGHT:	= VARIES
30' ACCESS FR-379	= 11,500 LF / 2.2 MILES
12' FR-379 UPGRADE	= 2,200 LF / 0.42 MILES

LEGEND

	EXISTING	PROPOSED
MONUMENT LINE		
10' SAFETY SETBACK		
CHAINLINK FENCE		
FOREST SERVICE ROAD		
CONTOURS		
OVERHEAD 345kv		
ARCHEOLOGICAL AREA		
DETENTION AREA		
POSSIBLE DISTURBANCE		

NO.	DATE	REVISION	DWN	CHD	CKD	APVD	W. A.

"NORTH SITE" CONCEPTUAL LAYOUT
MAZATZAL SUBSTATION 345kv TO 21kv
TONTO NATIONAL FOREST, GILA COUNTY, AZ

APS

SCALE: AS SHOWN DATE: 01-25-10

DRAWN: CAN APPROVED:
DESIGNED: CAN ENGINEERING SUPERVISION
ENGINEERING: SHD REVIEWED: W. A.
W214014

2
APS DRAWING NO.

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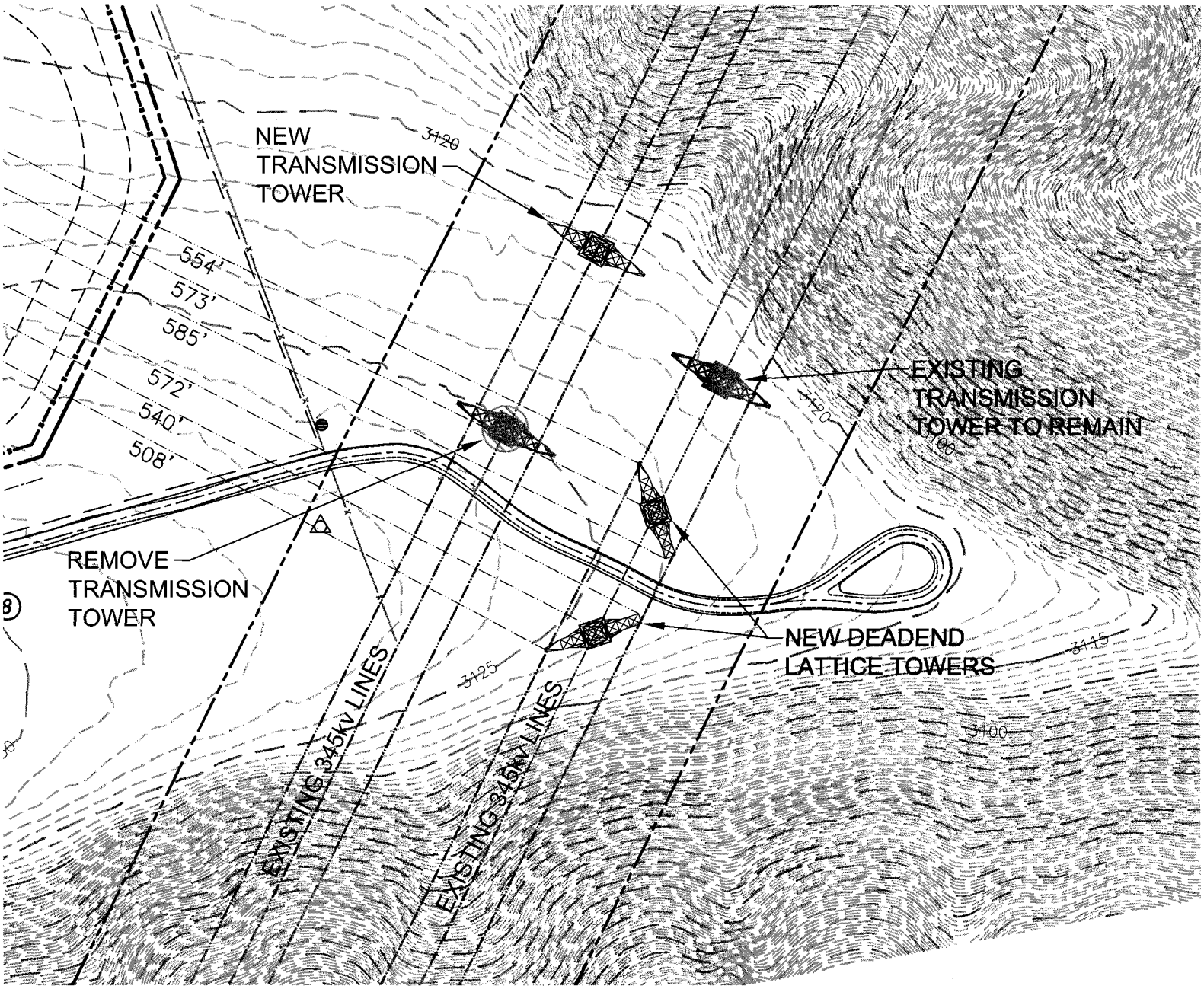
Facilities

- Transmission Interconnection
  - Transmission line length 600 feet
  - Lattice structures

- Substation
  - 20.1 acres in size
  - 345kV

aps


NEW
TRANSMISSION
TOWER
3120
554'
573'
585'
572'
540'
508'
EXISTING
TRANSMISSION
TOWER TO REMAIN
3120
3100
REMOVE
TRANSMISSION
TOWER
NEW DEADEND
LATTICE TOWERS
3115
3125
3100
EXISTING 345kV LINES
EXISTING 345kV LINES

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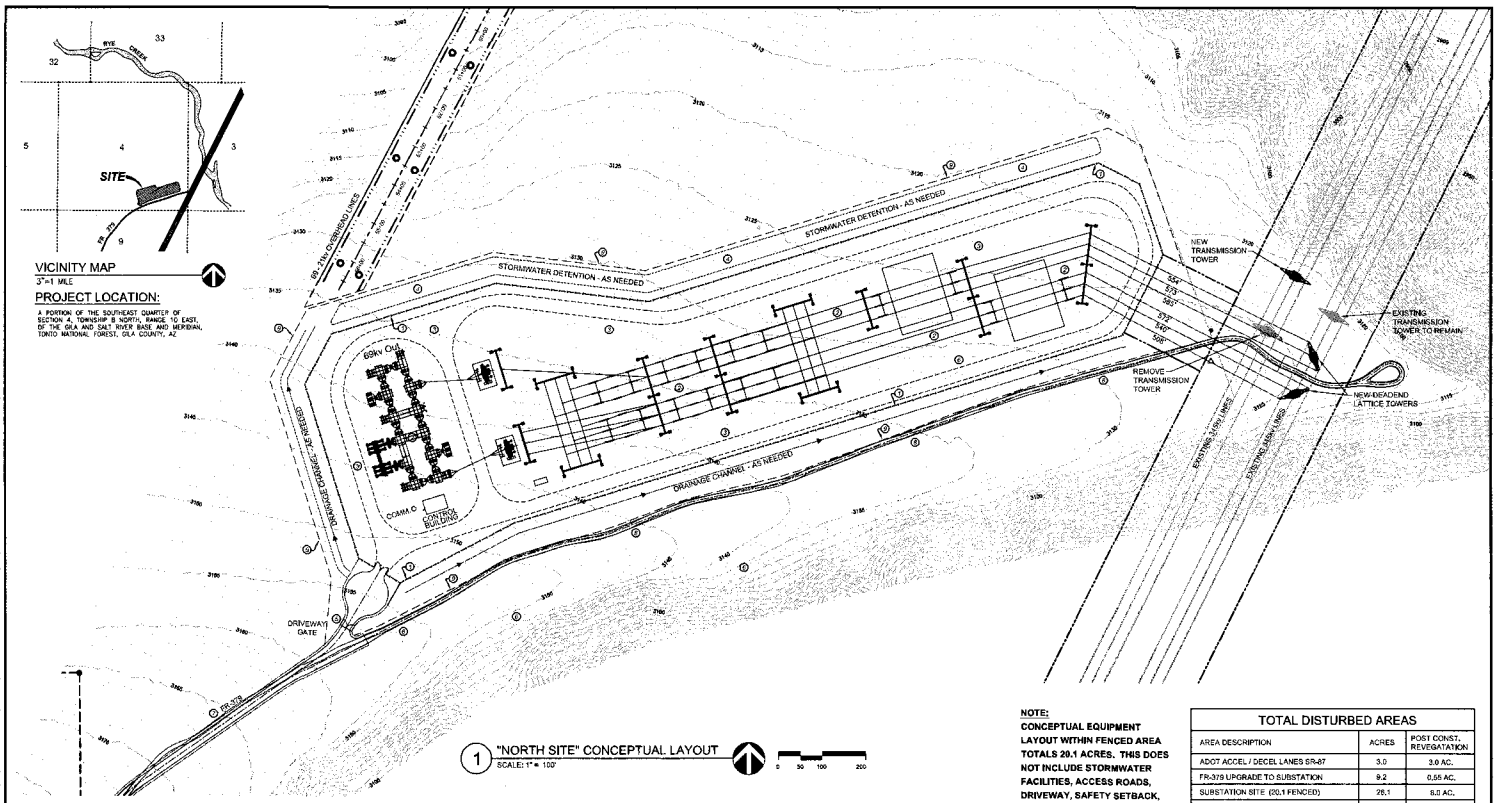

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TOTAL DISTURBED AREAS		
AREA DESCRIPTION	ACRES	POST CONST. REVEGATATION
ADOT ACCEL / DECEL LANES SR-87	3.0	3.0 AC.
FR-379 UPGRADE TO SUBSTATION	9.2	0.55 AC.
SUBSTATION SITE (20.1 FENCED)	28.1	8.0 AC.
69kv 100' LINE CORRIDOR & ACCESS	11.4	0 AC.
TOTAL ACRES	51.7 AC.	11.55 AC.

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LEGEND

	EXISTING	PROPOSED
MONUMENT LINE		
CHAINLINK FENCE		
FOREST SERVICE ROAD		
CONTOURS		
OVERHEAD 345kv		
ARCHEOLOGICAL AREA		
DETENTION AREA		

NO.	DATE	REVISION	DWN	DSD	CKD	RVWD	W.A.

"NORTH SITE" CONCEPTUAL LAYOUT (EA EXHIBIT)
MAZATZAL SUBSTATION 345kv TO 21kv
TONTO NATIONAL FOREST, GILA COUNTY, AZ

APS

SCALE AS SHOWN DATE 06-20-10

DRAWN CAN APPROVED
CHECKED CAN CHIEF ENGINEER SUPERVISOR
ENGINEER SHO REVIEWED W.O. W214014

2
APS DRAWING NO.

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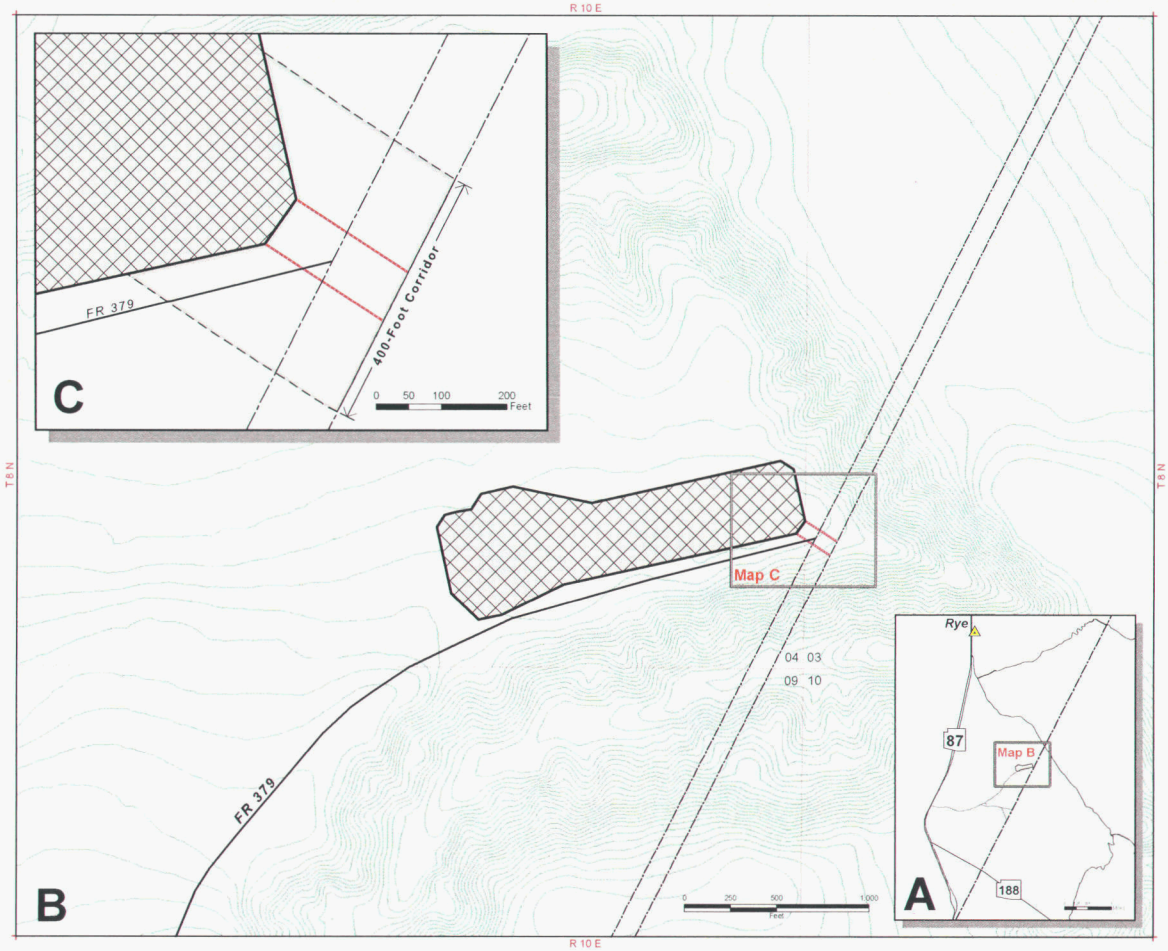
CEC Corridor/Right-of-Way Requested

- Substation
  - Footprint 20.1 acres
- Transmission line
  - 400 foot width

aps

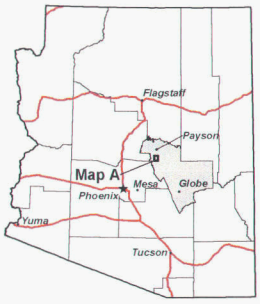


Mazatzal Substation and 345kV Interconnection Project

Proposed Interconnection

LEGEND

- Proposed Substation
- 345kV Interconnection
- 345kV Right-of-Way (400 feet)
- Existing Substation
- Existing 345kV Transmission Line
- Road
- 10 Section Line



January 2011

Sources: StreetMap USA, ESRI 2007; EPG 2008.

APS

epg

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Current Schedule

- Forest Service Special Use permitting and project design currently underway
- Begin construction in 2011
- Project in-service date in 2014

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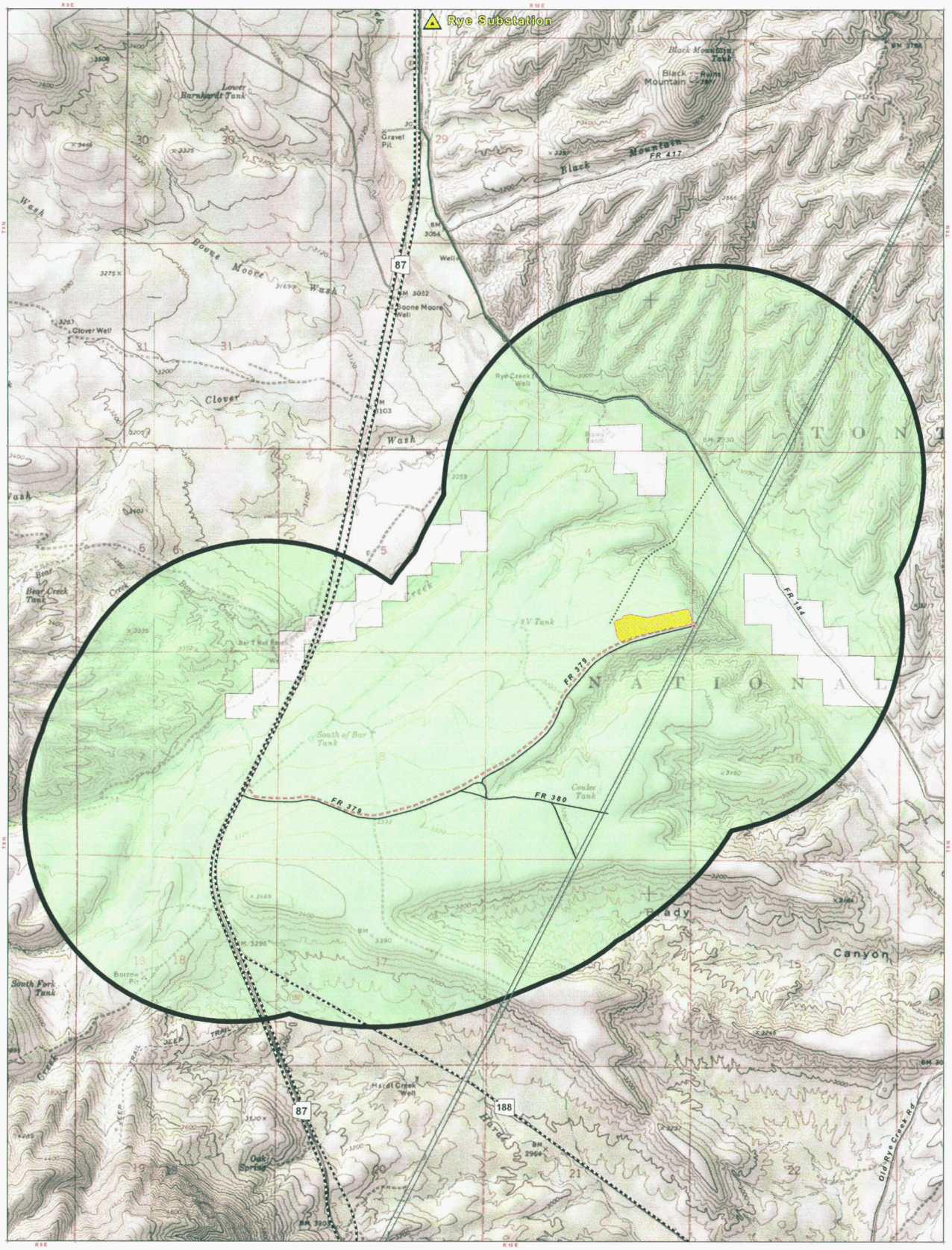


LEGEND

Project Features

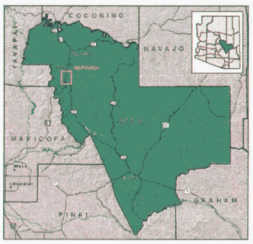
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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Project Cost

- Right-of-way: $1.0 million
- Construction: $22.6 million
- Total cost: $23.6 million

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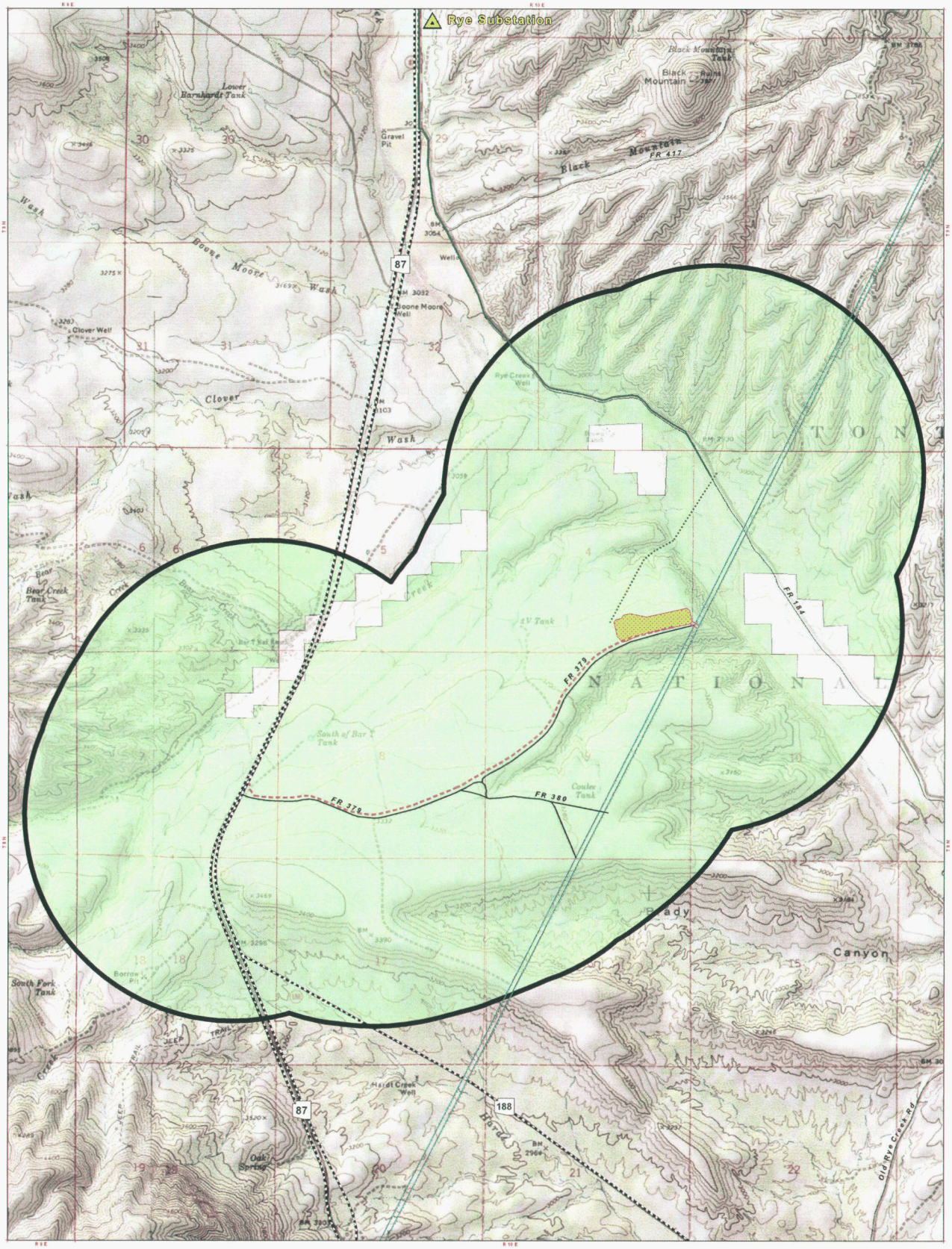

LEGEND

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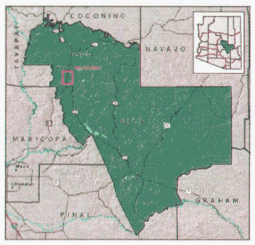

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

0 0.25 0.5 1 Miles

January 2011

APS

epg

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Project Purpose and Need

- Provide a transmission source south of Payson, creating a looped 69kV system
- Provide capacity for project load growth in the Payson, Rye, and Tonto Basin areas, and develop the 69kV system for meeting long-term needs
- Improve power quality in the area by providing a stable voltage source

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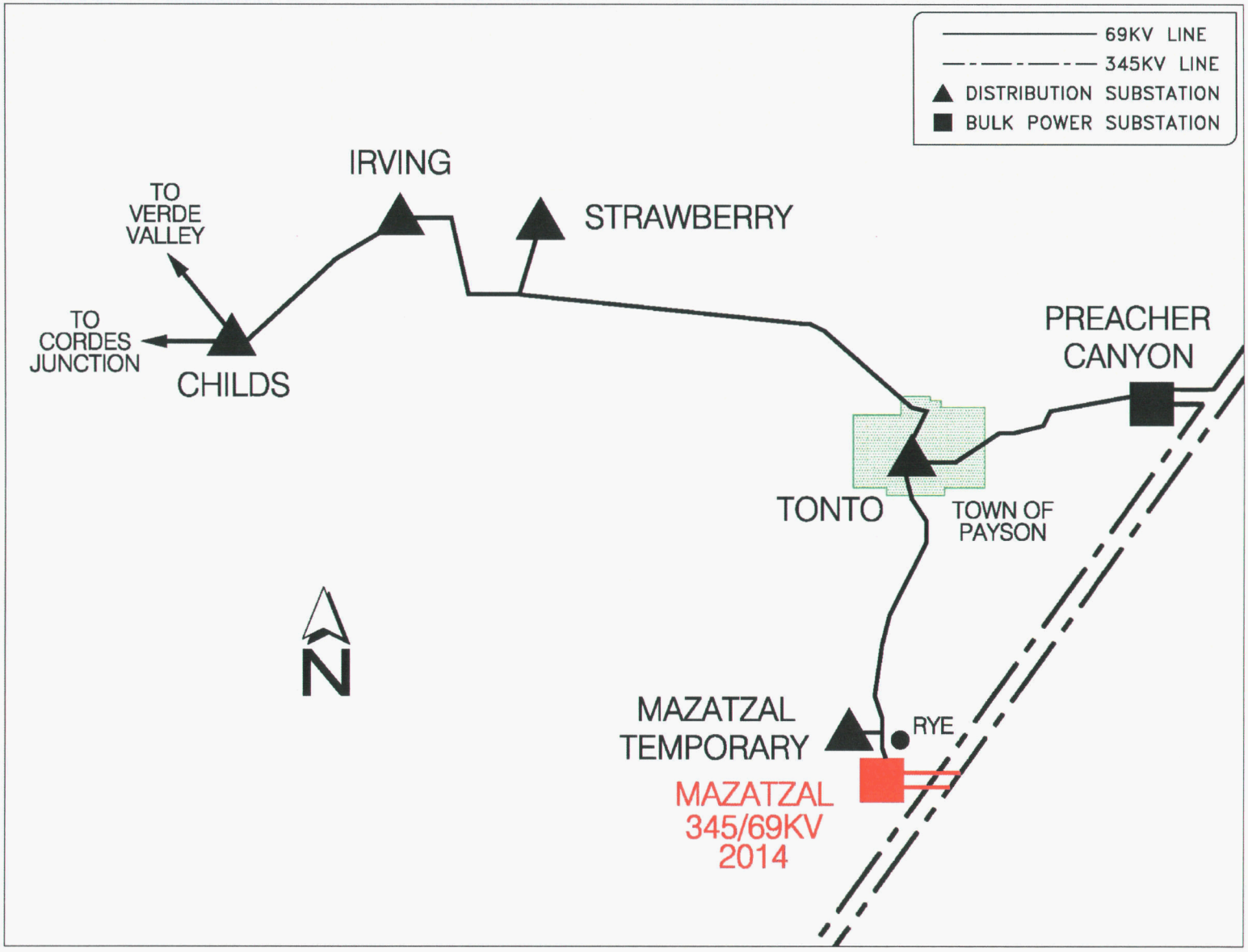
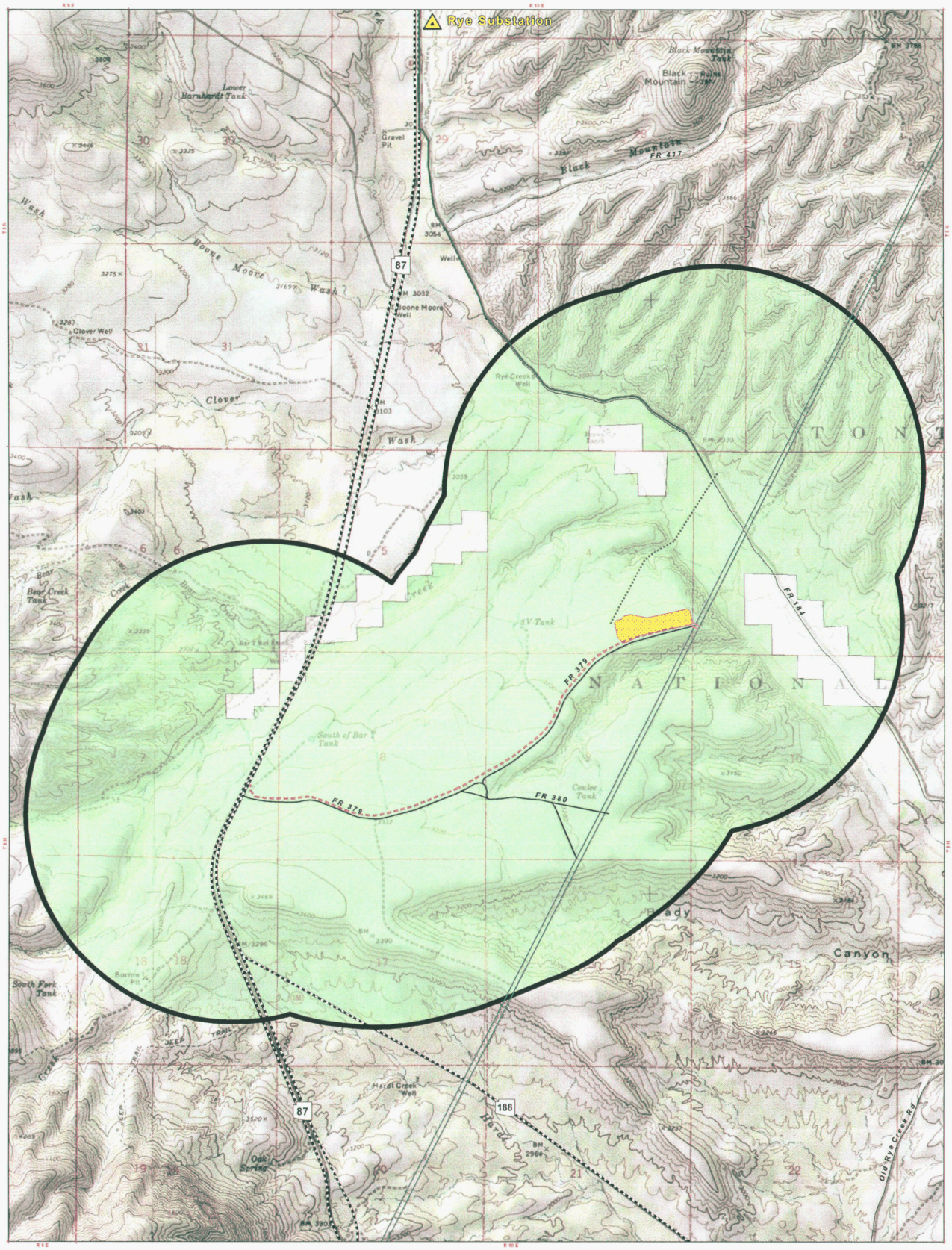

69KV LINE
345KV LINE
DISTRIBUTION SUBSTATION
BULK POWER SUBSTATION
IRVING
STRAWBERRY
TO VERDE VALLEY
TO CORDES JUNCTION
CHILDS
PREACHER CANYON
TONTO
TOWN OF PAYSON
N
MAZATZAL TEMPORARY
RYE
MAZATZAL 345/69KV 2014

Brad Larsen, P.E.

Arizona Public Service Company
Project Manager
Transmission and Facility Siting

aps



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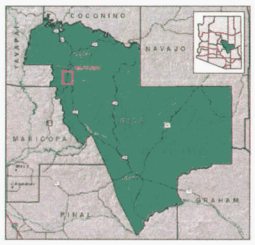

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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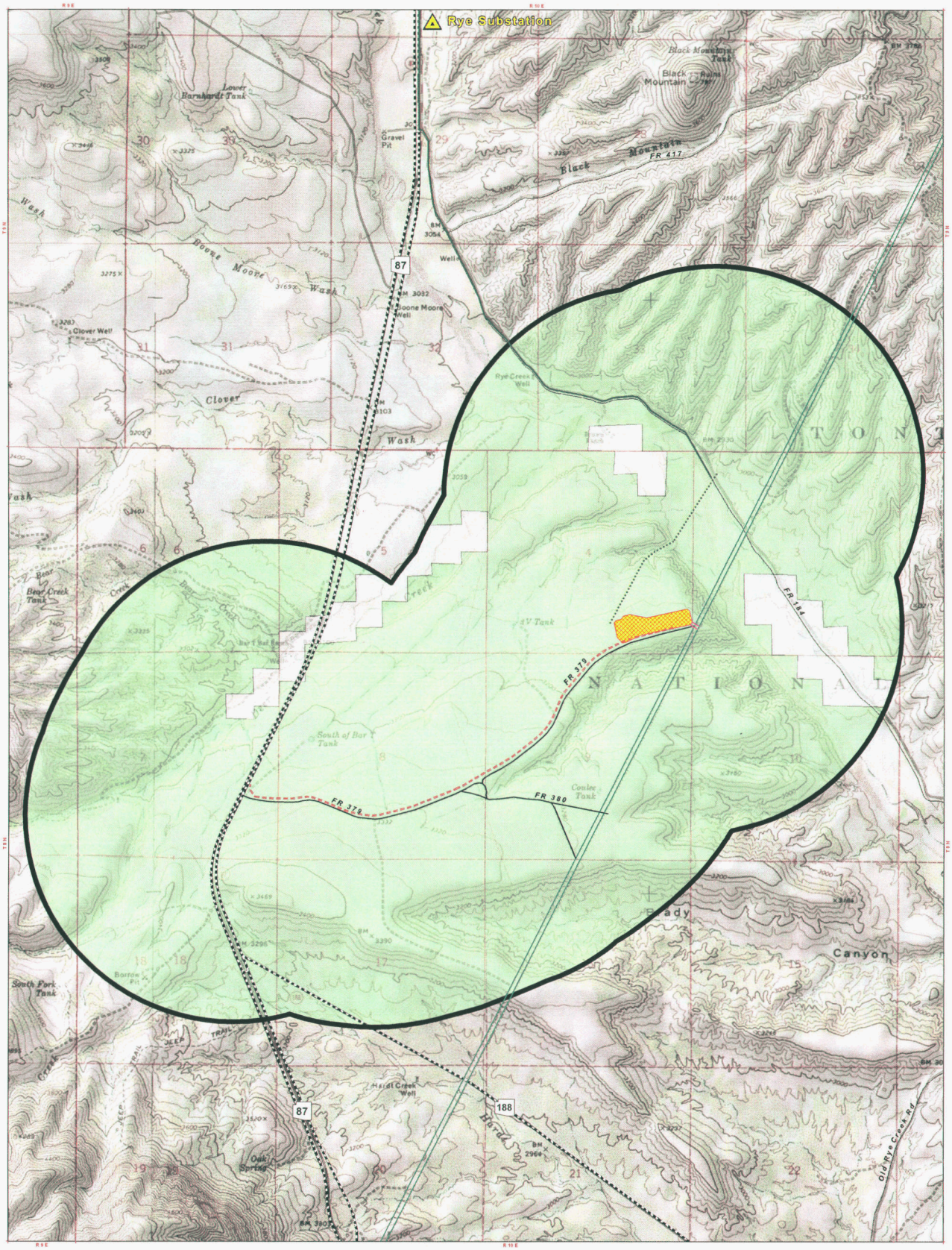
Kevin Duncan, AICP

Environmental Planning Group (EPG)
Project Manager

aps

EXHIBIT
A-3
ADMITTED



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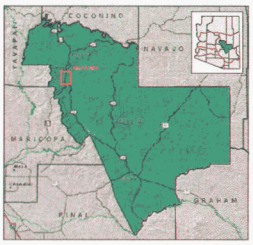

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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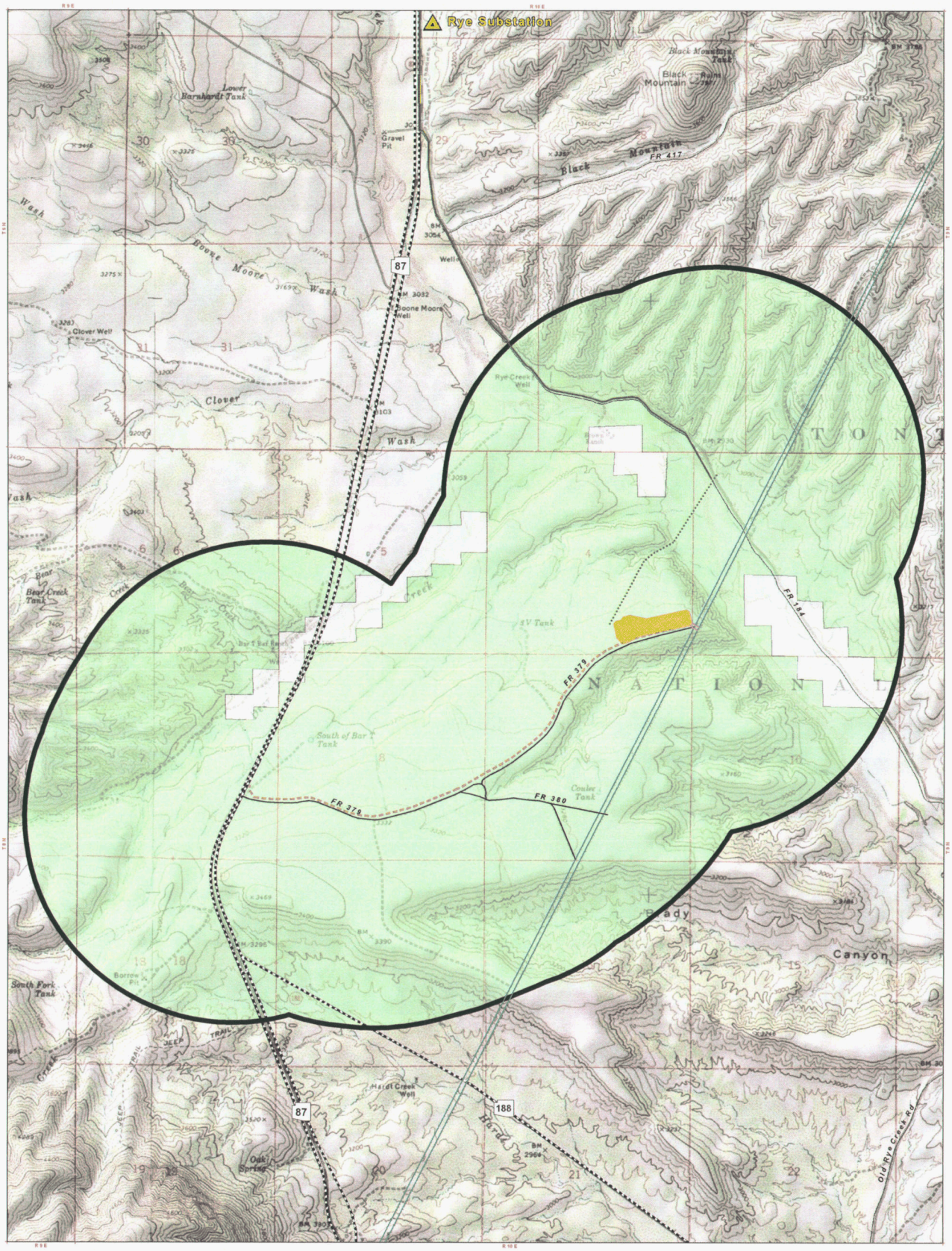
Witness Background

- Project Manager, Senior Environmental Planner at EPG
- 9 years of experience as an environmental planner
- Managed or participated in over 15 major transmission line projects
- BS, Urban Planning, University of Utah
- Certified member of the American Institute of Certified Planners
- Former board member of American Planning Association Arizona Chapter

aps



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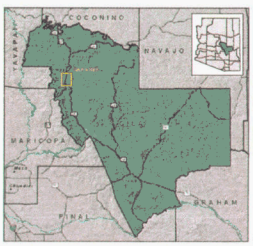

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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Witness Background (cont'd)

- Project Manager for and testified in case numbers:
  - 143: APS Bagdad 115kV Transmission Line Relocation Project
  - 157: TEP DMP Substation to Tucson Substation 138kV Transmission Line Project

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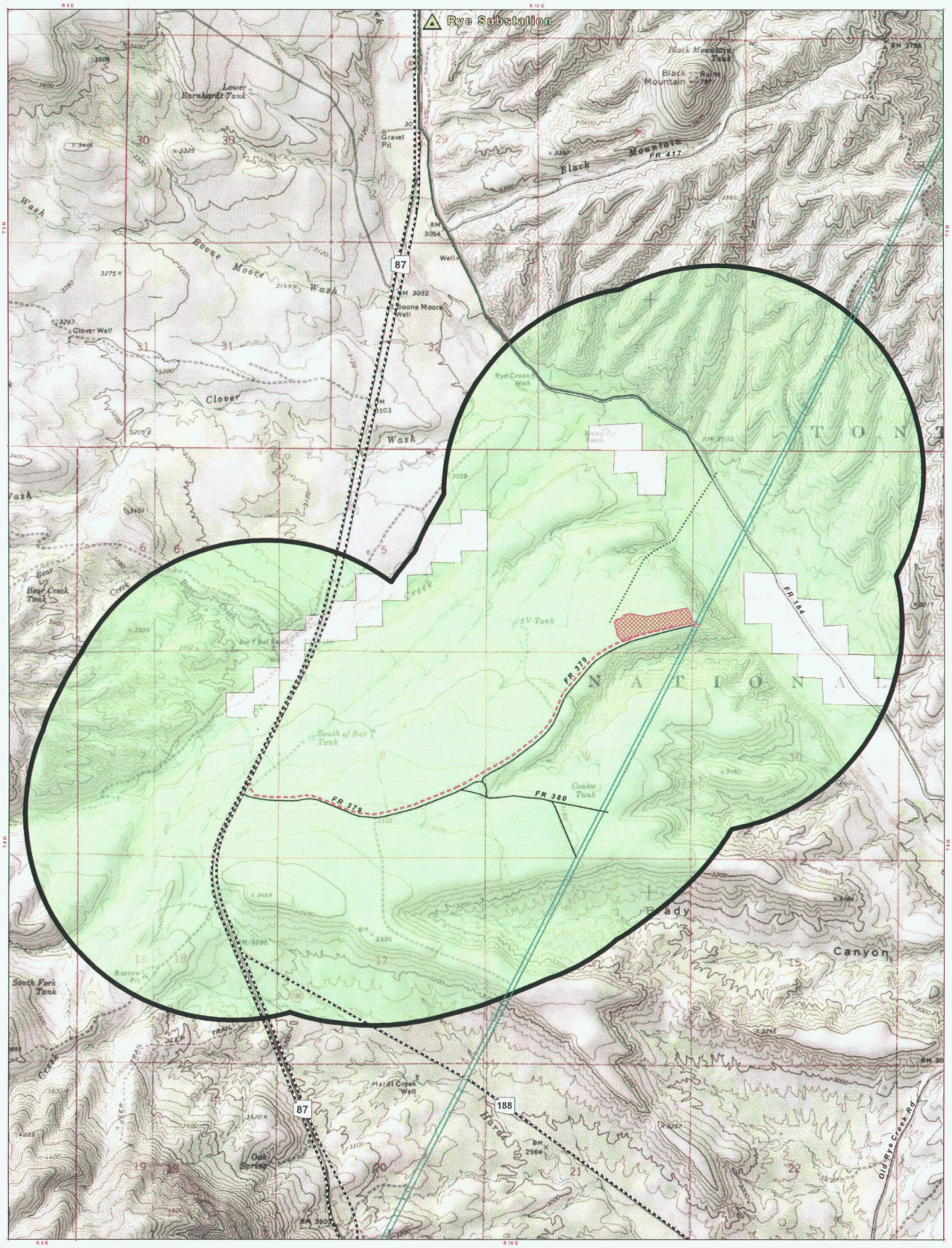

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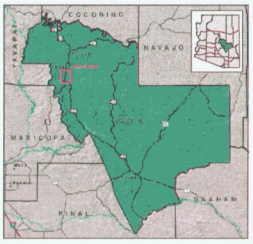

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

0 0.25 0.5 1 Miles

January 2011

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Outline of Testimony

- Overview of environmental studies
- Public participation
- Environmental compatibility

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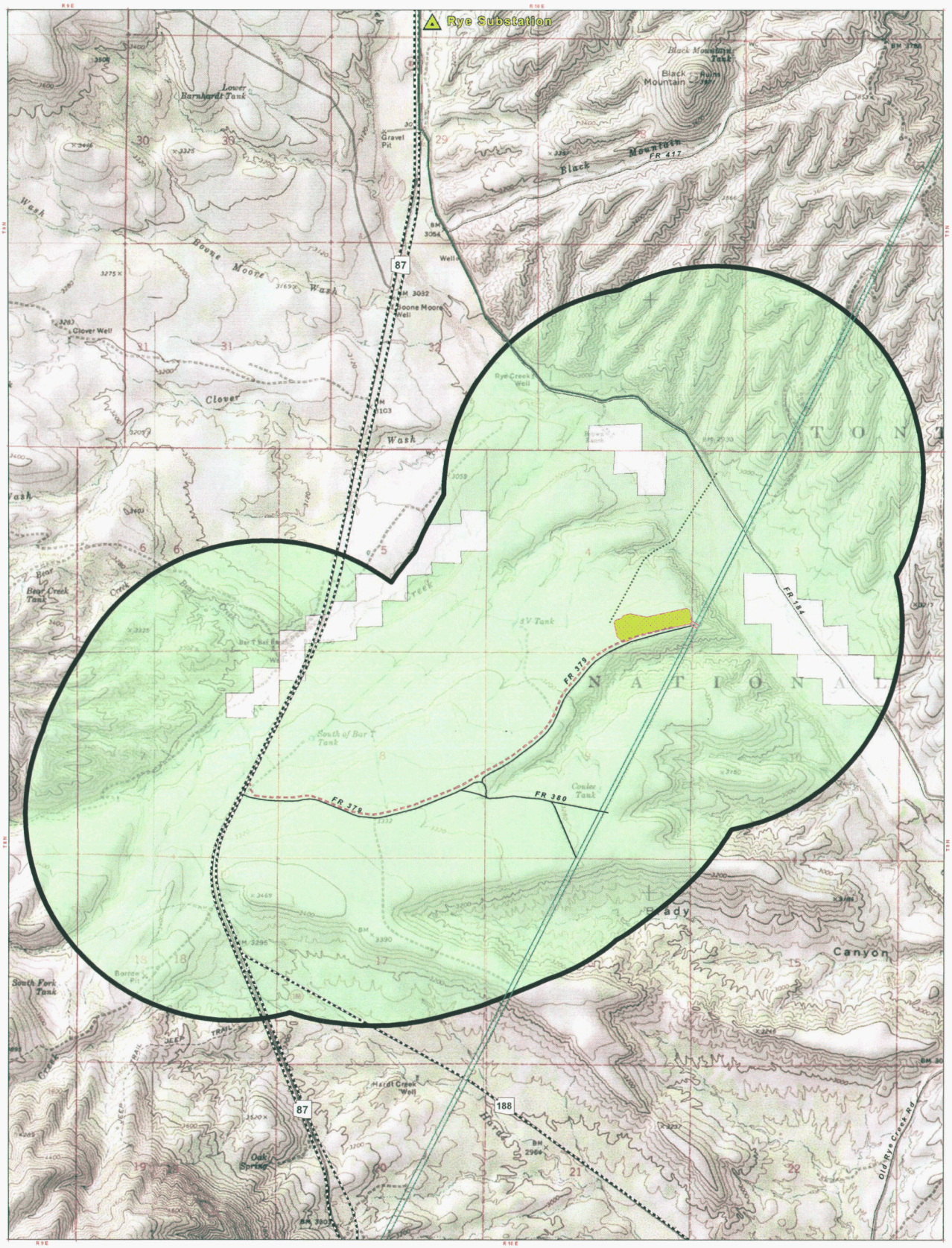

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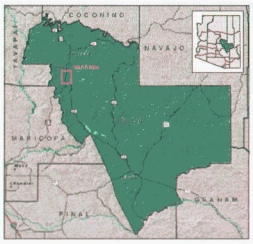

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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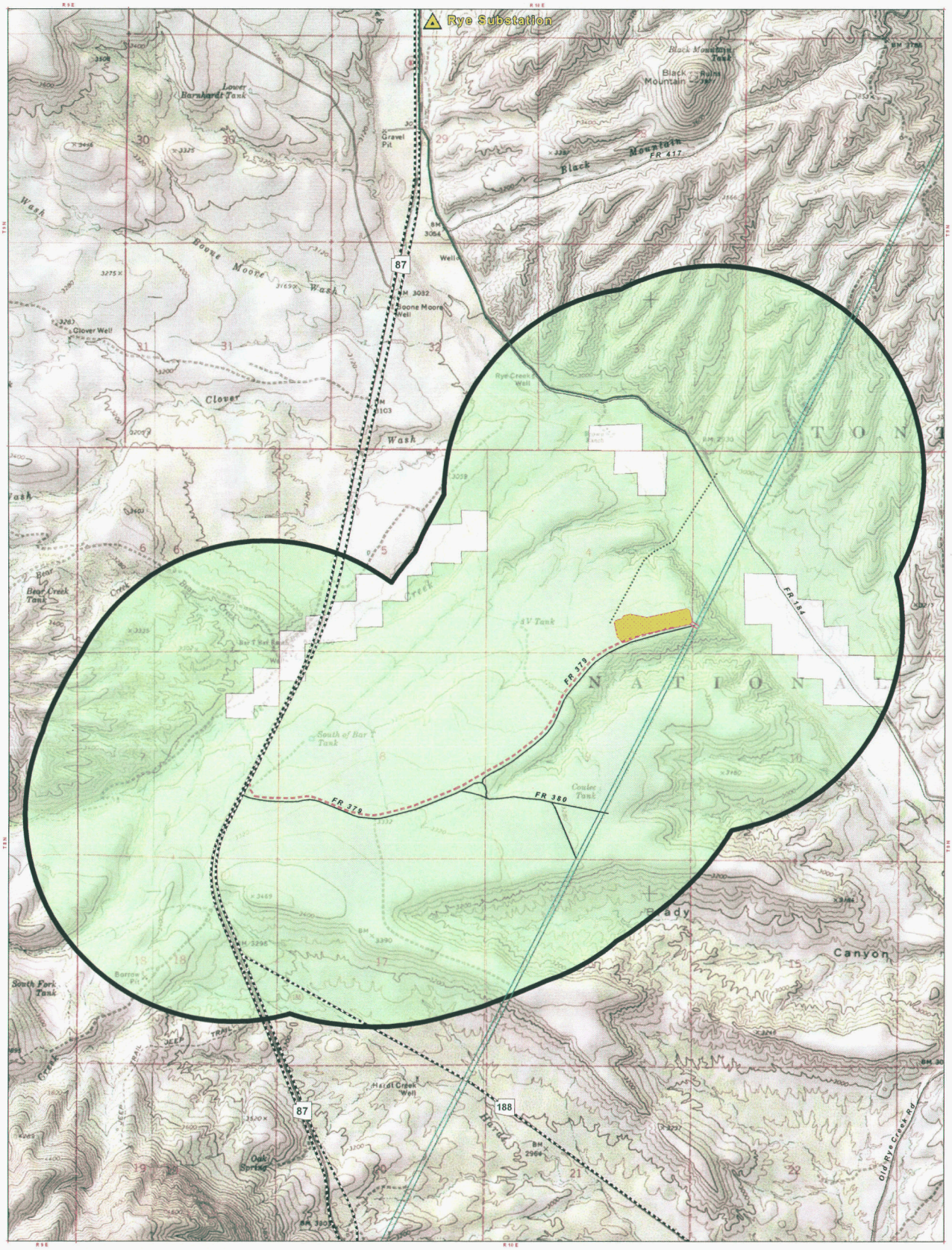
Overview of the Environmental Studies

- NEPA Compliance for USFS
  - Environmental Assessment (EA)

- Summary of findings
  - Minimal environmental impacts
  - Consistent with the Tonto National Forest Plan
  - FONSI received August 2010

aps



LEGEND

Project Features

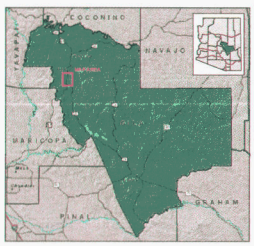
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

0 0.25 0.5 1 Miles

January 2011

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Overview of the Environmental Studies

- NEPA Compliance for USFS
  - Environmental Assessment (EA)
- Summary of findings
  - Minimal environmental impacts
  - Consistent with the Tonto National Forest Plan
  - FONSI received August 2010

aps

DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT
ARIZONA PUBLIC SERVICE MAZATZAL 345/69/21KV SUBSTATION
U.S. D. A. - FOREST SERVICE
TONTO BASIN RANGER DISTRICT, TONTO NATIONAL FOREST
GILA COUNTY, AZ

INTRODUCTION

The Arizona Public Service Company (APS) is the electric power supplier to communities in the Payson, Rye, Roosevelt Lake, and adjacent areas in Gila County, Arizona. APS is proposing to construct a 345/69/21 kilovolt (kV) substation and approximately 1 mile of two parallel double-circuit 69/21kV sub-transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas.

An *Environmental Assessment* (EA) was prepared to evaluate the proposal. Two alternatives were analyzed in detail by an interdisciplinary team: A *No Action* alternative would have the existing facilities continue to serve the Payson, Rye, and Tonto Basin areas at the same level of reliability; and the *Proposed Action* involves the construction of the 345/69/21kV substation and the 69/21kV sub-transmission line for increased reliability of power supplies to those communities. Further description of alternatives can be found in Chapter 2 of the EA. A copy of the final EA is available for public review at http://www.fs.fed.us/r3/tonto/projects/.

DECISION

This *Decision Notice* documents my decision and reasons for this decision. The purpose and need for this project is defined as construction of electrical facilities for increased reliability of electrical power to the communities of northern Gila County. Given the purpose and need, I have reviewed the environment affects of the proposed action and the no action alternative and carefully considered the public comments received on the draft EA. The analysis of the environmental effects, public input and management direction and policy considerations contributed collectively to determining the selected alternative. The information is contained in the Project record.

Based upon my review of the APS Mazatzal 345/69/21kV Substation EA, I have decided to implement Alternative 2, as described in the final EA, with the following changes and mitigation measures:

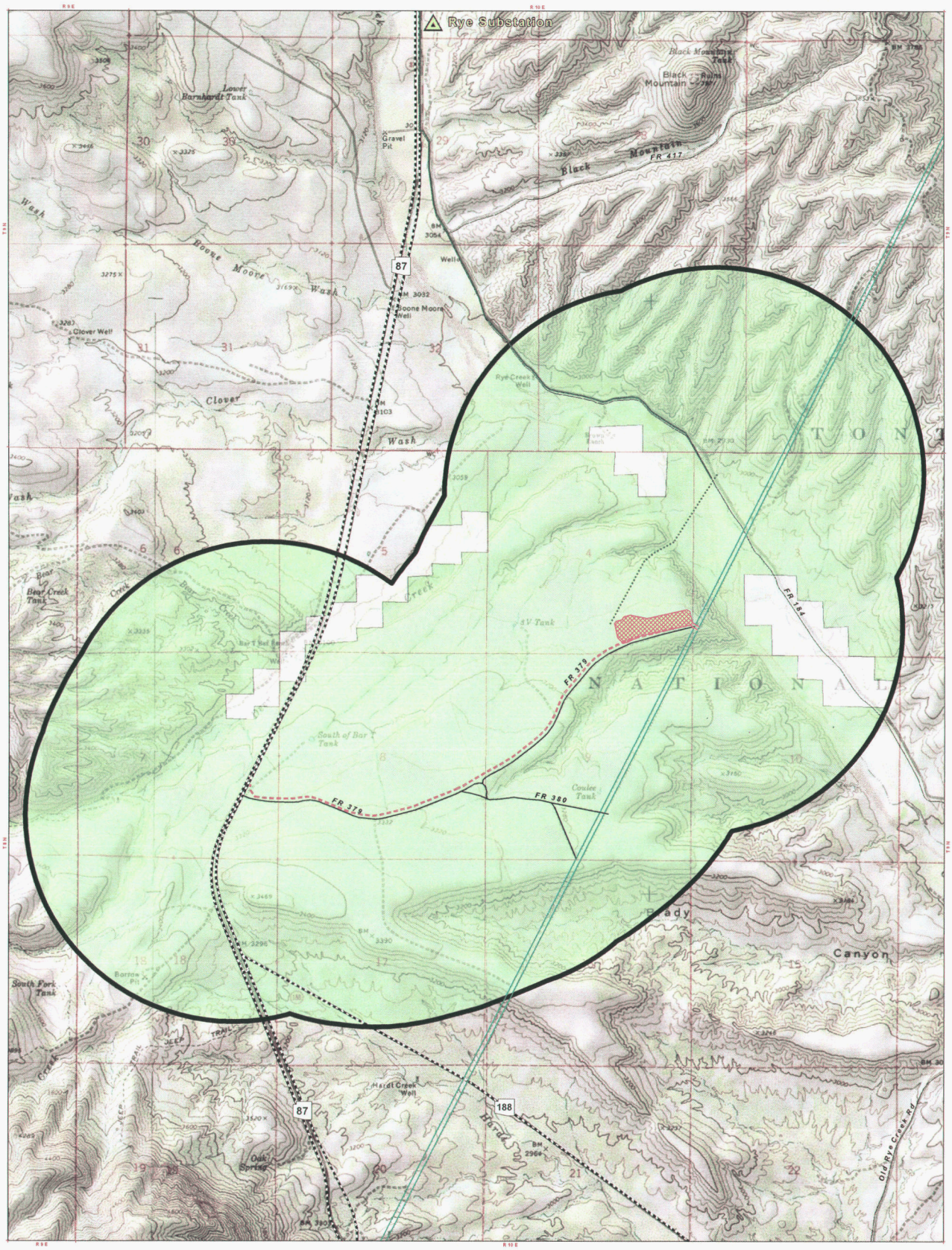
Changes to the Final EA

- References to wild burros in the vicinity of the study area were removed because they are not present in the area.

Overview of the Environmental Studies (cont'd)

- Certificate of Environmental Compatibility Application
  - Land use and Recreation (Exhibits A, B, F, H)
  - Biological Resources (Exhibits B, C, D)
  - Cultural Resources (Exhibits B, E)
  - Visual Resources (Exhibits B, E)

aps



LEGEND

Project Features

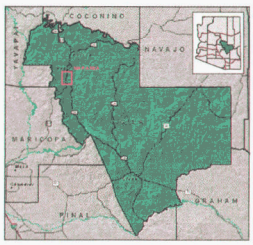
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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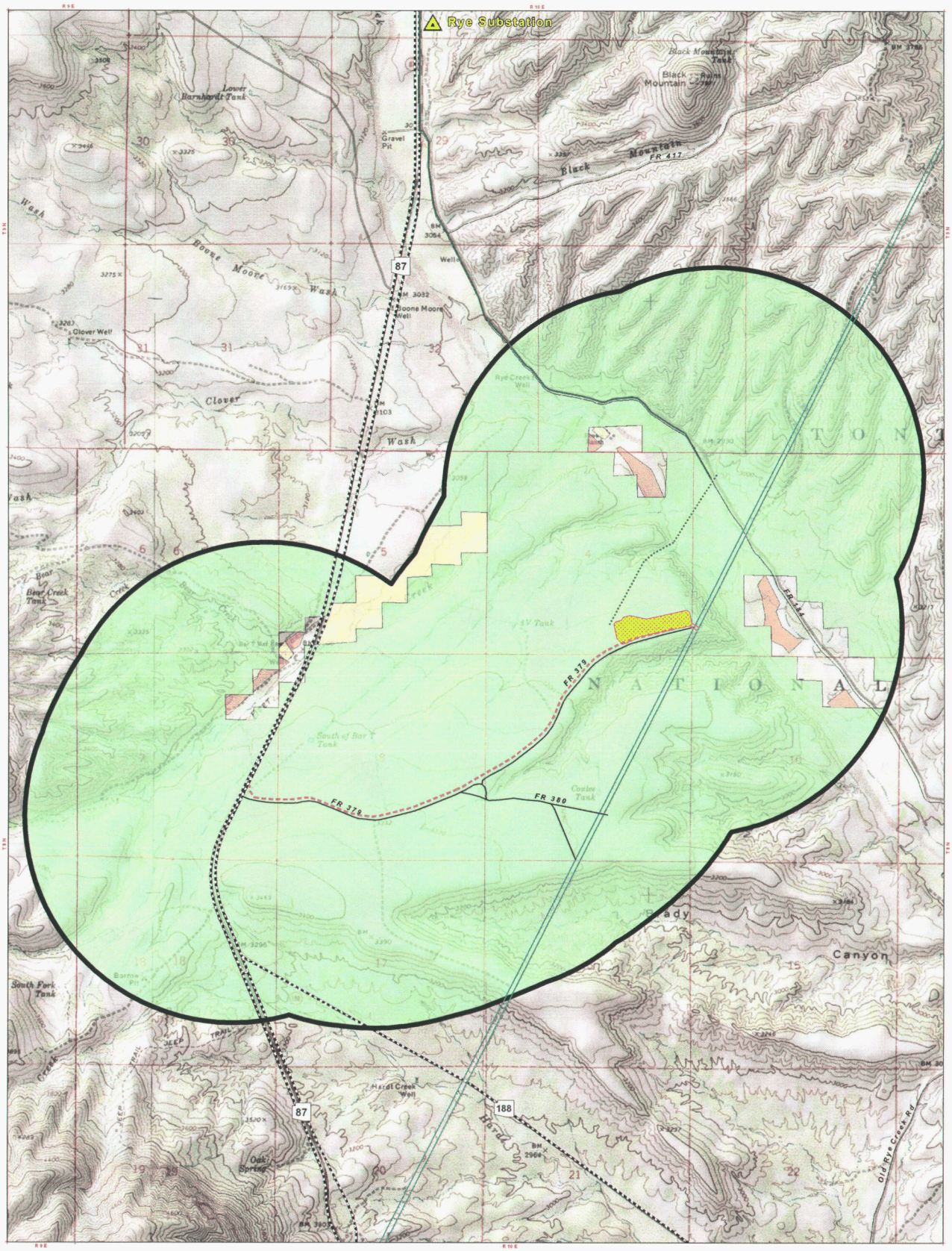
Land Use Summary

- Minimal land use impact
- Located exclusively on USFS land
- Existing access to substation and interconnection site
- Rural residential areas are at least 1 mile away from the Project site
- Other land uses within the study area are associated with dispersed recreation and grazing permitted by the USFS
- Consistent with Tonto National Forest Plan

aps



LEGEND

Project Features

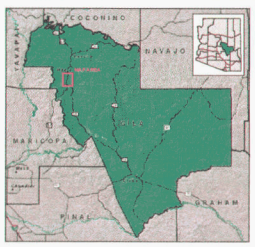
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Existing Land Use

- US Forest Service
- Agriculture
- Residential
- Vacant

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Existing Land Use

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-2

January 2011

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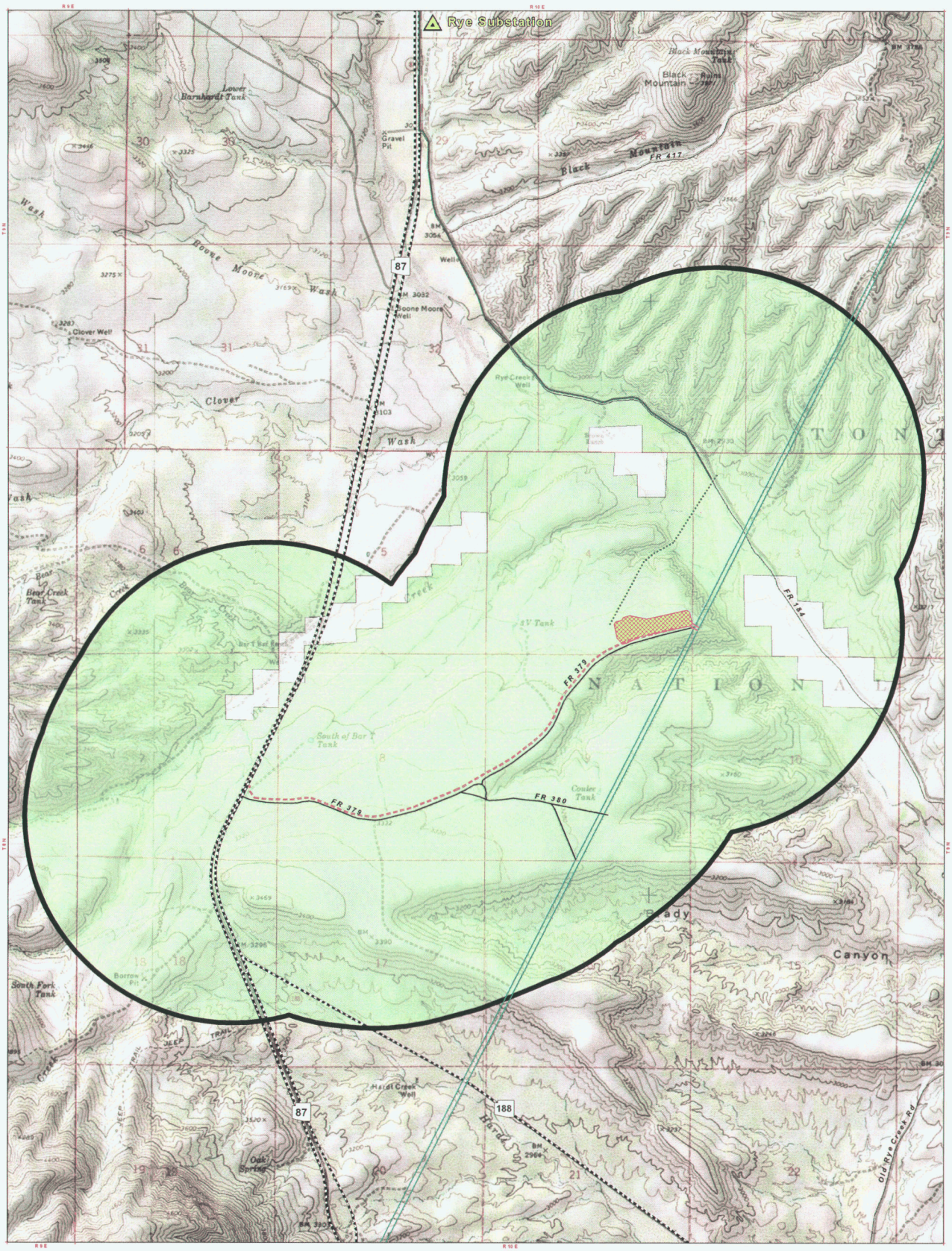
Biological Resources Summary

- Minimal impacts to biological resources
- Conducted field review and contacted USFS, Arizona Game and Fish Department, and the United States Fish and Wildlife Service
- No Special Status or Threatened and Endangered species or associated habitats

aps



LEGEND

Project Features

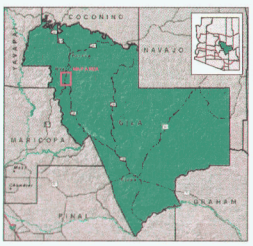
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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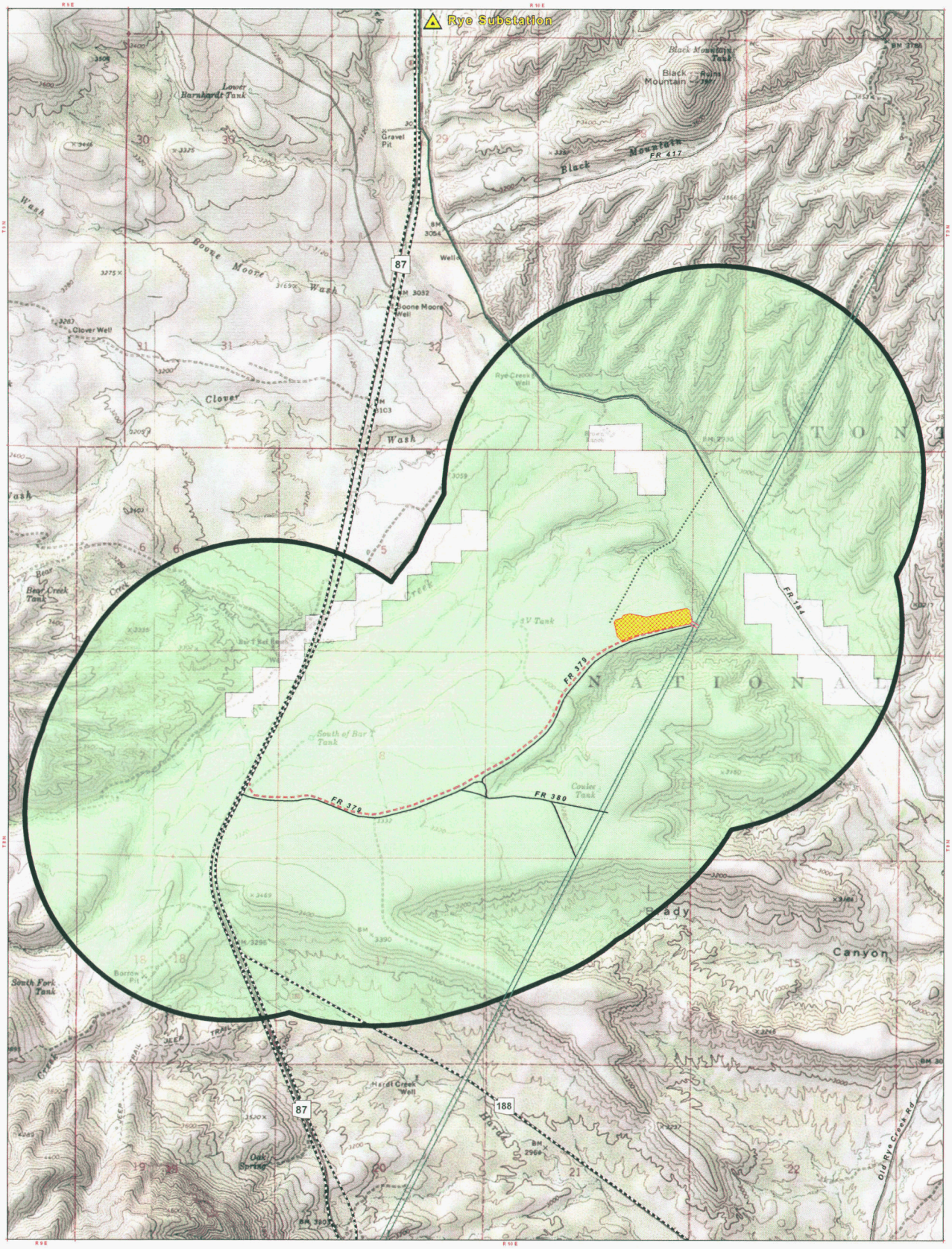
Cultural Resources Summary

- A detailed study identified three archaeological sites located within the project site; each site is eligible for listing on the National Register of Historic Places
- A historic properties treatment plan has been developed and approved by the USFS and SHPO for the three sites
- Data recovery at each site is underway
- Through mitigation, minimal impacts to cultural resources expected

aps



LEGEND

Project Features

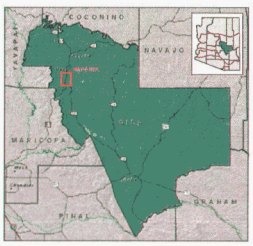
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

0 0.25 0.5 1 Miles

January 2011

APS

epg

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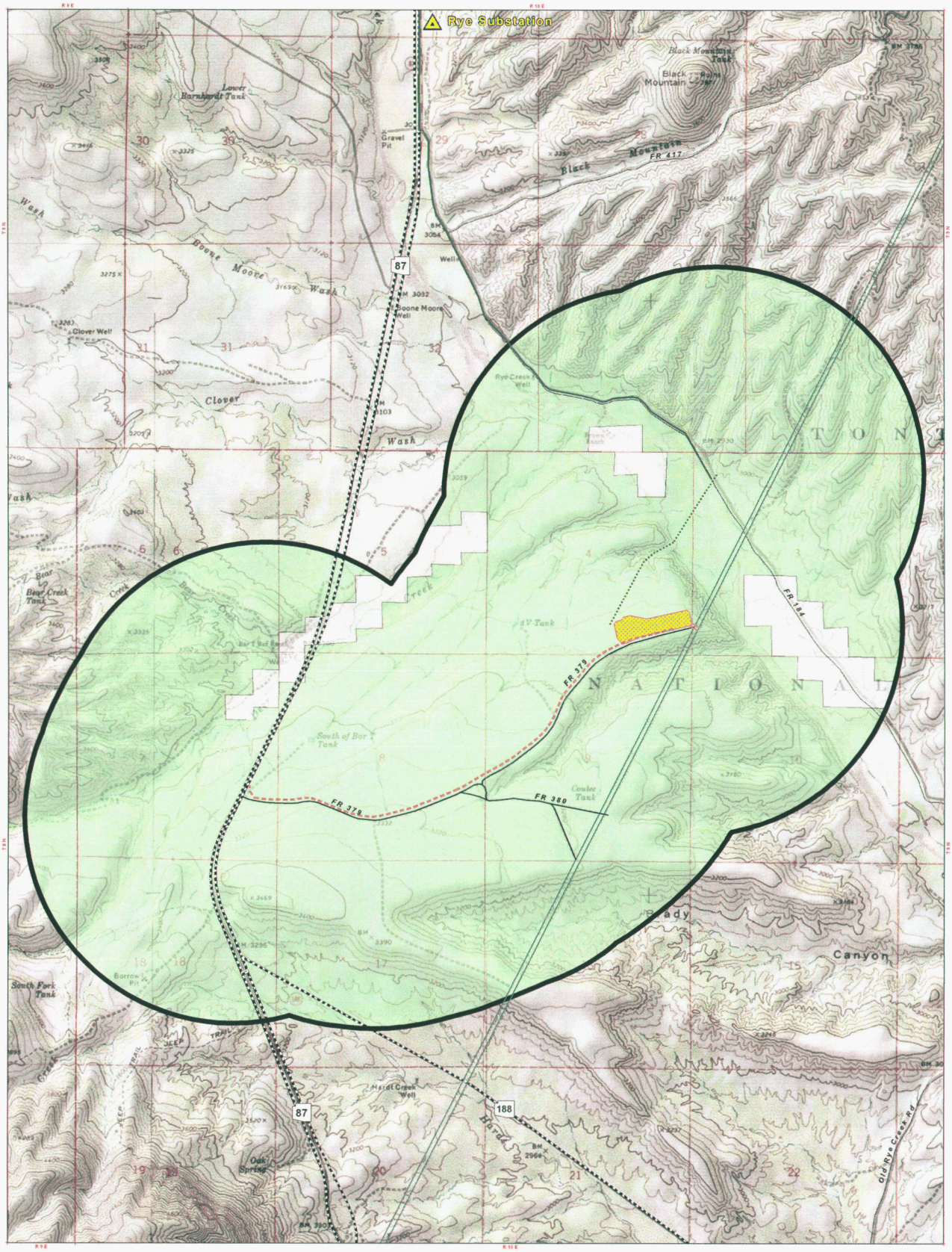
Visual Resources Summary

- Minimal visual impacts anticipated
- USFS Visual Management System used as basis for analysis
- Proposed Project is consistent with USFS Visual Quality Objectives
- USFS mitigation measures, including use of dulled gray structures and landscape restoration, would be incorporated

aps



LEGEND

Project Features

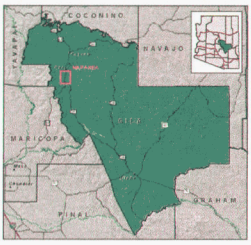
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

APS

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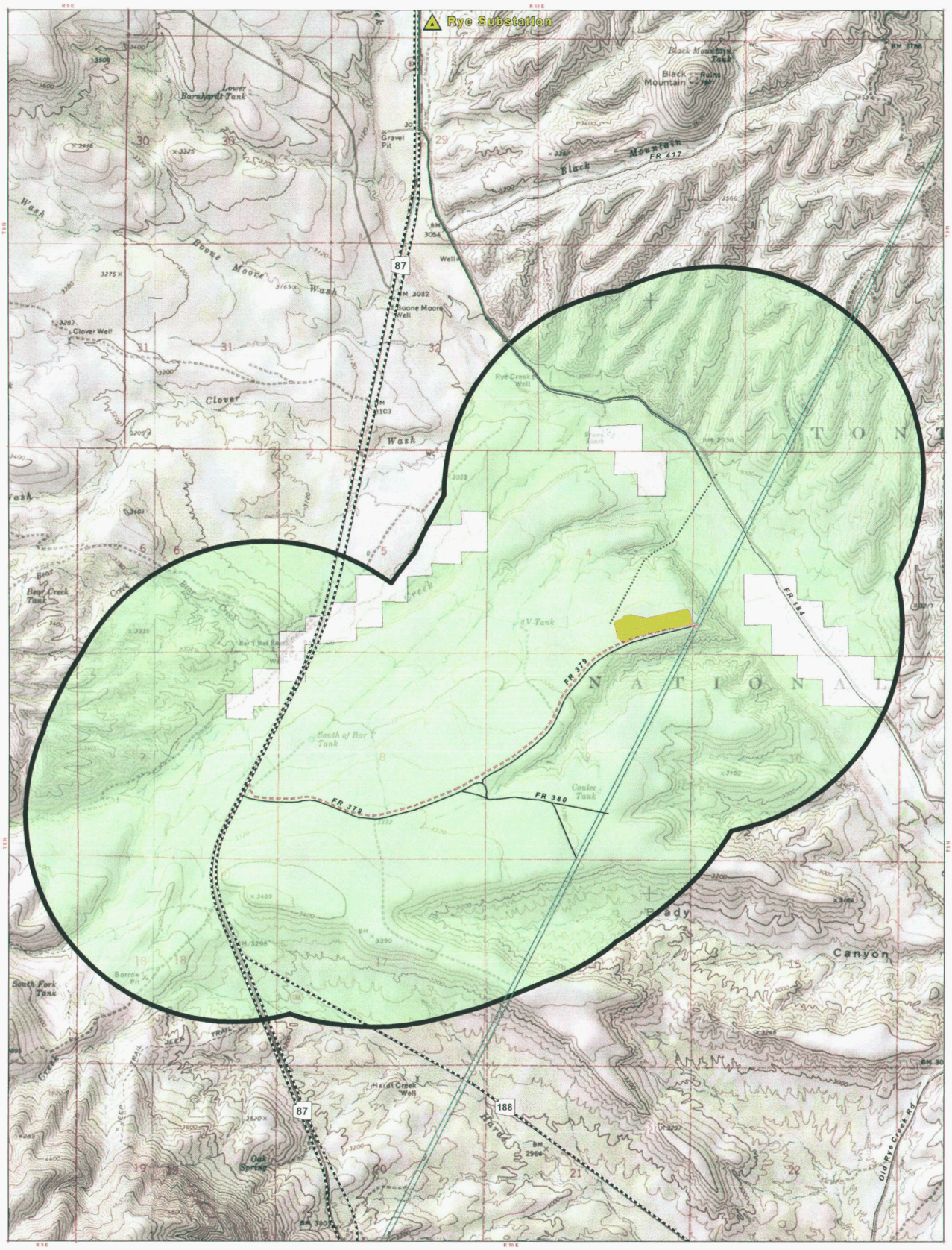
Visual Resources Summary (cont'd)

- Views from residences would generally be screened by topography and vegetation
- Views from SR 87 would be intermittent and backdropped, and seen within the context of the existing 345kV transmission lines
- Visual simulation (Exhibit B, Appendix B)

aps



LEGEND

Project Features

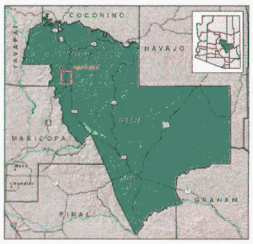
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

APS

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Visual Resources Summary (cont'd)

- Views from residences would generally be screened by topography and vegetation
- Views from SR 87 would be intermittent and backdropped, and seen within the context of the existing 345kV transmission lines
- Visual simulation (Exhibit B, Appendix B)

aps

Existing Condition - Two single-circuit 345kV dull grey steel lattice transmission lines

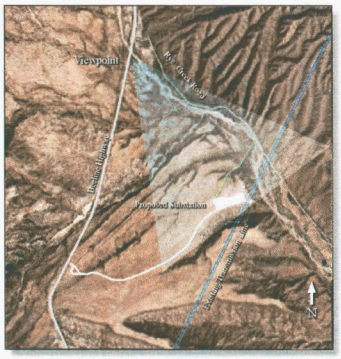
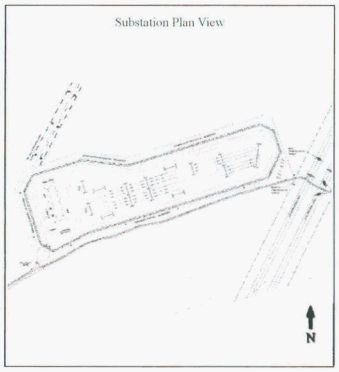


Photo Location: Viewpoint located 1.5 miles south of Rye, Arizona, looking southeast toward the existing 345kV transmission lines.

Photographic Details:
Date: October 28, 2008 / Time: 1:44 pm
Focal Length: 50mm
Atmospheric Conditions: Mostly clear

Simulated Condition - Proposed 345/69/21kV substation and sub-transmission lines (galvanized structures)



APS

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Exhibit

Public Participation

- Two-tiered public process
  - USFS NEPA process
  - CEC process

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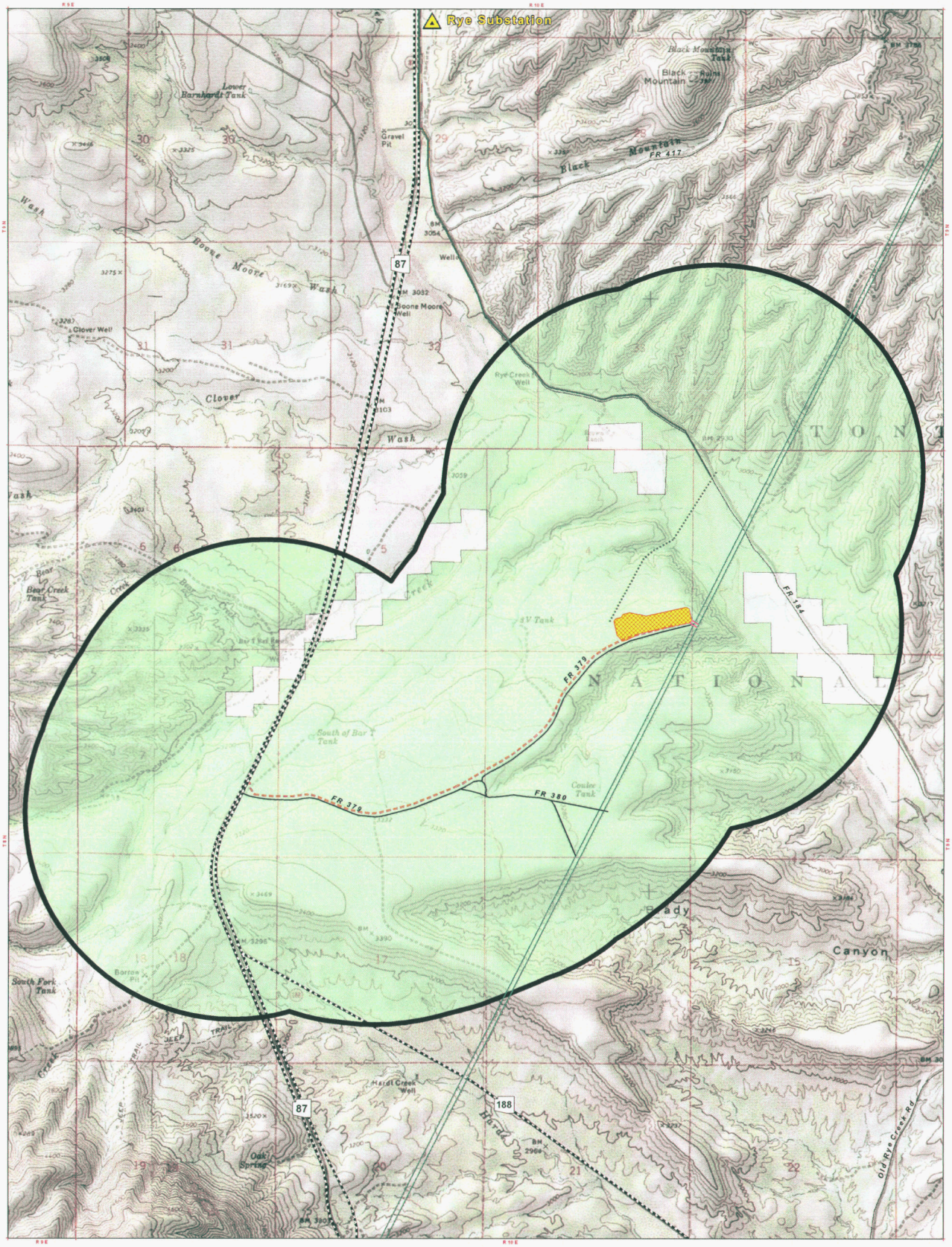


LEGEND

Project Features

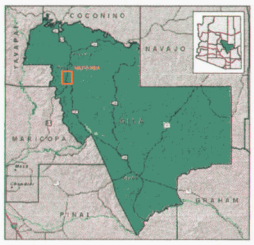
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

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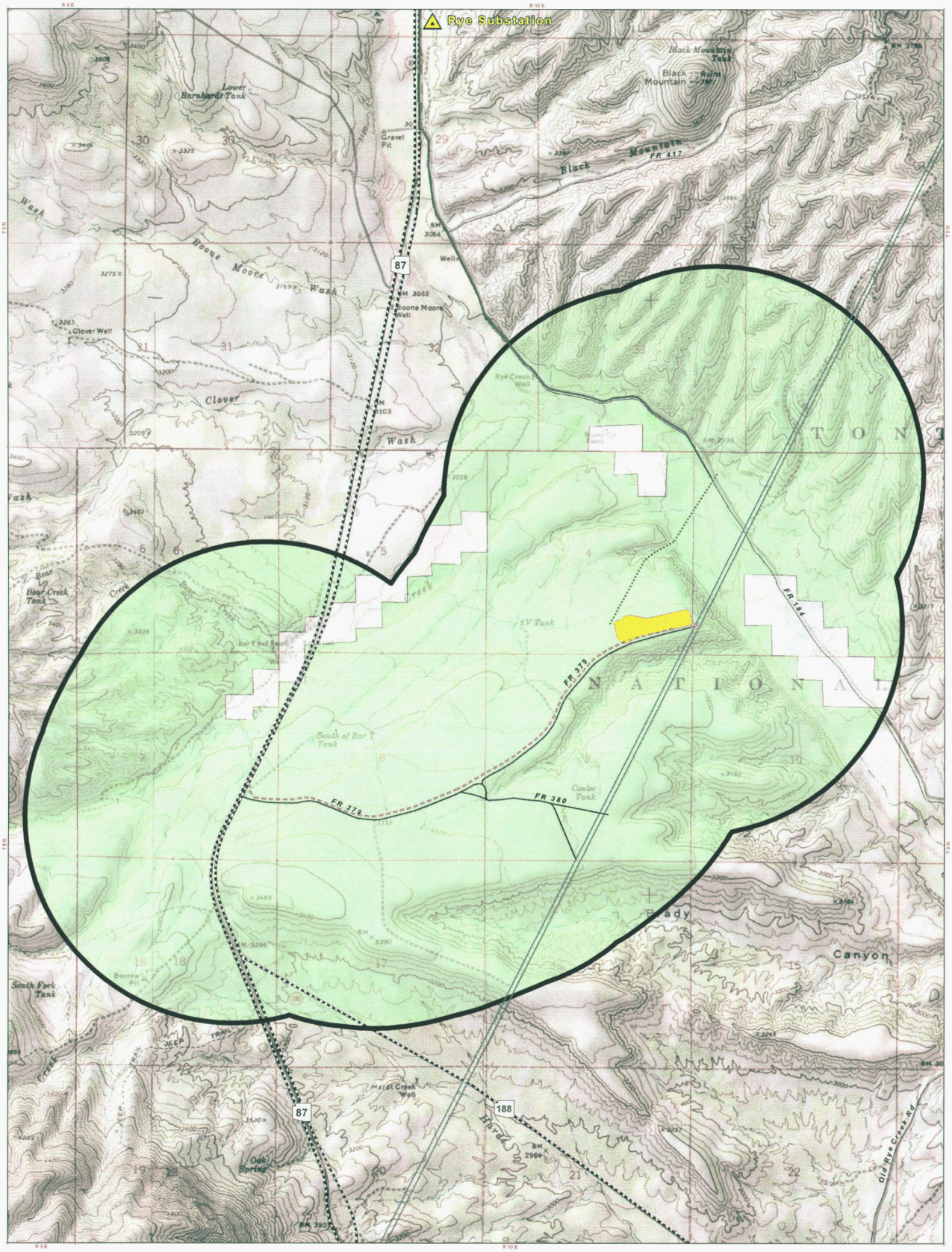

LEGEND

Project Features

- Project Study Area
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- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

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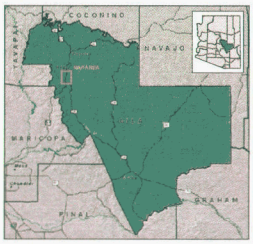

Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

January 2011

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Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

aps

United States Department of Agriculture | Forest Service | Tonto National Forest, Supervisor's Office | 2324 E. McDowell Road
Phoenix, AZ 85006
Phone: (602) 225-5200
Fax: (602) 225-5295

File Code: 1950
Date: February 5, 2008

Dear Interested Party:

Your input is being sought for the proposed **Mazatzal 345/69/21 kilovolt (kV) Substation Project** on the Tonto Basin Ranger District of the Tonto National Forest (TNF). This letter and enclosed map will provide you with information on the Purpose and Need and the Proposed Action for the project.

Purpose and Need for Action

Arizona Public Service Company (APS) is the electric power supplier to the communities in the Payson, Rye, Roosevelt Lake, and adjacent areas. These areas have been experiencing considerable growth for the past several years. Due to the current and projected future growth of these areas, APS's electric infrastructure is nearing its capacity. Currently, the Rye and Payson communities are supplied with electricity from the Tonto Substation, located in Payson, which feeds a temporary substation in Rye. The Tonto Substation is nearing its capacity during peak summer loads and icing conditions during winter. APS has determined that a new 345/69/21kV substation is needed to ensure reliable service to existing customers and to expand the system to serve new development in the region.

Construction of the proposed Mazatzal 345/69/21kV Substation and associated 69kV subtransmission line would ensure reliable electric service to both existing and future area residents and accomplish the following:

- provide a looped transmission system and the ability to restore power in a timely manner in the event of an outage
- provide capacity for projected load growth in the Payson, Rye, and Tonto Basin areas and develop the 69kV system for meeting long-term needs
- improve power quality in the area by providing a stable voltage source

The Purpose and Need for action by the U.S. Forest Service is to identify a suitable corridor and site for the proposed facilities on National Forest System land, in order to facilitate the completion of the proposed project and to meet the management needs and requirements set forth in the TNF Land and Resource Management Plan (Forest Plan). The improvements would occur adjacent to an existing transmission line easement, which is consistent with the Forest Plan.

The project is consistent with the National Energy Policy (NEP). The NEP's purpose is to increase domestic energy supplies, modernize and improve our nation's energy infrastructure, and improve the reliability of the delivery of energy from its sources to points of use. The use and occupancy of federal land, including National Forest System land, is an important element in facilitating the exploration, development, and transmission of affordable and reliable energy to meet these NEP goals.

Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

aps

Exhibit J-2 – Public Notices for Scoping Comment Period

Payson Roundup
February 5, 2008

11336: 2/5/2008
NOTICE OF THE OPPORTUNITY TO COMMENT on the
Mazatzal 345/69/21 kilovolt (kV)
Substation Project
Tonto Basin Ranger District
Tonto National Forest USDA - Forest Service
Gila County, Arizona

The Mazatzal 345/69/21 kV Substation Project Environmental Assessment (EA) will analyze the impacts of constructing, operating, and maintaining a 345/69/21kV substation and approximately 2 miles of double-circuit 69kV sub-transmission line, with a double-circuit 21kV underbuild, under the National Environmental Policy Act. The improvements would occur adjacent to an existing transmission line easement, on National Forest System land.

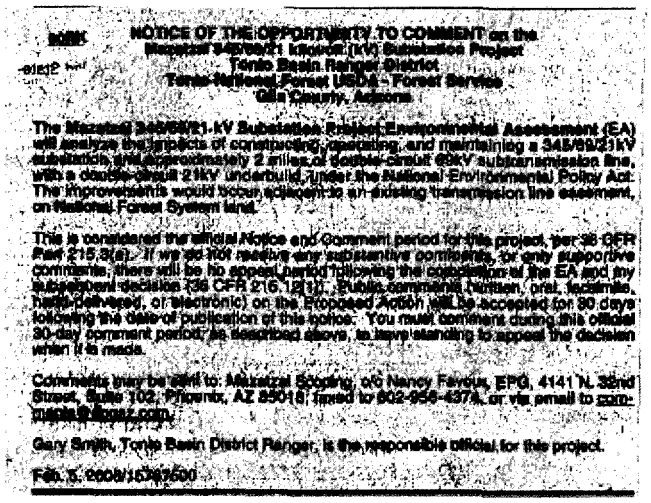
This is considered the official Notice and Comment period for this project, per 36 CFR Part 215.3(a).

If we do not receive any substantive comments, or only supportive comments, there will be no appeal period following the completion of the EA and my subsequent decision (36 CFR 215.12[1]). Public comments (written, oral, facsimile, hand-delivered, or electronic) on the Proposed Action will be accepted for 30 days following the date of publication of this notice. You must comment during this official 30-day comment period, as described above, to have standing to appeal the decision when it is made.

Comments may be sent to: Mazatzal Scoping, c/o Nancy Favour, EPG, 4141 N. 32nd Street, Suite 102, Phoenix, AZ 85018; faxed to 602-956-4374, or via email to comments@epgaz.com.

Gary Smith, Tonto Basin District Ranger, is the responsible official for this project.

The Tribune (East Valley and Scottsdale Editions)
February 5, 2008


NOTICE OF THE OPPORTUNITY TO COMMENT on the
Mazatzal 345/69/21 kilovolt (kV) Substation Project
Tonto Basin Ranger District
Tonto National Forest USDA - Forest Service
Gila County, Arizona

The Mazatzal 345/69/21-kV Substation Project Environmental Assessment (EA) will analyze the impacts of constructing, operating, and maintaining a 345/69/21kV substation and approximately 2 miles of double-circuit 69kV subtransmission line, with a double-circuit 21kV underbuild, under the National Environmental Policy Act. The improvements would occur adjacent to an existing transmission line easement, on National Forest System land.

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Gary Smith, Tonto Basin District Ranger, is the responsible official for this project.

Feb. 5, 2008/1633600

Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

aps

The newspapers of **Arizona** make public notices from their printed pages available electronically in a single database for the benefit of the public. This enhances the legislative intent of public notice - keeping a free and independent public informed about activities of their government and business activities that may affect them. Importantly, Public Notices now are in one place on the web (www.PublicNoticeAds.com), not scattered among thousands of government web pages.

County: Maricopa
Printed In: Arizona Capitol Times (Phoenix)
Printed On: 2010/06/25

PUBLIC NOTICE Legal Notice of Proposed Action Opportunity to Comment Mazatzal Substation Project Environmental Assessment The Tonto Basin Ranger District, Tonto National Forest is preparing an Environmental Assessment for the Mazatzal Substation Project. Arizona Public Service Company is proposing to construct a 345/69/21 kilovolt (kV) substation and approximately 1 mile of two parallel double-circuit 69/21kV sub-transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas. The Project is located on National Forest System land on the east side of State Route 87, north of Arizona 188, in Gila County, Arizona. The proposed action and associated analysis can be obtained from the Tonto Basin Ranger District at 28079 N. AZ Highway 188, Roosevelt, AZ 85545, the Tonto National Forest Supervisor's Office at 2324 E. McDowell, Phoenix, AZ 85051 or online at http://www.fs.fed.us/r3/tonto/projects/. The comment period ends 30 days following the date of publication of this legal notice in the Arizona Capitol Times on June 25, 2010. This publication date is the exclusive means for calculating the time to submit comments on the proposed action. Those wishing to comment on this proposal should not rely upon dates or timeframes provided by any other source. Only those who provide comment or otherwise express interest in the proposed action during the comment period will be eligible as appellants. Interest expressed or comments provided on this project prior to or after the close of this comment period will not constitute standing for appeal purposes. Comments must meet the requirements of 36 CFR 215.6. Comments must be submitted to Mazatzal Draft EA Public Comments, c/o Kevin Duncan, EPG, 4141 N. 32nd Street, Suite 102, Phoenix, AZ 85018 or faxed to 602-956-4374. Comments may also be submitted by email in word (.doc), rich text format (.rtf), text (.txt), portable document format (.pdf), and hypertext markup language (.html) to comments@epgaz.com. Comments may also be hand delivered weekdays 8:00 am - 4:30 pm at the above stated address. To be eligible for appeal, each individual or representative from each organization submitting comments must either sign the comments or verify identity upon request. Names and addresses of commentors will become part of the public record. The U.S. Department of Agriculture is an equal opportunity provider and employer. 6/25, 2010 edition Arizona Capitol Times

Public Notice ID: 13573752

Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

aps

Tommie C. Martin, District I
610 E. Hwy 260, Payson, 85547
(928) 474-2029
tmartin@gilacountyaz.gov

Michael A. Pastor, District II
(928) 402-8753
mpastor@gilacountyaz.gov

Shirley L. Dawson, District III
(928) 402-8511
sdawson@gilacountyaz.gov

GILA COUNTY
BOARD OF SUPERVISORS
1400 E. Ash Street
Globe, Arizona 85501

Don E. McDaniel, Jr.,
County Manager
(928) 402-4257
dmcdaniel@gilacountyaz.gov

John F. Nelson,
Deputy County Manager/
Clerk of the Board of Supervisors
(928) 402-8754
jnelson@gilacountyaz.gov

July 6, 2010

Mazatzal Draft EA Public Comments
c/o Kevin Duncan, EPG
4141 North 32nd Street, Suite 102
Phoenix, AZ 85018

Dear Mr. Duncan,

The undersigned members of the Board of Supervisors of Gila County, Arizona, would like to provide the following comments on the proposed construction of a new substation and one mile of transmission lines to provide reliable power to communities in Gila County by Arizona Public Service Company. The project is located on National Forest System land on the east side of State Route 87, and north of Arizona 188.

We support this proposed new substation and the efforts to provide reliable power to the residents in the Payson, Rye and Tonto Basin areas. Reliable infrastructure is important in the continued growth and success of Gila County. This location is ideal for this project, given the location of the existing power lines that cross forest land that this substation would connect to.

We look forward to the successful completion of this project.

Respectfully submitted,

Michael A. Pastor
Chairman

Shirley L. Dawson
Member

FOR: Tommie C. Martin
Member

Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

aps

Legal Notice of Decision
Arizona Public Service Mazatzal 345/69/21kV Substation

On August 24, 2010, Gene Blankenbaker, Tonto National Forest Supervisor signed a Decision Notice and Finding of No Significant Impact for the Arizona Public Service Mazatzal 345/69/21 kilovolt (kV) Substation. The selected alternative includes the construction of a 345/69/21kV substation and approximately 1 mile of two parallel double-circuit 69/21kV sub-transmission lines to provide reliable power to the communities in the Payson, Rye, and Tonto Basin areas. The Environmental Assessment and Decision Notice/Finding of No Significant Impact are available at http://www.fs.fed.us/r3/tonto/projects/.

This decision is subject to appeal pursuant to regulations at 36 CFR 215. Individuals or organizations who provided comment or otherwise expressed interest in the proposed action during the comment period may appeal. Interest expressed or comments provided on this project prior to or after the close of the comment period do not have standing for appeal purposes. The appeal must be filed (regular mail, fax, email, hand-delivery, express delivery, or messenger service) with the appropriate Appeal Deciding Officer. Submit appeals to: Corbin Newman, Appeal Reviewing Officer, 333 Broadway SE, Albuquerque, NM 87102. If hand delivered, the appeal must be received at the above address during business hours (Monday - Friday 8:00 am to 4:30 pm), excluding holidays. Electronic appeals may be submitted to appeals-southwestern-regional-office@fs.fed.us (.doc, .rtf, or .txt formats only). The appeal must have an identifiable name attached or verification of identity will be required. Names and addresses of appellants will become part of the public record. A scanned signature may serve as verification on electronic appeals.

Appeals, including attachments, must be in writing, fully consistent with 36 CFR 215.14, and filed (postmarked) within 45 days following the date this notice is published in the Arizona Capital Times. This publication date is the exclusive means for calculating the time to file an appeal. Those wishing to appeal this decision should not rely upon dates or timeframes provided by any other source.

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

The U.S. Department of Agriculture is an equal opportunity provider and employer.

Published in Arizona Capital Times on 8/27/2010

Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

aps

4141 NORTH 32ND STREET
SUITE 102
PHOENIX, ARIZONA 85018
602 956-4370
602 956-4374
www.epgaz.com

October 5, 2010

Troy Waskey, Recreation, Lands, and Minerals Staff
Tonto Basin Ranger District
Tonto National Forest
28079 N. AZ Hwy 188
Roosevelt, AZ 85545

Dear Mr. Waskey,

Arizona Public Service Company (APS) plans to file an Application for a Certificate of Environmental Compatibility (CEC) for the Mazatzal Substation and 345kV Interconnection Project with the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) in October 2010. The proposed project involves building a new 345/69/21kV substation, a short in and out connection off of the existing 345kV transmission lines and two new 69/21kV sub-transmission lines. The proposed project would provide reliable power and infrastructure to the communities in the Payson, Rye, and Tonto Basin areas of Gila County, Arizona. APS has been working with the Tonto National Forest on an Environmental Assessment for the project due to the project being entirely within the Forest, and a decision and Finding of No Significant Impact (FONSI) was issued on August 24, 2010. APS will request Siting Committee approval for a CEC for the loop in of the 345kV transmission lines and 345/69/21kV substation as the project has been determined as being environmentally compatible and would help to adequately address the project need.

Arizona Administrative Code Rule R14-2-219 directs an applicant to include in its Application an Exhibit H addressing the following:

"To the extent the applicant is able to determine, state the existing plans of the State, local government and private entities for other developments at or in the vicinity of the proposed site or routes."

This letter is a request for any information or comments that your organization wishes to provide regarding development plans for inclusion in the Application. Specifically, please advise me of any existing or future plans that may have changed since the completion of our data collection efforts in July 2010.

To allow your information to be included in the Application, please forward it to me no later than October 15, 2010, at the address above.

Thank you for your cooperation.

Sincerely,

Kevin C. Duncan, Project Manager
Environmental Planning Group

cc: Brad Larsen, APS Project Manager

Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

aps

Daily News-Sun
10102 Santa Fe Drive
Sun City, Arizona 85351
623.977.8351
Fax 623.876.2589

East Valley Tribune
120 West First Avenue
Mesa, AZ 85210
480.898.6371
Fax 480.898.6463

Affidavit of Publication

Ad: (for 2/9/2011 PUBLIC NOTICE), Issues 1

RECEIVED
FEB 14 2011

I, Theresa DiBona, Legal Representative, acknowledge that the attached ad was published in a newspaper of general circulation. The dates of the publication and description are stated above.

Daily News-Sun and
The East Valley Tribune

Theresa DiBona

Theresa DiBona, Legal Representative

Account: 5109099

Ad Number: 16615678

Price: $2475.00

STATE OF ARIZONA,
COUNTY OF MARICOPA

On 2/10/2011 Theresa DiBona appeared before me, whom I know personally to be the person who signed the above document and proved she signed it.

Sandra Lee Gibos Notary Public

897 APS

East Valley Tribune.com — Wednesday, February 9, 2011 • 7

Notice of Hearing

Before the Arizona Power Plant and Transmission Line Siting Committee

Docket No. L-00000D-11-0068-00160
Case No. 160

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE HAZATZAL SUBSTATION AND 345KV INTERCONNECTION PROJECT, WHICH INCLUDES THE CONSTRUCTION OF TWO 345KV TRANSMISSION LINES AND A NEW 345/69/12KV SUBSTATION, SECTION 4, TOWNSHIP 8 NORTH, RANGE 10 EAST, GSB&BM, ADJACENT TO THE INTERSECTION OF THE EXISTING FOUR CORNERS-CHOLLA-PINNACLE PEAK 345KV TRANSMISSION LINES AND FOREST ROAD 378, WITHIN THE TONTO NATIONAL FOREST IN GILA COUNTY, ARIZONA

NOTICE OF HEARING

A PUBLIC HEARING WILL BE HELD before the Arizona Power Plant and Transmission Line Siting Committee ("Committee") regarding the Application of Arizona Public Service Company ("APS") for a Certificate of Environmental Compatibility authorizing the Hazatzal Substation and 345kV Interconnection Project ("Project") in Gila County, Arizona.

The hearing will be held at the Chaparral Suites Scottsdale, 5001N. Scottsdale Rd Scottsdale, Arizona 85250, telephone: 480-949-1414. The hearing shall begin on Tuesday, March 22, 2011, and if necessary, continue on Wednesday, March 23, 2011. The hearing will begin at 9:30 a.m. each day and will adjourn at approximately 5:00 p.m. Public comment may be heard during the time set for the hearing. Additional hearings, if necessary, will be noticed on the Arizona Corporation Commission ("ACC") website.

The page of the ACC website at which notice will be given is the Committee's Hearing Calendar page, available at: www.azcc.gov/AZ-Power_Plant/LineSiting/Calendar.asp.

PUBLIC COMMENT MAY BE TAKEN AT THE BEGINNING OF EACH HEARING DAY OR AT OTHER TIMES DURING THE HEARING AT THE DISCRETION OF THE CHAIRMAN OF THE COMMITTEE.

The Committee, at its discretion, may recess the hearing to a time and place to be announced during the hearing, or to be determined after the recess. The date, time, and place at which the hearing will resume will be posted on the Committee's Hearing Calendar page of the ACC website. *NOTE: NOTICE OF SUCH RESUMED HEARING WILL BE GIVEN; HOWEVER, PUBLISHED NOTICE OF SUCH RESUMED HEARING IS NOT REQUIRED.*

The Project involves the construction of a new 345/69/12kV substation and an interconnection with the existing existing Cholla to Pinnacle Peak 345kV line that consists of two new 345kV transmission lines. The two 345kV transmission lines would interconnect in and out of the new substation, each approximately 600 feet in length. The Project is completely located on United States Forest Service (USFS) land, and an Environmental Assessment was prepared to fulfill requirements of the National Environmental Policy Act. The USFS issued a Finding of No Significant Impact for the Project in August 2010. The Applicant is requesting a 400 foot corridor for the interconnection.

Maps of the Project site and detailed information about the Project facilities are contained in the Application, which are available for inspection at the following locations:

- Docket Control Center of the ACC's Phoenix Office at 1200 West Washington Street, Suite 108, Phoenix, Arizona 85007;
- Payson Public Library, 328 N. McLane Road, Payson, Arizona 85541; and
- On the Internet using the ACC's e-Docket function, available at: edocket.azcc.gov/

Each county and municipal government and state agency interested in the proposed Project and desiring to become a party to the proceeding, not less than ten (10) days before the date set for hearing, shall file with the Director of Utilities, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, a notice of its intent to be a party.

Any domestic, non-profit corporation or association, formed in whole or in part to promote conservation of natural beauty, to protect the environment, personal health, or other biological values, to preserve historical sites, to promote consumer interests, to represent commercial and industrial groups, or to promote the orderly development of the area in which the Project is to be located and desiring to become a party to the proceedings, not less than ten (10) days before the date set for hearing, shall file with the Director of Utilities, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, a notice of its intent to be a party.

The Committee, at its Chairman, at any time deemed appropriate, may make other persons parties to the proceedings.

Any person may make a limited appearance at the hearing by filing a written statement with Docket Control of the Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, not less than five (5) days before the date set for hearing. A person making a limited appearance shall not be a party and shall not have the right to present testimony or cross-examine witnesses.

This proceeding is governed by Arizona Revised Statutes Sections 40-360 and 40-360.13 and Arizona Administrative Code R14-3-201 to R14-3-220. No substantive communication that is not in the public record may be made to any member of the Committee. The written decision of the Committee will be submitted to the Arizona Corporation Commission pursuant to Arizona Revised Statutes Section 40-360.07. Any person intending to be a party to the proceedings on these matters before the Arizona Corporation Commission must be a party to the proceedings before the Committee.

DATED this 4th day of February, 2011.

/s/ John Foreman, Esq.
Assistant Attorney General
Chairman, Arizona Power Plant and Transmission Line Siting Committee

---

Affidavit of Publication

Payson Roundup

10050406

STATE OF ARIZONA

02/28/2011

I, Paula VanBunkirk, do solemnly swear that I am Assistant Bookkeeper of the Payson Roundup, that the same is a newspaper printed, in whole or in part, And published in the COUNTY OF GILA, State of Arizona, and has a general Circulation therein; that said newspaper has been published continuously and uninterruptedly in said COUNTY OF GILA for a period of more than fifty-two weeks prior to the first publication of the annexed legal notice of advertisement; that said newspaper has been admitted to the United states mails as second-class matter under the provisions of the Act of March 3, 1879, or any amendments thereof, and that said newspaper is a newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Arizona. That the annexed legal notice or advertisement was published in the regular and entire issue of every number of said daily newspaper for the period of (1) insertion; and was in the issue of said newspaper dated February 11 A.D., 2011. In witness whereof I have hereunto set my hand this February 28 A.D., 2011.

Paula VanBunkirk

Subscribed and sworn to before me, a Notary Public in and for the COUNTY OF GILA, State of Arizona December 23 A.D., 2008.

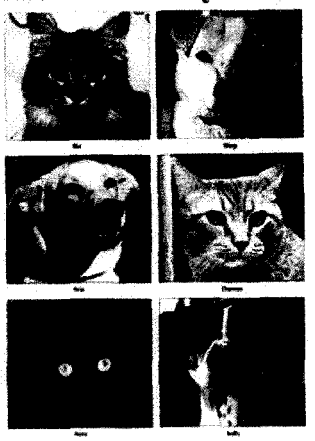
Julie Wantland, Notary Public

My commission expires March 29, 2011.

JULIE WANTLAND
NOTARY PUBLIC - ARIZONA
GILA COUNTY
My Comm. Exp. March 29, 2011

Payson Roundup LOCAL February 11, 2011 19

Shelter has many sweethearts to share your life



Notice of Hearing

Before the Arizona Power Plant and Transmission Line Siting Committee

Public Participation (cont'd)

- USFS NEPA process
  - USFS scoping letter
  - Scoping notices
  - Draft Environmental Assessment (EA) commenting period (complete)
  - FONSI issued

- CEC process
  - Exhibit H letters
  - Hearing notices
  - Signs at the vicinity of the Project

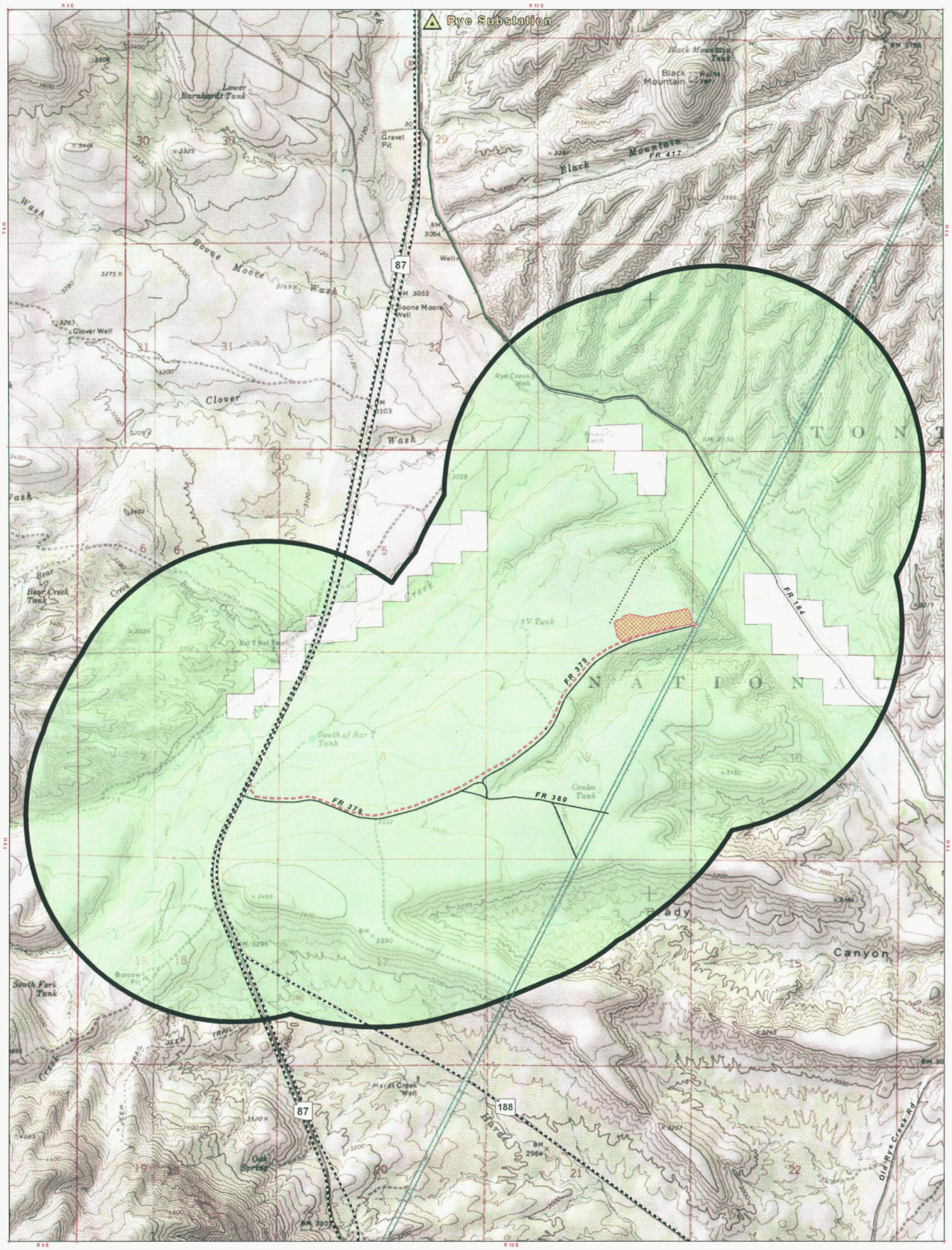
aps

PUBLIC HEARING

Project is Environmentally Compatible

- Substation location is adjacent to existing 345kV transmission lines and minimizes the distance required for interconnection
- Uses existing access for substation and interconnection
- Minimal effects to existing and planned land use, visual, cultural, and biological resources
- Project consistent with applicable management plans, including Tonto NF Plan; FONSI issued August 2010

aps



LEGEND

Project Features

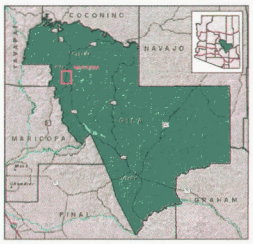
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

0 0.25 0.5 1 Miles

January 2011

APS

epg

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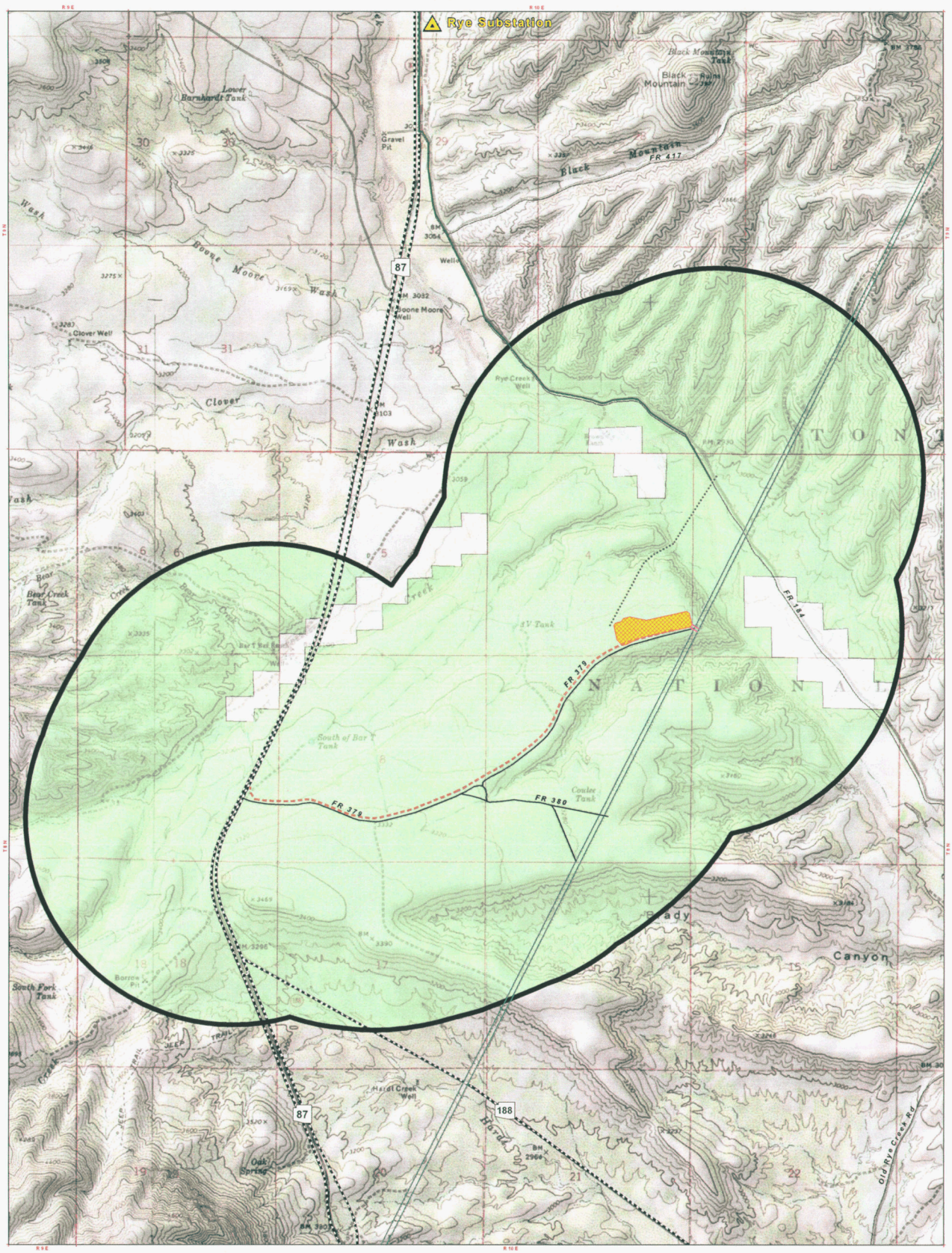
Kevin Duncan, AICP

Environmental Planning Group (EPG)
Project Manager

aps



LEGEND

Project Features

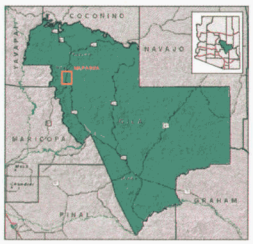
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Land Ownership

Mazatzal Substation and 345kV Interconnection Project

Exhibit A-1

0 0.25 0.5 1 Miles

January 2011

APS

epg

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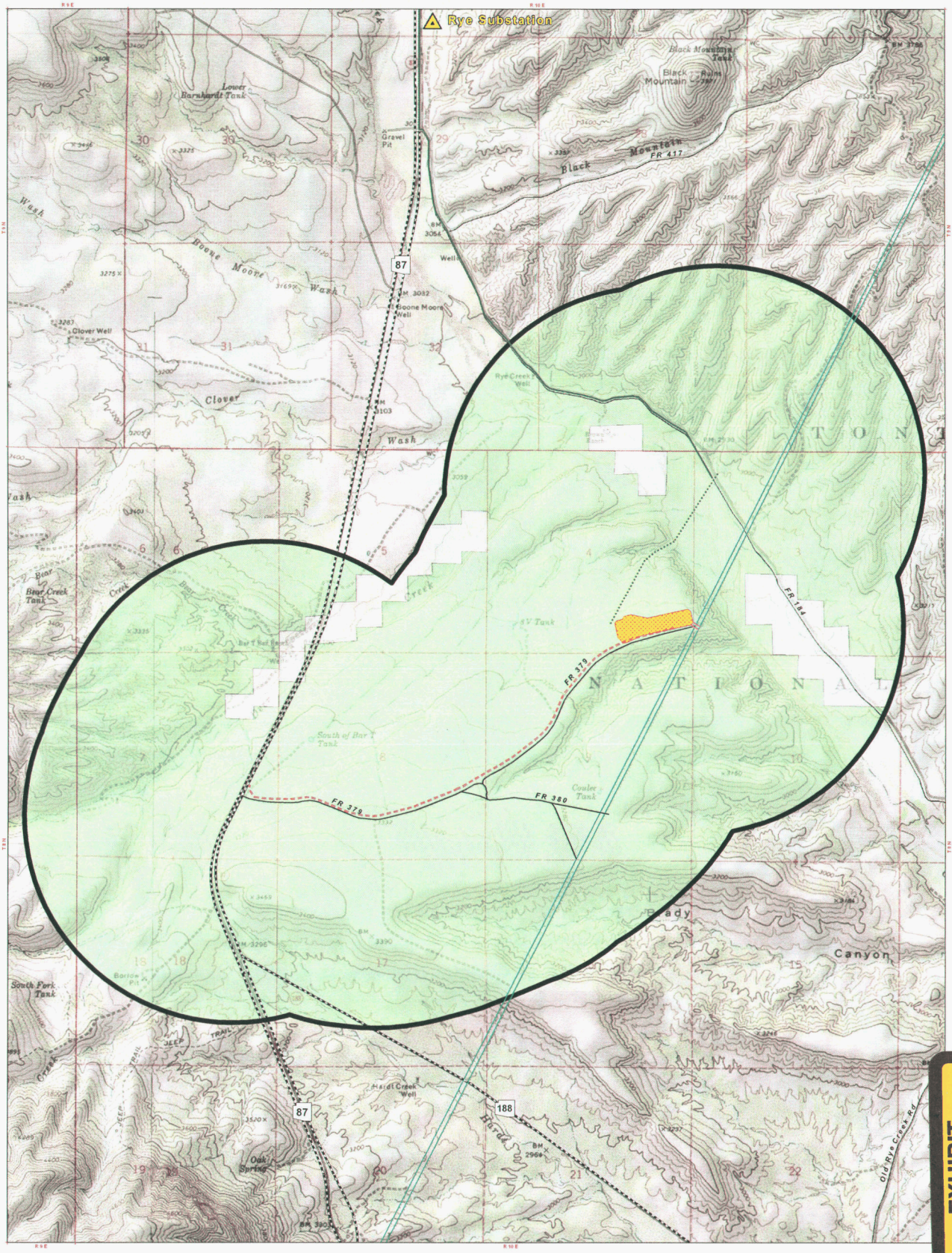


LEGEND

Project Features

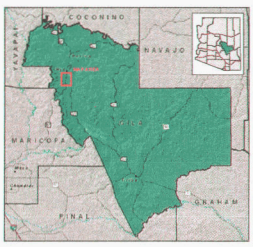
- Project Study Area
- Proposed Substation
- 345kV Interconnection
- Proposed 69kV Transmission Line
- Proposed Access Road

Land Ownership

- US Forest Service
- Private

Reference Features

- Existing Substation
- 69kV Transmission Line
- 345kV Transmission Line
- Highway
- Road
- Township and Range
- Section



Study Area Map

Mazatzal Substation and 345kV Interconnection Project

Figure 2

0 0.25 0.5 1 Miles

November 2010

DRAFT

APS

epg

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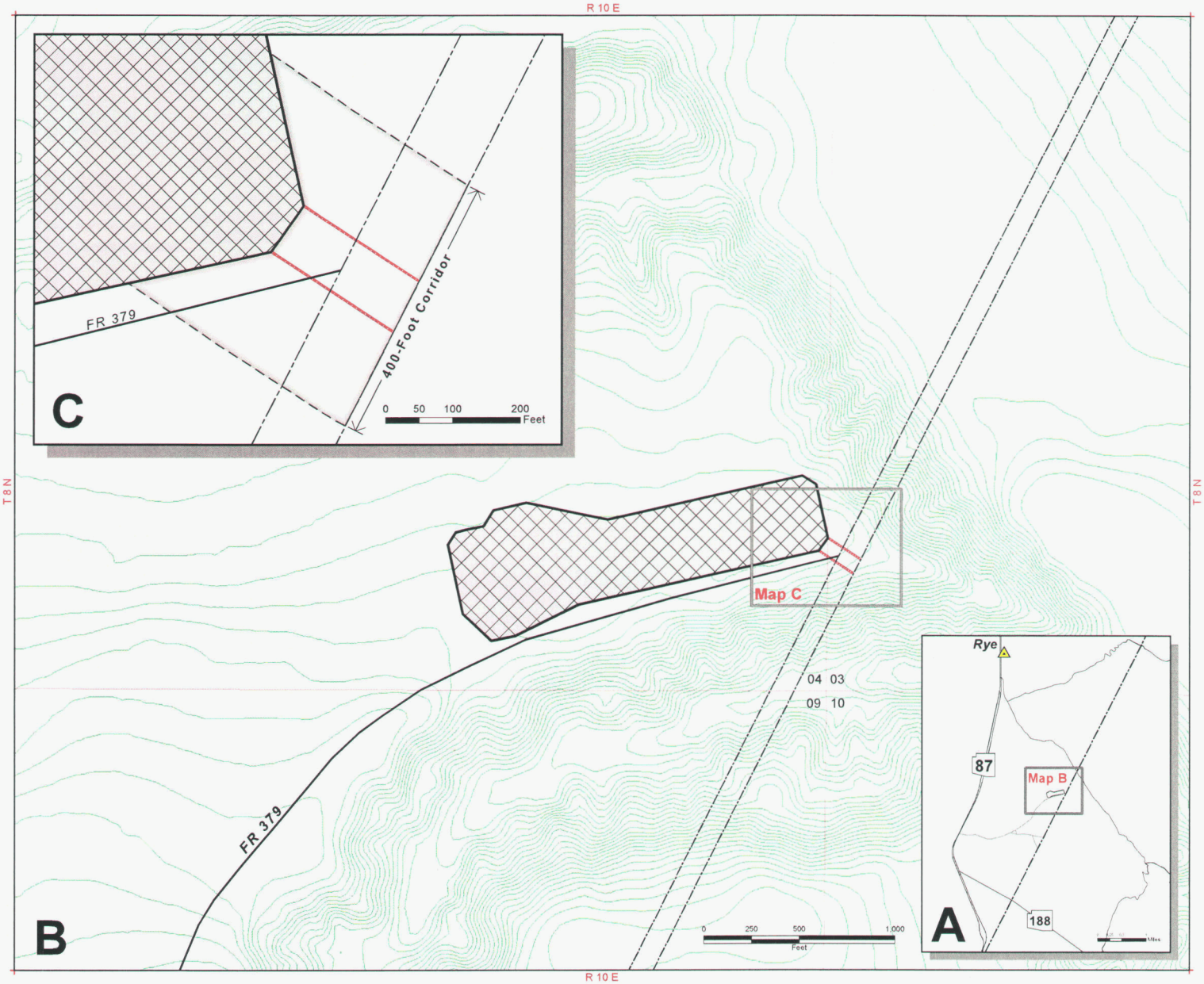
EXHIBIT A-4 ADMITTED

labbies

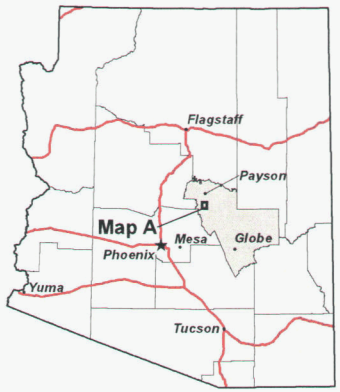
Mazatzal Substation and 345kV Interconnection Project

Proposed Interconnection



LEGEND

- Proposed Substation
- 345kV Interconnection
- 345kV Right-of-Way (400 feet)
- Existing Substation
- Existing 345kV Transmission Line
- Road
- 10 Section Line



January 2011

Sources: StreetMap USA, ESRI 2007; EPG 2008.

APS

epg

S:\EPG\GIS\Projects\aps\mazatzal\mxds\maz_newsletter.mxd

Daily News-Sun
10102 Santa Fe Drive
Sun City, Arizona 85351
623.977.8351
Fax 623.876.2589

East Valley Tribune
120 West First Avenue
Mesa, AZ 85210
480.898.6371
Fax 480.898.6463

Affidavit of Publication

Ad: (for 2/9/2011 PUBLIC NOTICE), Issues 1

RECEIVED
FEB 14 2011

I, Theresa DiBona, Legal Representative, acknowledge that the attached ad was published in a newspaper of general circulation. The dates of the publication and description are stated above.

Daily News-Sun and
The East Valley Tribune

Theresa DiBona

Theresa DiBona, Legal Representative

Account : **5109099**

Ad Number: **16615678**

Price: **$2475.00**

STATE OF ARIZONA,
COUNTY OF MARICOPA

On 2/10/2011 Theresa DiBona appeared before me, whom I know personally to be the person who signed the above document and proved she signed it.

Sandra Lee Gibbs Notary Public

SANDRA LEE GIBBS
Notary Public - Arizona
Maricopa County
My Comm. Expires Mar 15, 2014

EXHIBIT
A-5
ADMITTED

897 APS

Notice of Hearing

Before the Arizona Power Plant and Transmission Line Siting Committee

Docket No. L-00000D-11-0068-00160,
Case No. 160

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE MAZATZAL SUBSTATION AND 345KV INTERCONNECTION PROJECT, WHICH INCLUDES THE CONSTRUCTION OF TWO 345KV TRANSMISSION LINES AND A NEW 345/69/21KV SUBSTATION, SECTION 4, TOWNSHIP 8 NORTH, RANGE 10 EAST, GASRB&M, ADJACENT TO THE INTERSECTION OF THE EXISTING FOUR CORNERS-CHOLLA-PINNACLE PEAK 345KV TRANSMISSION LINES AND FOREST ROAD 379, WITHIN THE TONTO NATIONAL FOREST IN GILA COUNTY, ARIZONA

NOTICE OF HEARING

A PUBLIC HEARING WILL BE HELD before the Arizona Power Plant and Transmission Line Siting Committee ("Committee") regarding the Application of Arizona Public Service Company ("APS") for a Certificate of Environmental Compatibility authorizing the Mazatzal Substation and 345kV Interconnection Project ("Project")
in Gila County, Arizona.

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The Committee, at its discretion, may recess the hearing to a time and place to be announced during the hearing, or to be determined after the recess. The date, time, and place at which the hearing will resume will be posted on the Committee's Hearing Calendar page of the ACC website. **NOTE: NOTICE OF SUCH RESUMED HEARING WILL BE GIVEN; HOWEVER, PUBLISHED NOTICE OF SUCH RESUMED HEARING IS NOT REQUIRED.**

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Maps of the Project site and detailed information about the Project facilities are contained in the Application, which are available for inspection at the following locations:

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This proceeding is governed by Arizona Revised Statutes Sections 40-360 and 40-360.13 and Arizona Administrative Code R14-3-201 to R14-3-220. No substantive communication that is not in the public record may be made to any member of the Committee. The written decision of the Committee will be submitted to the Arizona Corporation Commission pursuant to Arizona Revised Statutes Section 40-360.07. Any person intending to be a party to the proceedings on these matters before the Arizona Corporation Commission must be a party to the proceedings before the Committee.

DATED this 4th day of February, 2011.

/s/ John Foreman, Esq.
Assistant Attorney General
Chairman, Arizona Power Plant and
Transmission Line Siting Committee

Affidavit of Publication

Payson Roundup

10050406

STATE OF ARIZONA

02/28/2011

I, Paula VanBuskirk, do solemnly swear that I am Assistant Bookkeeper of the **Payson Roundup**, that the same is a newspaper printed, in whole or in part, And published in the COUNTY OF GILA, State of Arizona, and has a general Circulation therein; that said newspaper has been published continuously and uninterruptedly in said COUNTY OF GILA for a period of more than fifty-two weeks prior to the first publication of the annexed legal notice of advertisement; that said newspaper has been admitted to the United states mails as second-class matter under the provisions of the Act of March 3, 1879, or any amendments thereof, and that said newspaper is a newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Arizona. That the annexed legal notice or advertisement was published in the regular and entire issue of every number of said daily newspaper for the period of (1) insertion; and was in the issue of said newspaper dated **February 11 A.D., 2011.** In witness whereof I have hereunto set my hand this **February 28 A.D., 2011.**

Paula VanBuskirk

Subscribed and sworn to before me, a Notary Public in and for the COUNTY OF GILA, State of Arizona December 23 A.D., 2008.

Julie Wantland, Notary Public

My commission expires March 29, 2011.

JULIE WANTLAND
NOTARY PUBLIC - ARIZONA
GILA COUNTY
My Comm. Exp.: March 29, 2011

Shelter has many sweethearts to share your life

Will You Be Mine?

by Joan Stelk

Fresh from the water bowl
or was it the toilet this time?
Big wet kisses... Will you be mine?
Roses are red, violets are blue,
I'm leaving muddy paw prints... just for you!
I'm cute and I'm cuddly most of the time,
I give "Big Hugs" to friends of mine,
And my "Big Heart" beats with a special chime.
Best Friends Are Forever...
Will you be My Valentine?
From Your Dog

Gifts of a Lifetime

Author Unknown

If you give a dog a bone,
will he still remain or roam?
Or will he bury it deep in the ground
in the backyard of your home?
Will he measure it in size
or size it up as a gift?
Could he ever offer you something in return,
showing just how he can give?
Would it be too much to accept a box
shaped of a bean?
Could you appreciate the card message that
comes with every bark?
Or does it seem to come with nature to enjoy
an afternoon,
to run and toss, more balls get lost, but both
of you still seem to move...
His gift to you is nothing new, but you always
seem to take...
So, what did you get? Warm furry memories
with another passing day.

BY CHANDRA CUSHMAN
HUMANE SOCIETY OF CENTRAL ARIZONA

Ah. Valentine's Day. That romantic day filled with flowers, cards and candy, the excitement of a secret admirer, or the joy of spending time with your lover.

The dogs and cats here at the Humane Society of Central Arizona don't have anyone special to look forward to spending February 14th with. Unless, of course, you are treating yourself to a Valentine's Day gift and are considering adopting a new companion.

ADOPTION OPTIONS

If you don't have a special someone to share Valentine's Day with, maybe a new companion is a good idea. Gifting an animal for Valentine's Day may not be a good idea, so keep in mind we do have gift certificates for any occasion.

Of course, we always encourage anyone planning on adopting to be ready and able to care for a new pet before making the decision. If you are ready, we've got some sweethearts who would love to cuddle with you and be your Romeo, or Juliet.

Come meet them at the shelter, located at 812 S. McLane Road, or visit us online at humanesocietyventralaz.org. For more information, give us a call at (928) 474-5580.

BIA

My name is Bia and I am looking for Mr. Right to come along and sweep me off my feet! I'm a hopeless romantic who LOVEs to cuddle! I'm currently in a foster home but can be seen by appointment. I am an active girl who loves to play, play, play. I'm a true girl who loves the color pink. Come see me!

DONNER

My name is Donner and the ladies love me. I am a sweet, loyal gentleman who knows how to treat a lady right. I am kind and outgoing and love to make you laugh and smile. My captivating eyes will melt your heart with just one gaze. Come down and see for yourself.

AERO

Aero is my name, loving is my game. I'm a cool cat who likes some TLC. If you need a man in your life, consider me! I will listen to all your problems and cuddle with you so that you know it's going to be OK. With me on your side, what could wrong? I'm here for you babe, come down and see me and I'll show you.

ARIA

My name is Aria and I'm a fun-loving girl! I live on the edge and I'm looking for a companion to share all my wild, adventurous times with. If you're an attractive, outgoing person who likes to hike and be outdoors, then we're sure to hit it off.

SHEP

They call me Shep, and boy do I know how to attract the ladies. My blond hair, chocolate brown eyes and rippling muscles make the girls go crazy! I love to have a good time and am looking for someone who can keep up with me. I'm constantly on the go, so ladies, if you can handle a stud like me, you know where to find me.

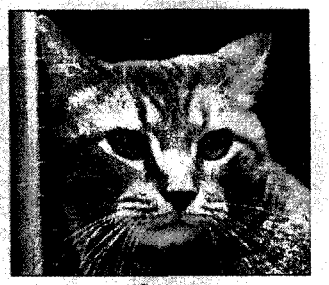
KELLY

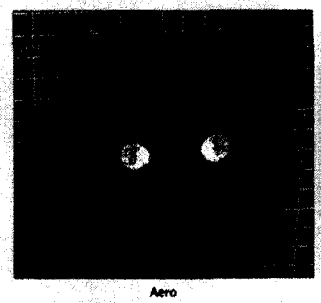
My name is Kelly and I'm as sweet as sugar! I'm an easygoing gal who loves everyone. I just want someone to cuddle with. I'm hoping Cupid's arrow will hit me so I can find the man of my dreams, who will love me for eternity.

Bia

Shep

Aria


Donner


Aero

Kelly

Notice of Hearing

Before the Arizona Power Plant and Transmission Line Siting Committee

Docket No. L-00000D-11-0068-00160, Case No. 160

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE MAZATZAL SUBSTATION AND 345KV INTERCONNECTION PROJECT, WHICH INCLUDES THE CONSTRUCTION OF TWO 345KV TRANSMISSION LINES AND A NEW 345/69/21KV SUBSTATION, SECTION 4, TOWNSHIP 8 NORTH, RANGE 10 EAST, G&SRB&M, ADJACENT TO THE INTERSECTION OF THE EXISTING FOUR CORNERS-CHOLLA-PINNACLE PEAK 345KV TRANSMISSION LINES AND FOREST ROAD 378, WITHIN THE TONTO NATIONAL FOREST IN GILA COUNTY, ARIZONA

NOTICE OF HEARING

A PUBLIC HEARING WILL BE HELD before the Arizona Power Plant and Transmission Line Siting Committee ("Committee") regarding the Application of Arizona Public Service Company ("APS") for a Certificate of Environmental Compatibility authorizing the Mazatzal Substation and 345kV Interconnection Project ("Project") in Gila County, Arizona.

The hearing will be held at the Chaparral Suites Scottsdale, 5001 N. Scottsdale Rd Scottsdale, Arizona 85250; telephone: 480-949-1414. The hearing shall begin on Tuesday, March 22, 2011, and if necessary, continue on Wednesday, March 23, 2011. The hearing will begin at 9:30 a.m. each day and will adjourn at approximately 5:00 p.m. Public comment may be heard during the time set for the hearing. Additional hearings, if necessary, will be noticed on the Arizona Corporation Commission ("ACC") website.

The page of the ACC website at which notice will be given is the Committee's Hearing Calendar page, available at: www.azcc.gov/AZ_Power_Plant/LineSiting-Calendar.asp.

PUBLIC COMMENT MAY BE TAKEN AT THE BEGINNING OF EACH HEARING DAY OR AT OTHER TIMES DURING THE HEARING AT THE DISCRETION OF THE CHAIRMAN OF THE COMMITTEE.

The Committee, at its discretion, may recess the hearing to a time and place to be announced during the hearing, or to be determined after the recess. The date, time, and place at which the hearing will resume will be posted on the Committee's Hearing Calendar page of the ACC website. **NOTE: NOTICE OF SUCH RESUMED HEARING WILL BE GIVEN; HOWEVER, PUBLISHED NOTICE OF SUCH RESUMED HEARING IS NOT REQUIRED.**

The Project involves the construction of a new 345/69/21kV substation and an interconnection with the existing eastern Cholla to Pinnacle Peak 345kV line that consists of two new 345kV transmission lines. The two 345kV transmission lines would interconnect in and out of the new substation, each approximately 600 feet in length. The Project is completely located on United States Forest Service (USFS) land, and an Environmental Assessment was prepared to fulfill requirements of the National Environmental Policy Act. The USFS issued a Finding of No Significant Impact for the Project in August 2010. The Applicant is requesting a 400 foot corridor for the interconnection.

Maps of the Project site and detailed information about the Project facilities are contained in the Application, which are available for inspection at the following locations:

- Docket Control Center of the ACC's Phoenix Office at 1200 West Washington Street, Suite 108, Phoenix, Arizona 85007;
- Payson Public Library, 328 N. McLane Road, Payson, Arizona 85541; and
- On the Internet using the ACC's e-Docket function, available at: edocket.azcc.gov/.

Each county and municipal government and state agency interested in the proposed Project and desiring to become a party to the proceeding, not less than ten (10) days before the date set for hearing, shall file with the Director of Utilities, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, a notice of its intent to be a party.

Any domestic, non-profit corporation or association, formed in whole or in part to promote conservation of natural beauty, to protect the environment, personal health, or other biological values, to preserve historical sites, to promote consumer interests, to represent commercial and industrial groups, or to promote the orderly development of the area in which the Project is to be located and desiring to become a party to the proceedings, not less than ten (10) days before the date set for hearing, shall file with the Director of Utilities, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, a notice of its intent to be a party.

The Committee or its Chairman, at any time deemed appropriate, may make other persons parties to the proceedings.

Any person may make a limited appearance at the hearing by filing a written statement with Docket Control of the Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, not less than five (5) days before the date set for hearing. A person making a limited appearance shall not be a party and shall not have the right to present testimony or cross-examine witnesses.

This proceeding is governed by Arizona Revised Statutes Sections 40-360 and 40-360.13 and Arizona Administrative Code R14-3-201 to R14-3-220. No substantive communication that is not in the public record may be made to any member of the Committee. The written decision of the Committee will be submitted to the Arizona Corporation Commission pursuant to Arizona Revised Statutes Section 40-360.07. Any person intending to be a party to the proceedings on these matters before the Arizona Corporation Commission must be a party to the proceedings before the Committee.

DATED this 4th day of February, 2011.

/s/ John Foreman, Esq.
Assistant Attorney General
Chairman, Arizona Power Plant and
Transmission Line Siting Committee

aps

P.O. Box 53999
Phoenix, AZ 85072

Feb. 28, 2011

Dear APS Customer:

This letter is to inform you that Arizona Public Service Company (APS) has filed an Application for a Certificate of Environmental Compatibility (CEC) for the Mazatzal Substation and 345-kilovolt (kV) Interconnection Project with the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) earlier this month. The proposed project involves building a new 345/69/21-kV substation that would include a short in and out connection off of the existing 345-kV transmission lines and two new 69/21-kV sub-transmission lines.

The proposed project is needed to provide reliable power and infrastructure to the communities in the Payson, Rye and Tonto Basin areas of Gila County, Ariz. APS has been working with the Tonto National Forest on an Environmental Assessment for the project due to the project being entirely within the Forest, and a decision and Finding of No Significant Impact (FONSI) was issued on Aug. 24, 2010.

As part of the CEC process, a public hearing will be held before the Siting Committee, regarding the application. The hearing will be held at the Chaparral Suites Scottsdale, 5001 N. Scottsdale Road, Scottsdale, Ariz., on March 22, 2011 at 9:30 A.M., and continuing if necessary on March 23, 2011.

The attached notice of filing provides additional information on the hearing and locations to obtain detailed project information, including the Docket Control Center of the ACC's Phoenix Office, the Payson Public Library and the ACC website. Information also can be found at APS's website aps.com/siting.

If you have any questions, please contact Brad Larsen at 602-493-4338 or by email at brad.larsen@aps.com.

Sincerely,

Brad Larsen

Brad Larsen, Project Manager
APS Transmission and Facility Siting Department

Attachment

PENGAD 800-631-6989
EXHIBIT
A-6
ADMITTED

4141 NORTH 32ND STREET | 602 956-4370 www.epgaz.com
SUITE 102 | 602 956-4374
PHOENIX, ARIZONA 85018

February 16, 2011

Joe and Shelly Brown
Hardt Creek Grazing Allotment
49821 N. Hwy 188
Payson, Arizona 85441

Dear Mr. and Mrs. Brown,

Arizona Public Service Company (APS) filed an Application for a Certificate of Environmental Compatibility (CEC) for the Mazatzal Substation and 345kV Interconnection Project with the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) earlier this month. The proposed project involves building a new 345/69/21kV substation, a short in and out connection off of the existing 345kV transmission lines and two new 69/21kV sub-transmission lines. The proposed project would provide reliable power and infrastructure to the communities in the Payson, Rye, and Tonto Basin areas of Gila County, Arizona. APS has been working with the Tonto National Forest on an Environmental Assessment for the project due to the project being entirely within the Forest, and a decision and Finding of No Significant Impact (FONSI) was issued on August 24, 2010. APS will request Siting Committee approval for a CEC for the loop in of the 345kV transmission lines and 345/69/21kV substation as the project has been determined as being environmentally compatible and would help to adequately address the project need.

A public hearing will be held before the Siting Committee, regarding the application. It will be held at the Chaparral Suites Scottsdale, 5001 N. Scottsdale Road, Scottsdale, Arizona, on March 22, 2011 at 9:30 A.M., and continuing if necessary on March 23, 2011.

The attached notice includes information where additional information can be found, including the Docket Control Center of the ACC's Phoenix Office, the Payson Public Library, and the ACC website. Information can also be found at http://www.aps.com.

Thank you.

Sincerely,

Kevin C. Duncan, Project Manager
Environmental Planning Group

cc: Brad Larsen, APS Project Manager

BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

Docket No. L-00000D-11-0068-00160, Case No. 160

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE MAZATZAL SUBSTATION AND 345KV INTERCONNECTION PROJECT, WHICH INCLUDES THE CONSTRUCTION OF TWO 345KV TRANSMISSION LINES AND A NEW 345/69/21KV SUBSTATION, SECTION 4, TOWNSHIP 8 NORTH, RANGE 10 EAST, G&SRB&M, ADJACENT TO THE INTERSECTION OF THE EXISTING FOUR CORNERS-CHOLLA-PINNACLE PEAK 345KV TRANSMISSION LINES AND FOREST ROAD 379, WITHIN THE TONTO NATIONAL FOREST IN GILA COUNTY, ARIZONA

NOTICE OF HEARING

A PUBLIC HEARING WILL BE HELD before the Arizona Power Plant and Transmission Line Siting Committee ("Committee") regarding the Application of Arizona Public Service Company ("APS") for a Certificate of Environmental Compatibility authorizing the Mazatzal Substation and 345kV Interconnection Project ("Project") in Gila County, Arizona.

The hearing will be held at the Chaparral Suites Scottsdale, 5001 N. Scottsdale Rd Scottsdale, Arizona 85250; telephone: 480-949-1414. The hearing shall begin on Tuesday, March 22, 2011, and if necessary, continue on Wednesday, March 23, 2011. The hearing will begin at 9:30 a.m. each day and will adjourn at approximately 5:00 p.m. Public comment may be heard during the time set for the hearing. Additional hearings, if necessary, will be noticed on the Arizona Corporation Commission ("ACC") website.

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The Project involves the construction of a new 345/69/21kV substation and an interconnection with the existing eastern Cholla to Pinnacle Peak 345kV line that consists of two new 345kV transmission lines. The two 345kV transmission lines would interconnect in and out of the new substation, each approximately 600 feet in length. The Project is completely located on United States Forest Service (USFS) land, and an Environmental Assessment was prepared to fulfill requirements of the National Environmental Policy Act. The USFS issued a Finding of No Significant Impact for the Project in August 2010. The Applicant is requesting a 400 foot corridor for the interconnection.

Maps of the Project site and detailed information about the Project facilities are contained in the Application, which are available for inspection at the following locations:

- Docket Control Center of the ACC's Phoenix Office at 1200 West Washington Street, Suite 108, Phoenix, Arizona 85007;
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- On the Internet using the ACC's e-Docket function, available at: edocket.azcc.gov/.

Each county and municipal government and state agency interested in the proposed Project and desiring to become a party to the proceeding, not less than ten (10) days before the date set for hearing, shall file with the Director of Utilities, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, a notice of its intent to be a party.

Any domestic, non-profit corporation or association, formed in whole or in part to promote conservation of natural beauty, to protect the environment, personal health, or other biological values, to preserve historical sites, to promote consumer interests, to represent commercial and industrial groups, or to promote the orderly development of the area in which the Project is to be located and desiring to become a party to the proceedings, not less than ten (10) days before the date set for hearing, shall file with the Director of Utilities, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, a notice of its intent to be a party.

The Committee or its Chairman, at any time deemed appropriate, may make other persons parties to the proceedings.

Any person may make a limited appearance at the hearing by filing a written statement with Docket Control of the Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, not less than five (5) days before the date set for hearing. A person making a limited appearance shall not be a party and shall not have the right to present testimony or cross-examine witnesses.

This proceeding is governed by Arizona Revised Statutes Sections 40-360 and 40-360.13 and Arizona Administrative Code R14-3-201 to R14-3-220. No substantive communication that is not in the public record may be made to any member of the Committee. The written decision of the Committee will be submitted to the Arizona

Corporation Commission pursuant to Arizona Revised Statutes Section 40-360.07. Any person intending to be a party to the proceedings on these matters before the Arizona Corporation Commission must be a party to the proceedings before the Committee.

DATED this 4th day of February, 2011.

John Foreman

John Foreman, Esq.
Assistant Attorney General
Chairman, Arizona Power Plant and
Transmission Line Siting Committee

4141 NORTH 32ND STREET
SUITE 102
PHOENIX, ARIZONA 85018
T 602 956-4370
F 602 956-4374
www.epgaz.com

February 16, 2011

Jack and Sherry Cowan
Deer Creek Grazing Allotment
P.O. Box 639
Payson, Arizona 85547

Dear Mr. and Mrs. Cowan,

Arizona Public Service Company (APS) filed an Application for a Certificate of Environmental Compatibility (CEC) for the Mazatzal Substation and 345kV Interconnection Project with the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) earlier this month. The proposed project involves building a new 345/69/21kV substation, a short in and out connection off of the existing 345kV transmission lines and two new 69/21kV sub-transmission lines. The proposed project would provide reliable power and infrastructure to the communities in the Payson, Rye, and Tonto Basin areas of Gila County, Arizona. APS has been working with the Tonto National Forest on an Environmental Assessment for the project due to the project being entirely within the Forest, and a decision and Finding of No Significant Impact (FONSI) was issued on August 24, 2010. APS will request Siting Committee approval for a CEC for the loop in of the 345kV transmission lines and 345/69/21kV substation as the project has been determined as being environmentally compatible and would help to adequately address the project need.

A public hearing will be held before the Siting Committee, regarding the application. It will be held at the Chaparral Suites Scottsdale, 5001 N. Scottsdale Road, Scottsdale, Arizona, on March 22, 2011 at 9:30 A.M., and continuing if necessary on March 23, 2011.

The attached notice includes information where additional information can be found, including the Docket Control Center of the ACC's Phoenix Office, the Payson Public Library, and the ACC website. Information can also be found at http://www.aps.com.

Thank you.

Sincerely,

Kevin C. Duncan, Project Manager
Environmental Planning Group

cc: Brad Larsen, APS Project Manager

BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

Docket No. L-00000D-11-0068-00160, Case No. 160

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES SECTION 40-360, et seq., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE MAZATZAL SUBSTATION AND 345KV INTERCONNECTION PROJECT, WHICH INCLUDES THE CONSTRUCTION OF TWO 345KV TRANSMISSION LINES AND A NEW 345/69/21KV SUBSTATION, SECTION 4, TOWNSHIP 8 NORTH, RANGE 10 EAST, G&SRB&M, ADJACENT TO THE INTERSECTION OF THE EXISTING FOUR CORNERS-CHOLLA-PINNACLE PEAK 345KV TRANSMISSION LINES AND FOREST ROAD 379, WITHIN THE TONTO NATIONAL FOREST IN GILA COUNTY, ARIZONA

NOTICE OF HEARING

A PUBLIC HEARING WILL BE HELD before the Arizona Power Plant and Transmission Line Siting Committee ("Committee") regarding the Application of Arizona Public Service Company ("APS") for a Certificate of Environmental Compatibility authorizing the Mazatzal Substation and 345kV Interconnection Project ("Project") in Gila County, Arizona.

The hearing will be held at the Chaparral Suites Scottsdale, 5001 N. Scottsdale Rd Scottsdale, Arizona 85250; telephone: 480-949-1414. The hearing shall begin on Tuesday, March 22, 2011, and if necessary, continue on Wednesday, March 23, 2011. The hearing will begin at 9:30 a.m. each day and will adjourn at approximately 5:00 p.m. Public comment may be heard during the time set for the hearing. Additional hearings, if necessary, will be noticed on the Arizona Corporation Commission ("ACC") website.

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The Project involves the construction of a new 345/69/21kV substation and an interconnection with the existing eastern Cholla to Pinnacle Peak 345kV line that consists of two new 345kV transmission lines. The two 345kV transmission lines would interconnect in and out of the new substation, each approximately 600 feet in length. The Project is completely located on United States Forest Service (USFS) land, and an Environmental Assessment was prepared to fulfill requirements of the National Environmental Policy Act. The USFS issued a Finding of No Significant Impact for the Project in August 2010. The Applicant is requesting a 400 foot corridor for the interconnection.

Maps of the Project site and detailed information about the Project facilities are contained in the Application, which are available for inspection at the following locations:

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Each county and municipal government and state agency interested in the proposed Project and desiring to become a party to the proceeding, not less than ten (10) days before the date set for hearing, shall file with the Director of Utilities, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, a notice of its intent to be a party.

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Corporation Commission pursuant to Arizona Revised Statutes Section 40-360.07. Any person intending to be a party to the proceedings on these matters before the Arizona Corporation Commission must be a party to the proceedings before the Committee.

DATED this 4th day of February, 2011.

John Foreman

John Foreman, Esq.
Assistant Attorney General
Chairman, Arizona Power Plant and
Transmission Line Siting Committee

March 3, 2011

Mr. John Foreman, Chairman

RE: Docket No. L-00000D-1-0068
Case No.: 160

Sir:

I live in Deer Creek Village, about 1 (one) mile northwest of the proposed Mazatzal Substation Project. I am in support of the Project IF it will stabilize power in the Village to 240 volts.

If not, then I have to say NO. Reason for this is because since October, 2004 when I moved into my home, voltage has been too high. Per APS documents (which I have my possession) shows that 47 times voltage was 240 volts. 82 times voltage was 256 volts.
These are the highs and lows.

Since 2004, a lot of my power tools, TV's, and motors have burned up.

If APS really needs this substation, take some of the $23,000,000.00 and fix the problem here in the Village!

Volts x AMPS = watts that we what we pay for.

As of 1:29 PM voltage was 247.6 volts.

Appreciate your feedback. Thank you.

John Adams
928-978-2974

PENGAD 800-631-6989
EXHIBIT
A-7
ADMITTED

Town of Payson
303 N. Beeline Hwy
Payson, AZ 85541

928/474-5242 Ext. 222
928/474-4610 Fax
928/978-2521

Office of the Mayor

DATE: March 12, 2011

Brad Larsen, P.E.
Re: Mazatzal Substation and 345kV Interconnection Project
PO Box 53933
MS 4030
Phoenix, AZ. 85072

Brad:

As Mayor and CEO of the Town, I want to communicate our support for the Mazatzal APS project that includes an in /out connection off of the existing 345-kV lines, and two new 69/21-kV sub-transmission lines. We strongly encourage **both the Arizona Power Plant and Transmission Siting Committee and the Arizona Corporation Commission** to grant APS' request for a Certificate of Environmental Compatibility (CEC).

The proposed project resolves a significant concern that the Town of Payson has shared with APS on several occasions during my tenure as mayor regarding reliability and vulnerability of our rural community. The minimal capacity of the singular backup 69-kV line from the northwest leaves us very vulnerable in the event of a failure of the Preacher Canyon transmission line.

This location is ideal for the intended project. It has received a Finding of No Significant Impact (FONSI) determination from the Tonto National Forest Service as part of the Environmental Assessment required.

Again, Payson strongly supports the granting of the Certificate of Environmental Compatibility.

Kenny Evans
Mayor

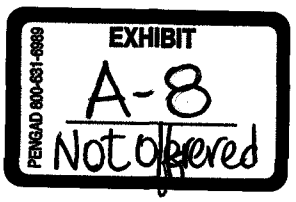
BEFORE THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES §§ 40-360, *et seq.*, FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING THE MAZATZAL SUBSTATION AND 345KV INTERCONNECTION PROJECT, WHICH INCLUDES THE CONSTRUCTION OF TWO 345KV TRANSMISSION LINES AND A NEW 345/69/21KV SUBSTATION, SECTION 4, TOWNSHIP 8 NORTH, RANGE 10 EAST, G&SRB&M, ADJACENT TO THE INTERSECTION OF THE EXISTING FOUR CORNERS–CHOLLA–PINNACLE PEAK 345KV TRANSMISSION LINES AND FOREST ROAD 379, WITHIN THE TONTO NATIONAL FOREST IN GILA COUNTY, ARIZONA.	Docket No. L-00000D-11-0068-00160 Case No. 160

CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

Pursuant to notice given as provided by law, the Arizona Power Plant and Transmission Line Siting Committee (the "Committee") held public hearings on March 22 and 23, 2011, in Scottsdale, Arizona, all in conformance with the requirements of Arizona Revised Statutes ("A.R.S.") §§ 40-360, et seq., for the purpose of receiving evidence and deliberating on the Application of Arizona Public Service Company ("Applicant") for a Certificate of Environmental Compatibility ("CEC") in the above-captioned case (the "Project").

The following members and designees of members of the Committee were present at one or more of the hearings for the evidentiary presentations and/or for the deliberations:



John Foreman	Chairman, Designee for Arizona Attorney General Tom Horne
Bret Parke	Designee for Director, Arizona Department of Environmental Quality
Laura Grignano	Designee for Director, Arizona Department of Water Resources
Jack Haenichen	Designee for Director, Energy Department, Arizona Department of Commerce (or its successor organization)
David L. Eberhart	Designee of the Chairman, Arizona Corporation Commission
Patricia A. Noland	Appointed Member
Jeff McGuire	Appointed Member
F. Ann Rodriguez	Appointed Member
Michael Palmer	Appointed Member
David Richins	Appointed Member
Paul Walker	Appointed Member

Applicant was represented by Albert H. Acken of Lewis & Roca LLP and Linda J. Arnold of Arizona Public Service Company. At the conclusion of the hearing, the Committee, after considering the Application, the evidence, testimony and exhibits presented at the hearing, and being advised of the legal requirements of A.R.S. §§ 40-360 to 40-360.13, and upon motion duly made and seconded, voted __ to __ to grant the Applicant this CEC for construction of the Project.

The Project as approved consists of a new 345/69/21kV substation and two new 345kV transmission lines that will interconnect with the existing eastern Cholla to Pinnacle Peak 345kV transmission line. Construction of the Project will include structure modifications for the existing 345kV transmission structures in the corridor, including adding turning structures to the eastern line and a taller structure to the

western line allowing the interconnection to cross underneath. Construction of the Project will require improvements to the existing forest roads.

The 345/69/21kV substation site will be approximately 2,080 feet long by an average of 420 feet wide, and will occupy approximately 20.1 acres of the Project site. The two 345kV transmission lines will interconnect in and out of the new substation. The first 345kV transmission line interconnection will originate from the easternmost existing 345kV transmission line of the two existing 345kV transmission lines in the corridor, and proceed to the new substation, located approximately 600 feet to the west. The second 345kV transmission line interconnection will proceed from the new substation, approximately 600 feet east to the new lattice structure on the existing easternmost 345kV transmission line of the two existing 345kV transmission lines in the corridor. The Project will be constructed with lattice structures for the 345kV lines.

The Project will be located on the east side of State Route 87, north of Arizona 188, and is entirely located on land administered by the United States Forest Service, Tonto National Forest. The Project is located in the southeast quarter of Section 4 and the southwest quarter of Section 3 in Township 8 North, Range 10 East, adjacent to the intersection of the existing Four Corners-Cholla-Pinnacle Peak 345kV transmission lines and forest road 379, within the Tonto National Forest in Gila County, Arizona. The interconnection lines will be within a 400 foot wide right-of-way. A map of the general location of the Project is set forth in Exhibit A, attached hereto.

CONDITIONS

Proposed conditions are based on the Case 158 (Q113 Interconnection Project) CEC.

This CEC is granted upon the following conditions:

1. Any transfer or assignment of this CEC shall require the assignee or successor to assume all responsibilities of the Applicant listed in this CEC and its conditions in writing as required by A.R.S. § 40-360.08(A) and R14-3-213(F) of the Arizona Administrative Code.

2. During the construction of the Project, Applicant shall comply with all applicable statutes, ordinances, master plans and regulations of the United States, the State of Arizona, and any other governmental entities having jurisdiction, and their agencies or subdivisions, including but not limited to the following:

   2.1. all applicable land use regulations;

   2.2. all applicable zoning stipulations and conditions, including but not limited to landscaping and dust control requirements;

   2.3. all applicable water use, discharge, and/or disposal requirements of the Arizona Department of Water Resources (the "ADWR") and the Arizona Department of Environmental Quality (the "ADEQ");

   2.4. all applicable noise control standards; and

   2.5. all applicable regulations governing storage and handling of hazardous chemicals and petroleum products. **[Modified]**

3. Applicant shall obtain all approvals and permits required by the United States, the State of Arizona and any other governmental entities having jurisdiction necessary to construct the Project. **[Modified]**

4. If any archaeological site, paleontological site, historical site or an object that is at least fifty years old is discovered on state, county or municipal land during construction of the Project, Applicant or its representative in charge shall promptly report the discovery to the Director of the Arizona State Museum, and in consultation with the Director, shall immediately take all reasonable steps to secure and maintain the preservation of the discovery as required by A.R.S. § 41-844.

5. If human remains and/or funerary objects are encountered on private land during the course of any ground-disturbing activities relating to the construction of the Project, Applicant shall cease work on the affected area

of the Project and notify the Director of the Arizona State Museum as required by A.R.S. § 41-865.

6. Applicant shall comply with the notice and salvage requirements of the Arizona Native Plant Law (A.R.S. §§ 3-901, et seq.) and shall, to the extent feasible, minimize the destruction of native plants during Project construction.

7. This authorization to construct this Project shall expire in seven years from the date the CEC is approved by the Arizona Corporation Commission (the "Commission"). However, prior to expiration, Applicant may request that the Commission extend this time limitation. **[Modified]**

8. In the event that the Project requires an extension of the term of this CEC prior to completion of construction, Applicant shall use reasonable means to notify all landowners and residents within one mile of the Project corridor, all persons who made public comment at this proceeding, and all parties to this proceeding of the request and the date, time and place of the hearing in which the Commission will consider the request for extension.

9. Applicant shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of the transmission lines and related facilities addressed in this CEC. Applicant shall maintain written records for a period of five years of all complaints of radio or television interference attributable to operation, together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution shall be noted and explained. Upon request, the written records shall be provided to Staff of the Commission.

10. Within 120 days of the Commission decision granting this CEC, Applicant shall post signs in public rights-of-way giving notice of the Project corridor to the extent authorized by law. Applicant shall place signs in prominent locations at reasonable intervals such that the public is notified along the full length of the transmission line until the transmission structures are constructed. To the extent practicable, within 45 days of securing easement or right-of-way for the Project, Applicant shall erect and maintain signs providing public notice that the property is the site of a future transmission line. Such signage shall be no smaller than a normal roadway sign. The signs shall advise:

    10.1. that the site has been approved for the construction of Project facilities;

    10.2. the expected date of completion of the Project facilities;

    10.3. a phone number for public information regarding the Project;

    10.4. the name of the Project;

    10.5. the name of Applicant; and

    10.6. the website of the Project.

11. Applicant, or its assignee(s), shall design the transmission line to incorporate reasonable measures to minimize impacts to raptors.

12. Applicant, or its assignee(s), shall use non-specular conductors and non-reflective surfaces for transmission line structures.

13. Before construction on this Project may commence, Applicant shall file the plan of development referred to as the "Site Development Schedule and Site Plan" required by the Tonto National Forest prior to issuance of the Special Use Permit, hereinafter referred to as the "Plan," with the Commission Docket Control. Where practicable, the Plan shall specify that Applicant shall use existing roads for construction and access, minimize impacts to wildlife, minimize vegetation disturbance outside of

the Project right-of-way, particularly in drainage channels and along stream banks, and shall re-vegetate, unless waived by the landowner, native areas of construction disturbance to its preconstruction state outside of the power line right-of-way after construction has been completed. The Plan shall specify Applicant's plans for coordination with Arizona Game and Fish Department ("AGFD") and the Arizona State Historic Preservation Office (the "SHPO"). Applicant shall protect against invasive species and noxious weeds by adhering to the measures presented in the Plan. **[Modified]**

14. With respect to the Project, Applicant shall participate in good faith in state and regional transmission study forums to coordinate transmission expansion plans related to the Project and to resolve transmission constraints in a timely manner.

15. Applicant shall provide copies of this CEC to the Gila County Department of Community Development, the Arizona Department of Transportation, the SHPO, and AGFD. **[Modified]**

16. Before construction commences on this Project, Applicant shall provide known homebuilders and developers who are building upon or developing land within one mile of the center line of the certificated route of the transmission line, and a written description of the Project. The written description shall identify the location of the Project and contain a pictorial depiction of the type of transmission line being constructed. Applicant shall also encourage the developers and homebuilders to include this information in the developers' and homebuilders' homeowners' disclosure statements.

17. Applicant will follow the most current Western Electricity Coordinating Council/North American Electric Reliability Corporation planning

standards, as approved by the Federal Energy Regulatory Commission, and National Electrical Safety Code construction standards.

18. Applicant shall submit a compliance-certification letter annually, identifying progress made with respect to each condition contained in the CEC, including which conditions have been met. Each letter shall be submitted to the Commission Docket Control commencing on December 1, 2011. Attached to each certification letter shall be documentation explaining how compliance with each condition was achieved. Copies of each letter, along with the corresponding documentation, shall be submitted to the Arizona Attorney General and Department of Commerce Energy Office (or its successor organization). The requirement for the compliance-certification shall expire on the date the Project is placed into operation.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This CEC incorporates the following findings of fact and conclusions of law:

1. The Project aids the state in meeting the need for an adequate, economical and reliable supply of electric power.
2. The conditions placed on the Project in the CEC by the Committee effectively minimize the impact of the Project on the environment and ecology of the state.
3. The Project is in the public interest because the Project's contribution to meeting the need for an adequate, economical and reliable supply of electric power outweighs the minimized impact of the Project on the environment and ecology of the state.

DATED this ____ day of _____, 2011.

THE ARIZONA POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

_____

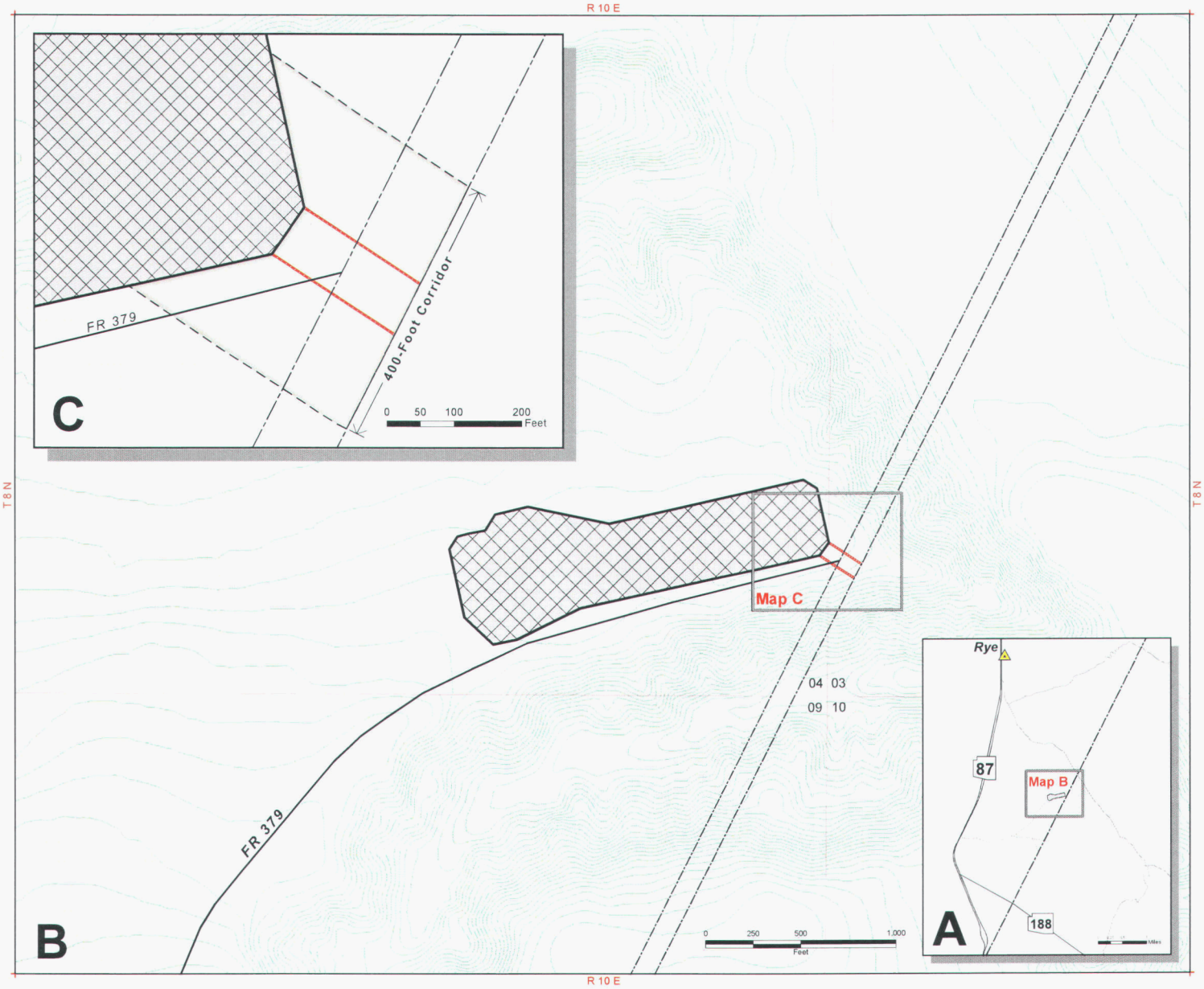
Hon. John Foreman, Chairman

EXHIBIT A

General Location Map of the Project

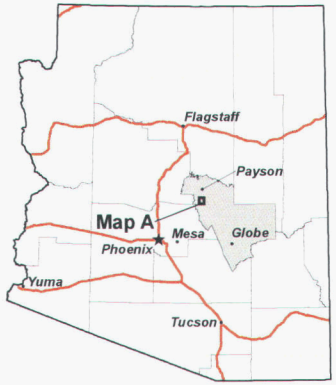
Mazatzal Substation and 345kV Interconnection Project

Proposed Interconnection



LEGEND

- Proposed Substation
- 345kV Interconnection
- 345kV Right-of-Way (400 feet)
- Existing Substation
- Existing 345kV Transmission Line
- Road
- 10 Section Line



January 2011

Sources: StreetMap USA, ESRI 2007; EPG 2008.

APS

epg

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ARIZONA CORPORATION COMMISSION

ERNEST G. JOHNSON
Executive Director

PAD / CPA

MAR 01 2011

RECEIVED

February 25, 2011

Mr. John Foreman
Assistant Attorney General
Office of the Attorney General
1275 West Washington Street
Phoenix, Arizona 85007-2926

RE: MAZATZAL SUBSTATION AND 345KV INTERCONNECTION PROJECT LINE SITING #160 (DOCKET CONTROL NO. L-00000D-11-0068-0160)

Dear Mr. Foreman:

On February 4, 2011, you sent a letter to the Utilities Division concerning Line Siting Case #160, the Mazatzal Substation and 345kV Interconnection Project. Below is Staff's response to your question.

Do you have an opinion about whether the proposed project improves the reliability or safety of operation of the grid?

Staff believes that the proposed project would improve the reliability of service to Arizona Public Service Company customers by providing a looped transmission system, and improving quality of service in the area by providing a stable voltage source. The project would also provide adequate capacity to meet the projected customer load in the area.

Sincerely,

Steven M. Olea
Director
Utilities Division

SMO:PKB:lhm

PENGAD 800-631-6989
EXHIBIT
A-9
ADMITTED

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
5000 W. CAREFREE HIGHWAY
PHOENIX, AZ 85086-5000
(602) 942-3000 • WWW.AZGFD.GOV

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ROBERT E. MANSELL, WINSLOW
DIRECTOR
LARRY D. VOYLES
DEPUTY DIRECTORS
GARY R. HOVATTER
BOB BROSCHEID

March 17, 2011

Mr. John Forman
Arizona Power Plant and Line Siting Committee
Docket Control of Arizona Corporation Commission
1200 W. Washington Street
Phoenix, AZ 85007

Re: **Arizona Public Service – Application for a Certificate of Environmental Compatibility for Mazatal Substation and 345kV Interconnection Project – Case No. 160.**

Dear Mr. Foreman:

The Arizona Game and Fish Department (Department) has reviewed the Certificate of Environmental Compatibility (CEC), dated January 2011, regarding the above-referenced project. The Department understands the proposed project would involve the construction of a substation and two 345 kV interconnect transmission lines. The Department has the following comments.

The Department has no concerns with Threatened, Endangered, or Sensitive species. However, we do have some concerns with the impacts to recreation and hunting opportunity that this project may create. Largely, we are concerned with the potential restrictions of public access to FR379. This area is accessed heavily by our hunter constituents for deer, javelina, and quail hunts. Therefore, we strongly believe public access should be maintained and any closures be for the shortest period of time possible on FR379.

The second issue is that the substation would disrupt local wildlife movement patterns and use of SV Tank. Javelina, deer, and other common wildlife use SV Tank and Conlee Tank. They move up out of Rye Creek and the unnamed drainage/canyon to the southeast of the project area to access SV tank. The Department recommends mitigating the project by developing a wildlife water or stock tank south of the project area in Section 16 or 17.

The Department appreciates the opportunity to provide comments on the Arizona Public Service Application for a Certificate of Environmental Compatibility for Mazatal Substation and 345kV Interconnection Project – Case No. 160. If you have any questions regarding this letter, please contact me at (623) 236-7606.

Sincerely,

Ginger Ritter

Ginger L. Ritter
Project Evaluation Program Specialist, Habitat Branch

EXHIBIT
A-10
ADMITTED
PENGAD 800-631-6989

cc: Laura Canaca, Project Evaluation Program Supervisor
Kelly Wolff-Krauter, Habitat Program Manager, Region VI

AGFD #M11-02043845