Application for a Certificate of Environmental Compatibility

Project Red Hawk

Prepared for:

Arizona Power Plant and Transmission Line Siting Committee

Prepared by:

Salt River Project Agricultural Improvement and Power District

Volume 1 of 1

Date: September 2019

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LIST OF ACRONYMS AND ABBREVIATIONS

ABTO	Abert's Towhee
ACC	Arizona Corporation Commission
A.D.	Anno Domini
ADOT	Arizona Department of Transportation
AGFD	Arizona Game and Fish Department
AM	Amplitude Modulation
APE	Area of Potential Effects
APLIC	Avian Power Line Interaction Committee
ARHP	Arizona Register of Historic Places
ARS	Arizona Revised Statutes
ASM	Arizona State Museum
AZDA	Arizona Department of Agriculture
B.C.	Before Christ
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management
BUOW	Western Burrowing Owl
CEC	Certificate of Environmental Compatibility
dB	Decibels
dBA	A-weighted Decibels
DNL	Day/Night Average Noise Level
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEHA	Ferruginous Hawk
FHWA	Federal Highway Administration
FM	Frequency Modulation
GIS	Geographical Information Systems
GLO	General Land Office
Hz	Hertz
IPaC	Information for Planning and Consulting
KOP	Key Observation Point
kV	Kilovolt
MCDOT	Maricopa County Department of Transportation
NEPA	National Environmental Policy Act
NPL	Arizona Native Plant Law
NRHP	National Register of Historic Places
P-MIP	Pima-Maricopa Irrigation Project
PAD	Planned Area Development
PEFA	American Peregrine Falcon
PEP	Project Evaluation Program
Project	Project Red Hawk
ROW	Right-of-way
RWCD	Roosevelt Water Conservation District
SAVS	Savannah Sparrow
SGCN	Species of Greatest Conservation Need

SHPO	State Historic Preservation Office
SPRR	Southern Pacific Railroad Company
SR	State Route
SRP	Salt River Project Agricultural Improvement and Power District
T&E	Threatened and Endangered
T&PRR	Texas and Pacific Railroad Company
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WSCA	Wildlife of Special Concern in Arizona

INTRODUCTION

The Salt River Project Agricultural Improvement and Power District (SRP), under Arizona Revised Statute §40-360 *et seq*., submits this application for a Certificate of Environmental Compatibility (CEC or Application) for Project Red Hawk (Project). The Project is designed to serve a large data center being developed and owned by a customer. The Project is located on 187 acres owned by the customer in Mesa (the Project Site).

This Application requests approval for construction of electrical facilities to provide requested energy for the data center. The facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit and will include a switchyard and multiple transformers, located as needed throughout the Project Site. Each transformer will be connected to the switchyard by a 230kV circuit. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Arizona and Maricopa County, Arizona and all facilities will be constructed on the Project Site.

As required by Arizona Administrative Code R14-3-219, this CEC Application is structured as follows:

- Exhibit A – Project Location and Land Use
- Exhibit B – Environmental Studies
- Exhibit C – Areas of Biological Wealth
- Exhibit D – Biological Resources
- Exhibit E – Scenic Areas, Historic Sites and Structures, Archaeological Sites
- Exhibit F – Recreational Purposes and Aspects
- Exhibit G – Concepts of Typical Facilities
- Exhibit H – Existing Plans
- Exhibit I – Noise Emissions and Communication Interference
- Exhibit J – Special Factors

A list of acronyms is provided following the Table of Contents.

Project Description

This Application presents to the Arizona Power Plant and Transmission Line Siting Committee (Committee) a Project designed to meet the customer's need to facilitate better integration of electric system and load. The objective is to provide a level of reliability, efficiency, and redundancy to the customer beyond traditional configurations. This Project will further the reputation of the valley as a world class center for high tech development and will further the economic development plans of the City of Mesa.

The load proposed to be served by the facilities described by this Application will be contained within the 187 acre Project Site. The Project Site has recently been rezoned from Light Industrial and Planned Employment Park to Employment Opportunity to create the Red Hawk Employment Opportunity District. The City of Mesa approved the development plan for the data center

associated with the proposed Project. The proposed Project consists of a 230 kilovolt (kV) switchyard connected by two incoming 230kV transmission circuits and up to ten outgoing 230kV circuits, which will run to transformers in various locations on the Project Site. The existing Browning-Santan 230kV line will break into the new switchyard located on the northern portion of the Project Site. High voltage structures (230kV) will be constructed, as needed, to serve the transformers. The actual configuration will await the determination of customer need.

The Project will be located on land solely owned by the requesting customer or within SRP's existing right-of-way (ROW) in an area of Mesa which the City is actively marketing to high tech customers south of the existing SRP Browning-Santan high voltage transmission corridor.

Figure 1 shows the Project Site and the surrounding area.

Figure 2 depicts a closer view of the Project Site on an aerial basis.

In summary, the existing Browning-Santan 230kV line will break into a new switchyard on the customer's property. The switchyard will interconnect to multiple 230kV transformers, with the transformer low side voltage to be determined according to actual need. High voltage structures (230kV) will be constructed, as needed, to serve each transformer. It is estimated that the circuits will be supported by up to 22 structures having an approximate height of 130 feet.

The Project Site is in an area that the City of Mesa is targeting more high tech land uses and expects the areas to the south, west and east to transition to this new land use. The Project Site is bounded to the north by SRP's high voltage transmission corridor (one 500kV circuit, two 230kV circuits and one 69kV circuit) and then by residential development. However, the buffer of the existing transmission corridor will help to minimize any impact to these homes.

Figure 3 is a land ownership map showing the major parcels and uses in the area.

SRP requests authorization to construct the facilities anywhere within the Project Site, as the customer's needs may dictate and requests a twenty year term.

Purpose and Need

This Project is designed to efficiently and reliably provide large amounts of energy to expected customer uses. The Project will further the integration of the electric system and load to provide high levels of reliability and flexibility.

The Project supports Mesa's economic development plan. SRP's need for the Project draws on its dual role in the communities it serves – supporting long-term economic development and providing reliable power to its customers.

Summary of Public Process

While this Project is to be constructed on land owned by the requesting customer and does not present traditional route option proposals, SRP has conducted a public process comprised of numerous outreach activities. The outreach process informed the public, public officials representing the region, jurisdictional agencies, key landowners and stakeholders. The process included briefings, post card mailings, phone calls and emails to inform the public. A 1-800 information line and a Project website were developed to allow members of the public to obtain information about the Project. This process is described in further detail in **Exhibit J.**

Summary of Environmental Compatibility

The following provides a summary of the environmental compatibility of the Project sought in this Application:

- No significant or detrimental effects to fish, wildlife, plant life, and associated forms of life upon which they are dependent.
- No significant or detrimental effects associated with noise emission levels and interference with communication signals.
- Neither SRP nor jurisdictional agencies have any plans for future development of recreational facilities associated with the Project. Project implementation would be consistent with safety considerations and regulations.
- No significant or detrimental effects to existing scenic areas, historic sites and structures or archaeological sites at or in the vicinity of the proposed site.
- The Project is environmentally compatible with the total environment of the area.
- No significant or detrimental effects to geology and soils, surface water, or groundwater quality and availability.

R5E R6E R6E R7E R7E R8E

T1N T1S T2S T1S

University Dr
Main St
Broadway Rd
Southern Ave
Baseline Rd
Guadalupe Rd
Elliot Rd
Warner Rd
Ray Rd
Williams Field Rd
Pecos Rd

Lindsay Rd
Val Vista Dr
Greenfield Rd
Higley Rd
Power Rd
Sossaman Rd
Ellsworth Rd
Crismon Rd
Signal Butte Rd
Meridian Rd
Gilbert Rd
Recker Rd
Hawes Rd
Ironwood Rd

Eastern Canal
Consolidated Canal
Roosevelt Water Conservation District Canal
Central Arizona Project Canal
Western Canal

60
202
24
UPRR

GILBERT
MESA
APACHE JUNCTION
BROWNING
QUEEN CREEK

Browning - Santan Corridor
Project Site
ELLIOT ROAD TECHNOLOGY CORRIDOR
SANTAN
BALL (FUTURE)
PHOENIX-MESA GATEWAY AIRPORT

Maricopa Co.
Pinal Co.

R5E R6E R6E R7E R7E R8E

Legend

- Existing / Future Substation
- Existing Transmission Lines
- US Route or State Highway
- Future State Highway 24
- Major Road
- Railroad
- Canal
- Municipal Boundary
- Project Site
- Elliot Road Technology Corridor
- Township / Range Boundary

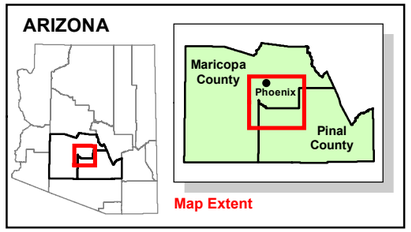
Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land

0 0.5 1 1.5 2
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP. Town of Gilbert, USGS.

ARIZONA



Map Extent

SRP®

PROJECT RED HAWK
FIGURE 1 REGIONAL OVERVIEW

Map Extent: Maricopa & Pinal Counties, AZ

Date: 9.17.19		Author: sjw



Legend

- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- State Highway
- Major Road
- Canal
- Municipal Boundary
- Project Site
- Elliot Road Technology Corridor

0 0.1 0.2 0.3 0.4 0.5
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

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PROJECT RED HAWK
FIGURE 2
PROJECT LOCATION

Map Extent: Maricopa County, AZ

Date: 9.17.19		Author: sjw



Legend

- School
- Church
- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- Major Road
- Canal
- Municipal Boundary
- Neighborhoods
- Recreation Facility

Project Components

- Project Site
- Approximate Location of Switchyard
- 2640-Ft Buffer of Project Site

0 0.1 0.2 0.3
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

SRP®

PROJECT RED HAWK
FIGURE 3 PROJECT SITE

Map Extent: Maricopa County, AZ

Date: 9.17.19		Author: sjw

APPLICATION

(Pursuant to Arizona Revised Statutes (A.R.S.) Sections 40-360.03 and 40-360.06)

1. Name and address of the Applicant, or in the case of a joint project, the Applicants.

Name: Salt River Project Agricultural Improvement and Power District (SRP)
Address: 1500 North Mill Avenue
Tempe, AZ 85281-1298

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

Name: Kim Humphrey, PE, Manager Strategic System Projects
Address: PO Box 52025, Phoenix 85072-2025
Telephone: (602) 236-4451
Fax: (602) 236-0180
Email: Kim.Humphrey@srpnet.com

3. State each date on which the Applicant has filed a Ten Year Plan in compliance with A.R.S. Section 40-360.02 and designate each such filing in which the facilities for which this Application is made were described. If they have not been previously described in a ten-year plan, state the reasons therefore.

In accordance with A.R.S. Section 40-360.02, SRP files Ten Year Plans each year with the Arizona Corporation Commission (ACC). Because this Project is driven solely by customer need it was not filed in SRP's latest Ten Year Plan filed with the Arizona Corporation Commission on January 31, 2019. While this Project can be viewed largely similar to a distribution project, SRP plans to include the project in future Ten Year Plans.

4. Description of the proposed facilities, including:

4.1 Description of electric generating plant.

Not Applicable.

4.2 Description of the proposed transmission lines.

4.2.1 General Description.

The proposed Project consists of a 230 kilovolt (kV) switchyard connected by two incoming 230kV circuits and up to ten outgoing 230kV circuits, which will run to transformers in various locations on the Project Site. The existing Browning-Santan

230kV line will break into the new switchyard located on the northern portion of the Project Site. High voltage structures (230kV) will be constructed, as needed, to serve the transformers. The actual configuration will await the determination of customer need.

4.2.1.1 Nominal voltage for which the lines are designed.

The lines are designed for a nominal voltage of 230kV.

4.2.1.2 Description of proposed structures.

The Project proposes to use single shaft tubular steel structures (poles). The incoming 230kV transmission circuits will require replacement and new poles as necessary to break the existing Browning-Santan 230kV line into the switchyard, and related components. The outgoing circuits will require up to 22 poles, framed as single and/or double circuit as required by the design.

4.2.1.3 Description of proposed switchyards and substations.

The proposed 230kV switchyard will be within the Project Site and will accommodate up to 12 230kV circuit terminations. The switchyard will include a control room, bus work, circuit breakers, conduits, relaying and communication equipment, and other related components. The switchyard will be enclosed by chain link fencing.

The 230kV switchyard will serve transformers located around the Project Site. Each transformer location will include a control room, bus work, circuit breakers, conduits, relaying and communication equipment, and other related components, and will be enclosed by chain link fencing.

4.2.1.4 Purpose for constructing proposed transmission lines.

- This Project is designed to efficiently and reliably provide large amounts of energy to expected customer uses. The Project will further the integration of the electric system and load to provide high levels of reliability and flexibility.
- The Project will locate high voltage power transformers adjacent to electric loads, which may differ from typical configurations.

- The objective is to provide a level of reliability and redundancy to the customer beyond traditional configurations.

4.2.2 General Location.

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

All components of the proposed Project will be built within SRP's existing right-of-way (ROW) or the 187 acre parcel located on the northwest corner of South Sossaman Road and East Elliot Road. The proposed switchyard will be located on the northern boundary of the parcel adjacent to the existing Browning-Santan 230kV line.

4.2.2.2 Straight-line distance between such geographic points.

The straight line distance is not known at this time but all components will be located on SRP's existing ROW or the 187 acre customer's private property.

4.2.2.3 Length of the transmission line for each alternative route.

Not Applicable.

4.2.3 Detailed Dimensions.

4.2.3.1 Nominal width of Right-of-way (ROW) required.

Each 230kV line (single or double circuit) will occupy a width between 80 and 100 feet within the Project Site.

4.2.3.2 Nominal length of span.

Span length is the distance between each pole. The nominal length of span may vary from approximately 600 feet to 800 feet depending on numerous factors, including the needs of the customer as they develop.

4.2.3.3 Maximum height of supporting structures.

The nominal height of the proposed structures would be 110 to 130 feet. The maximum height of the proposed structures would not exceed 160 feet.

4.2.3.4 Minimum height of conductor above ground.

The minimum height of the 230kV conductor above existing grade would be 22.5 feet.

4.2.4 To the extent available, estimate costs of proposed transmission line and route, stated separately. (If Application contains alternative routes, furnish an estimate for each route and a brief description of the reasons for any variations in such estimates.)

The costs related to the switchyard are estimated to be approximately $36.5 million. This is an estimate only and actual costs will vary. Other Project costs are not known at this time.

4.2.5 Description of the proposed route and substation locations.

All components of the proposed Project will be built within SRP's existing ROW or the 187 acre parcel located on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Arizona and Maricopa County, Arizona.

4.2.6. Land Ownership

All components of the proposed Project will be built within SRP's existing ROW or the customer's private 187 acre parcel.

5. Jurisdiction.

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

The proposed Project would be constructed within the jurisdiction of the City of Mesa, Arizona and Maricopa County, Arizona.

5.2 Designation for proposed sites or routes, if any, which are contrary to the zoning ordinances or master plans of affected areas of jurisdiction.

Not Applicable.

6. Description of the environmental studies the Applicant has performed or intends to perform.

KP Environmental, Inc. has conducted environmental studies, including field studies and routing analyses, to support this Application. Potential environmental effects of construction and implementation of the Project are included in the exhibits to this Application. In addition, a Class I Previous Cultural Resources Records Review has

been provided (See **Exhibit E-1**). Prior to construction, the Applicant will conduct a Class III pedestrian survey for disturbed areas of the parcel not previously surveyed.

7. Rationale for route selection/preference.

The proposed Project described in this Application was selected and supported by environmental studies, customer needs and electrical system planning. Advantages of this Project include the following:

- This Application presents to the Committee with a plan for the integration of the electric system and load to better facilitate the customer's specific uses. The concept is to modify the usual substation location so that the electric loads can be located adjacent to the high voltage transformers at the request of the customer. The objective is to provide a level of reliability, efficiency, and redundancy to the customer beyond traditional configurations. This Project will further the reputation of the valley as a world class center for high tech development and will further the economic development plans of the City of Mesa.
- No significant or detrimental effects to fish, wildlife, plant life, and associated forms of life upon which they are dependent.
- No significant or detrimental effects associated with noise emission levels and interference with communication signals.
- Neither SRP nor jurisdictional agencies have any plans for future development of recreational facilities associated with the Project. Project implementation would be consistent with safety considerations and regulations.
- No significant or detrimental effects to existing scenic areas, historic sites and structures or archaeological sites at or in the vicinity of the Project Site.
- The Project is environmentally compatible with the total environment of the area.
- No significant or detrimental effects to geology and soils, surface water, or groundwater quality and availability.

Based on the information provided above, SRP hereby affirms, upon thorough expert scientific environmental evaluation and analysis, that the Project is environmentally compatible and respectfully requests the Committee issue a Certificate of Environmental Compatibility (CEC), with a term of 20 years.

By:

Kim Humphrey

ORIGINAL and 25 copies of the foregoing hand delivered and filed with the Director of Utilities, Arizona Corporation Commission, this September 23, 2019.

EXHIBIT A
PROJECT LOCATION AND LAND USE

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 of 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 applicant's order of preference.

Where commercially available, a topographic map, 1:62,500 scale, of each proposed transmission line route of more than 50 miles in length showing that portion of the route within two miles of any subdivided area. The general land use plan within the area shall be shown on a 1:62,500 map, which shall also show the areas of jurisdiction affected and any boundaries between such areas of jurisdiction. If the general land use plan is uniform throughout the area depicted, it may be described in the legend in lieu of an overlay.

Project Location

Figure A-1 depicts the Project Red Hawk (Project) Site, jurisdictional land ownership, and the adjacent area within a 20-mile area on a topographic map (1:250,000 scale).

Figure A-2 depicts the Project Site including a 2-mile buffer of the Project Site, jurisdictional land ownership, and the adjacent area on a topographic map (1:62,500 scale).

Figure A-3 depicts the City of Mesa's existing land uses within a 2-mile buffer of the Project on a topographic map (1:62,500 scale).

Figure A-4 depicts the Town of Gilbert existing land use within a 2-mile buffer of the Project on a topographic map (1:62,500 scale).

Figure A-5 depicts existing Maricopa County, Arizona, land use within a 2-mile buffer of the Project on a topographic map (1:62,500 scale). While there are some out parcels or islands of Maricopa County in the City of Mesa limits, the City of Mesa includes these areas in their planning area boundary and as such they are included in **Figure A-3.**

Figure A-6 is a more detailed map of the zoning within the City of Mesa.

Figure A-7 is a more detailed map of the zoning within the Town of Gilbert.

The Project Site is comprised of 187 acres and consists of private parcels all owned by the customer and is currently Agricultural land use. The land uses in the vicinity of the Project Site include the following land uses: Agriculture, Commercial, Industrial, Office, Open Space/Parks/Retention, Public and Semi-Public, Residential, Transportation/Communications/Utilities, and Vacant land. Private land parcels within the vicinity of the Project are administered primarily by the City of Mesa and the Town of Gilbert with some unincorporated areas of Maricopa County.

Land Ownership

The land ownership within the Project Site consists of private parcels in the City of Mesa. The surrounding area has land ownership that consists of private parcels in the City of Mesa, the Town of Gilbert, as well as some parcels or islands under Maricopa County jurisdiction. The Project area includes many existing linear features including roadways, electric utility infrastructure lines, highway corridors and canals. There are no designated state, federal or tribal lands that border the Project Site. The Roosevelt Water Conservation District (RWCD) Canal and Maricopa County Flood Control Channel are located adjacent to the site.

Land Use

City of Mesa

The City of Mesa is within the Phoenix Metropolitan area and includes a planning area boundary of approximately 172 square miles. The City of Mesa is bordered by the Salt River Pima-Maricopa Indian Community and Maricopa County to the north; the Town of Gilbert and cities of Chandler and Tempe to the west; the Town of Queen Creek to the south; and the City of Apache Junction and Pinal County to the east.

The Mesa 2040 General Plan is the current planning guide for developments within the incorporated and planning area boundaries regulated by the City of Mesa. The City of Mesa's General Plan serves as the City's guide for future community development and as a tool to guide and shape physical development of the City (City of Mesa, 2014).

The primary existing land uses within the City of Mesa are designated as Agriculture, Commercial, Employment and Industrial, Open Space, Public and Semi-Public, Residential, Transportation/Communication/Utilities, and Vacant land.

The Project Site consists of a private parcel in the southeast portion of the City of Mesa located within Maricopa County. The land use categories depicted on **Figure A-3** have been produced to reflect the actual land use within the Project area based on field verification. The field verified land uses in the Project area include Agriculture, Commercial, Industrial, Office, Open Space/Parks/Retention, Public and Semi-Public, Residential, Transportation/ Communications/Utilities, and Vacant land. The land uses described below are the land uses listed within the Mesa 2040 General Plan (City of Mesa, 2014).

- Agriculture – Includes crop farming and animal raising.
- Commercial
    - *Automobile/Vehicle Sales and Services – Automobile Repair, Automobile/Vehicle Service, Large Vehicle Service, and Service Station*
    - *Banking and Financial Institutions*
    - *Commercial Recreation – Commercial Farm, Paint Ball, And Swim School*
    - *Offices – Business, Professional, and Medical*
    - *Plant Nurseries and Garden Centers*
- Employment and Industrial

  - *Airport and Aircraft Facilities*
  - *Cement Plants*
  - *General Manufacturing*
  - *Limited Manufacturing*
  - *Industrial Metal Smelting*
  - *Recycling Facilities*
  - *Warehousing and Storage – Outdoor Storage and Contractor's Yards*
- Open Space – Passive Open Space
- Public/Semi-Public
  - *Hospital*
  - *Schools*
  - *Places of Worship – Church*
- Residential
  - *Single Residence – Detached, Attached, and Accessory Dwelling Unit*
- Transportation, Communications, and Utility Use
  - *Communication Facilities – Antenna/Transmission Tower*
  - *Major Utilities – Solid Waste Transfer Station, Wellsite, Substation*
- Vacant land

Town of Gilbert

The Town of Gilbert includes a planning area boundary of approximately 72.6 square miles and is bordered by the City of Mesa to the north and east, the City of Chandler to the west, Town of Queen Creek and Phoenix-Mesa Gateway Airport to the southeast and east; the San Tan Mountain Regional Park and Gila River Indian Community to the south. Land use controls for lands within the planning area boundary are regulated by the 2012 Town of Gilbert General Plan (Town of Gilbert, 2012), the 2020 Town of Gilbert General Plan is currently in the process of being updated. The primary existing land uses within the Town of Gilbert General Plan are designated as Commercial, Employment, General Industrial, Municipal Facility/Institutional, Residential, and Vacant land.

Existing land use data were acquired for the Project area via the 2012 Town of Gilbert General Plan (Town of Gilbert, 2012) and field verified for accuracy. The land use categories depicted on **Figure A-4** have been produced to reflect the actual land use within the Project area based on field verification. The field verified land uses in the Project area include Agricultural, Commercial, Light Industrial, General Office/Business Park, Open Space/Parks/Retention, Public Facility/Institutional, Residential, Utility/Transportation, and Vacant land. The land uses described below are the land uses listed within the 2012 Town of Gilbert General Plan (Town of Gilbert 2012).

- Commercial
  - *Neighborhood Commercial*
  - *Community Commercial*
  - *Shopping Center*
  - *Village Center*
  - *General Commercial*

    - *Regional Commercial*
- Employment
    - *Neighborhood Office*
    - *General Office*
    - *Business Park*
    - *Light Industrial*
    - *General Industrial*
- Municipal Facility/Institutional
    - *Public Facility/Institutional*
    - *Parks/Retention*
    - *Utility/Transportation Corridor*
    - *Golf Course*
- Residential
    - *Very low-density single-family residential*
    - *Low-density single-family residential neighborhood development*
    - *Suburban single-family residential neighborhood development*
    - *Urban density single-family neighborhood residential*
    - *Higher density detached and attached residential*
    - *Higher density, often multifamily residential*
    - *Higher density multifamily residential*
    - *High density, multifamily residential including multi-story apartments, condominiums, townhomes, lofts and congregate care/senior living residential.*
- Vacant

Maricopa County

As depicted on **Figure A-5**, there are unincorporated lands that are administered by Maricopa County. These lands are also included within the City of Mesa planning boundary.

Land use controls for private lands within unincorporated portions of Maricopa County are regulated by the Maricopa County Comprehensive Plan, Vision 2030 (2016). Land use data were acquired for the Project area from the Maricopa County interactive Geographical Information Systems (GIS) using Maricopa County's PlanNet. The land use categories depicted on **Figure A-5** have been produced to reflect the actual land use within the Project area based on field verification. The field verified land uses in the Project area include Agricultural, Commercial, Industrial, Open Space/Parks/Retention, Public and Semi-Public, Residential, and Vacant lands. The land uses described below are the land uses listed in the Maricopa County's Comprehensive Plan (Maricopa County, 2018).

- Agriculture – Includes animal raising
- Commercial – Includes Automobile/Vehicle Sales and Services
- Employment and Industrial
    - *Industrial – Cement Plant*
    - *Warehousing and Storage – Outdoor Storage and Contractor's Yards*
    - *Wholesale*

- Public/Semi-Public
    - *Day Care Centers*
    - *Parks and Recreation Facilities – Soccer Fields*
- Residential
    - *Single Residence – Detached*
    - *Single Residence – RV Park*
- Vacant land

Zoning

City of Mesa

The City of Mesa zoning is regulated by the City of Mesa Zoning Ordinance and was last updated to include all ordinances passed and adopted as of December 31, 2018. The City of Mesa Zoning Ordinance's purpose is to implement the City of Mesa's General Plan as well as:

- provide a guide for the physical development of the City in a manner that progressively achieves the arrangement of land uses depicted in the General Plan;
- remain consistent with the goals and policies of the General Plan;
- promote combinations and mixtures of harmonious land uses;
- limit the effects of incompatible land uses; and
- do so in a manner that reduces transportation requirements, promotes livability, raises the quality of life for residents, guests, students, workers, business owners, tourists and other visitors, and supports economic development and job creation (City of Mesa 2018).

The City of Mesa is classified into Base Zones/Districts and Overlay Zones. Overlay Zones may be combined with one or more Base Zone/District. As depicted on **Figure A-6**, the zoning categories within the Project area are Agricultural, Neighborhood Commercial, Limited Commercial, Employment Opportunity, Light Industrial, General Industrial, Planned Employment Park, Public and Semi-Public, Small Lot Single-Family Residential, Single-Family Residential and Multi-Family Residential. These categories are defined in the City of Mesa Zoning Ordinance as follows:

City of Mesa Zoning Ordinance

- Agricultural
    - *This district protects agricultural lands from incompatible land uses and urban encroachment. This district encourages the use of land for local food production.*
- Single Residential
    - *This district provides areas for detached single residence housing at densities of up to 7 units per net acre.*
- Small Lot Single Residence
    - *This district provides areas for small-lot single dwelling developments at densities of up to 17 units per net acre.*
- Multiple Residence
    - *This district provides areas for a variety of housing types at densities of up to 43 units per gross acre.*

- Neighborhood Commercial
    - *This district provides areas for locally oriented retail and service uses that serve the surrounding residential trade area within a 1/2 to 2-mile radius.*
- Limited Commercial
    - *This district provides areas for indoor retail, entertainment and service-oriented businesses that serve the surrounding residential trade area within a one- to ten-mile radius.*
- Light Industrial
    - *This district provides areas for limited manufacturing and processing, wholesaling, research, warehousing, and distribution activities take place within enclosed buildings, with restricted accessory outdoor storage as needed to support the primary uses.*
- General Industrial
    - *This district provides areas for manufacturing, processing, assembly, research, wholesale, and storage, and similar activities that require separation from residential uses due to noise, vibration, use of hazardous materials, or other characteristics.*
- Planned Employment Park
    - *This district provides areas where professional and medical office parks, research and development facilities, light manufacturing, and data and information processing centers are integrated in a campus setting with ancillary restaurants, retail and other supportive establishments.*
- Employment Opportunity
    - *This district facilitates entitlements for the development of projects aligned with City Council adopted plans and policies, particularly those projects that attract industries providing significant employment opportunity, accommodates large-scale, unified and planned employment developments that encourage and promote innovative and sustainable land uses, allows flexibility that accommodates market changes while providing incentives for high quality development that is consistent with the goals of both the Mesa General Plan and any applicable sub-area plans, establishes planning and development criteria tailored to the opportunities and constraints of the property, encourages creative and high quality design, and establishes standards leading to an efficient, aesthetic, sustainable, and desirable development.*
- Public and Semi-Public
    - *This district accommodates for large-scale governmental, public utility, recreational, and educational facilities.*

The Project Site has recently been rezoned from Light Industrial and Planned Employment Park to Employment Opportunity to create the Red Hawk Employment Opportunity District. The City of Mesa approved the development agreement for the data center associated with the proposed Project. The development agreement approves the buildout of a one billion dollar, 750,000 square-foot data center (**See Exhibit H-1**).

Town of Gilbert

The Land Development Code is the current guide to zoning for the Town of Gilbert, which provides for the regulation of land and land use. The Land Development Code's purpose is to: implement the General Plan; promote and protect the public health, safety, comfort, and general welfare of the residents of the Town of Gilbert; direct growth with priority to those areas where infrastructure and urban services can be economically provided; ensure consistency and conformity among the General Plan, zoning districts and zoning ordinances; promote an efficient use of land resources; and ensure compatibility among land uses (Town of Gilbert 2019).

The Town of Gilbert is classified into Base Zoning Districts and Overlay Zoning Districts. As depicted on **Figure A-7**, the zoning categories within the Project area are Neighborhood Commercial, Community Commercial, General/Regional Commercial, Shopping Center, Light Industrial, General Office, Business Park, Public Facility/Institutional, Single-Family Residential, Multi-Family Residential – Low Density and Multi-family Residential – Medium Density. These categories are defined in the Town of Gilbert Land Development Code as follows:

Town of Gilbert Land Development Code

- Neighborhood Commercial
    - *This district permits small-scale neighborhood retail, office, and service uses under 25,000 square feet per user or stand-alone building.*
- Community Commercial
    - *This district permits small- to medium-scale retail, office, service and entertainment uses under 50,000 square feet per user or stand-alone building.*
- General/Regional Commercial
    - *This district permits a broad range of small- to large-scale retail, service, office, entertainment, and institutional uses of any size and large-scale regional retail, commercial, office, recreation and entertainment, and cultural uses.*
- Shopping Center
    - *This district permits the unified development of medium- scale retail, office, service and entertainment uses under 75,000 square feet per user or standalone building.*
- Light Industrial
    - *This district permits employment uses of moderate intensity such as assembly, light manufacturing, processing, vehicle and equipment service, research and development, general offices, storage and distribution.*
- General Office
    - *This district permits medium to large-scale, single- or multistory medical, professional, and service-type office uses.*
- Business Park
    - *This district permits integrated campus-style office development serving high technology, research and development, office, service and light industrial uses.*
- Public Facility/Institutional
    - *This district provides utilities and public and quasi-public uses such as schools, hospitals, libraries, recreation centers, golf courses, and parks.*

- Single-Family Residential
    - *This district provides a variety of single-family residential densities, establishes reasonable regulations to create and preserve livable neighborhoods and provides appropriate transitions to other residential and nonresidential uses.*
- Multi-Family Residential - Low Density
    - *This district permits multi-family housing at densities of 8-14 dwelling units per gross acre.*
- Multi-Family Residential – Medium Density
    - *This district permits multi-family housing at densities of 14-25 dwelling units per gross acre.*

The Project Site is not located within the Town of Gilbert and therefore would not require any rezoning.

Planned Land Uses

City of Mesa

The City of Mesa anticipates significant growth in the area. The Elliot Road Technology Corridor was created in 2014 to expedite the entitlements process to attract high technology industries to Mesa and to establish site planning design guidelines to ensure compliance with the City of Mesa General Plan and Mesa Gateway Strategic Development Plan. The Elliot Road Technology Corridor has approximately 1,000 acres available for development, and stretches along Elliot Road from Signal Butte Road to Hawes Road, approximately one mile from the Project Site. Projects that might have taken up to six months to go through the entitlement process can get approval in as little as a few weeks (City of Mesa, 2019). The Elliot Road Technology Corridor, as well as Arizona's data center tax-incentives, have made the location very desirable for companies to move into the area. The Elliot Road Technology Corridor currently houses companies such as Apple, Niagara Bottling, and EdgeCore.

Potential Effects

The Project Site is located on a private parcel within the City of Mesa on land that is currently vacant with an agricultural land use designation and an Employment Opportunity zoning designation. The Project Site is bordered by an existing transmission line corridor to the north, and the RWCD Canal and Maricopa County Flood Control Channel to the west. The Project Site is located one mile from the Elliot Road Technology Corridor, where the City of Mesa is encouraging companies to locate through a streamlined entitlement process and expedited development process with planned available infrastructure. Therefore, the Project Site's close proximity to the existing infrastructure and the transitioning land uses in the area are consistent with the City of Mesa's land use planning goals and strategic development plans. The Project would likely result in negligible impacts to existing and future land use plans.

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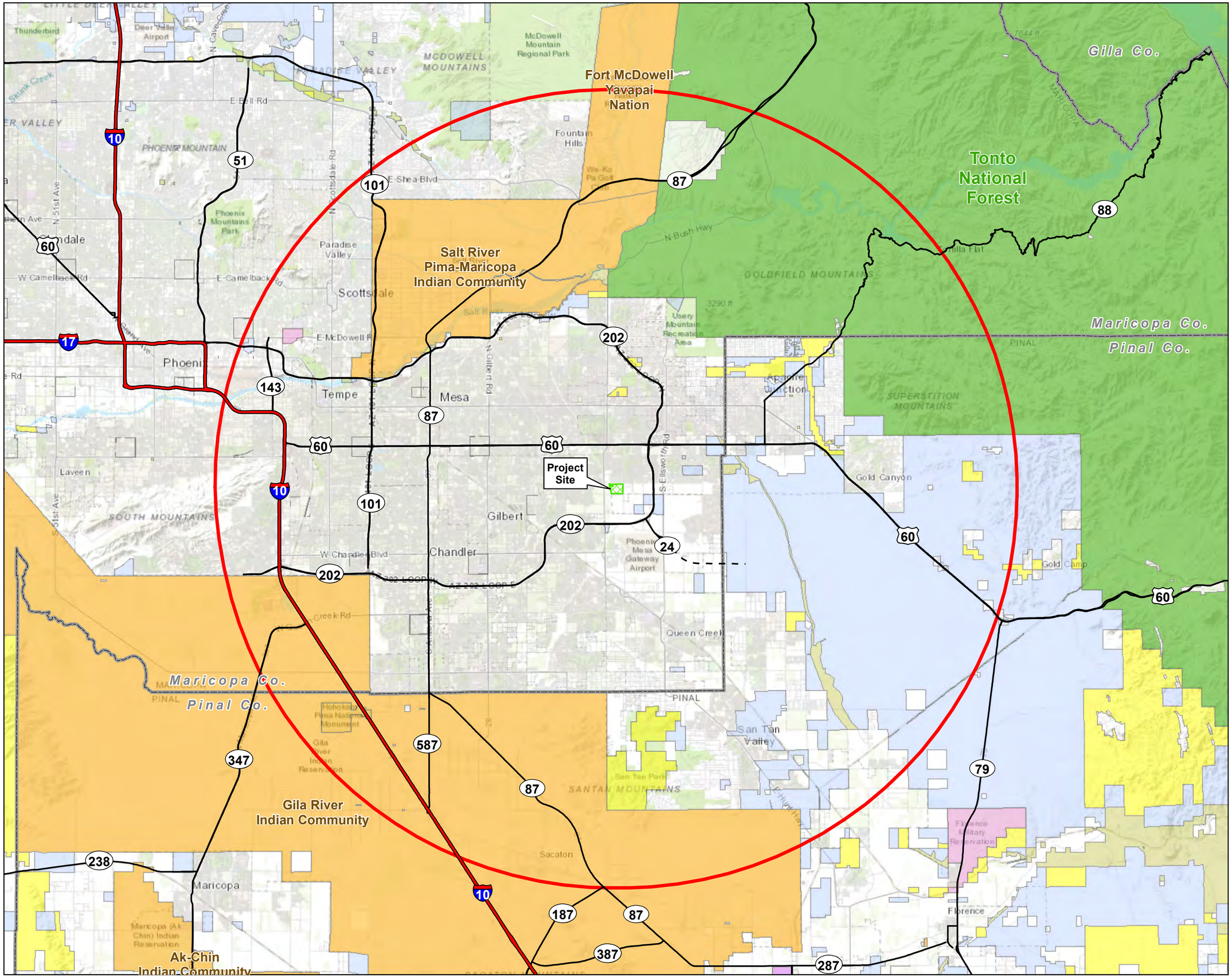
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Legend

- Interstate Highway
- US Route or State Highway
- Future State Highway 24
- County Boundary

Project Components

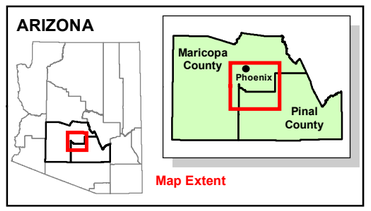
- Project Site
- 20-Mile Buffer of Project Site

Jurisdictional Land Ownership

- Bureau of Land Management Land
- US Forest Service Land
- Bureau of Reclamation Land
- Department of Defense Land
- National Park Service Land
- Tribal Land
- State Land
- Private Land (No Shading)

0 2.5 5 7.5 10
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, ESRI, Maricopa Co., Pinal Co., SRP, USGS.

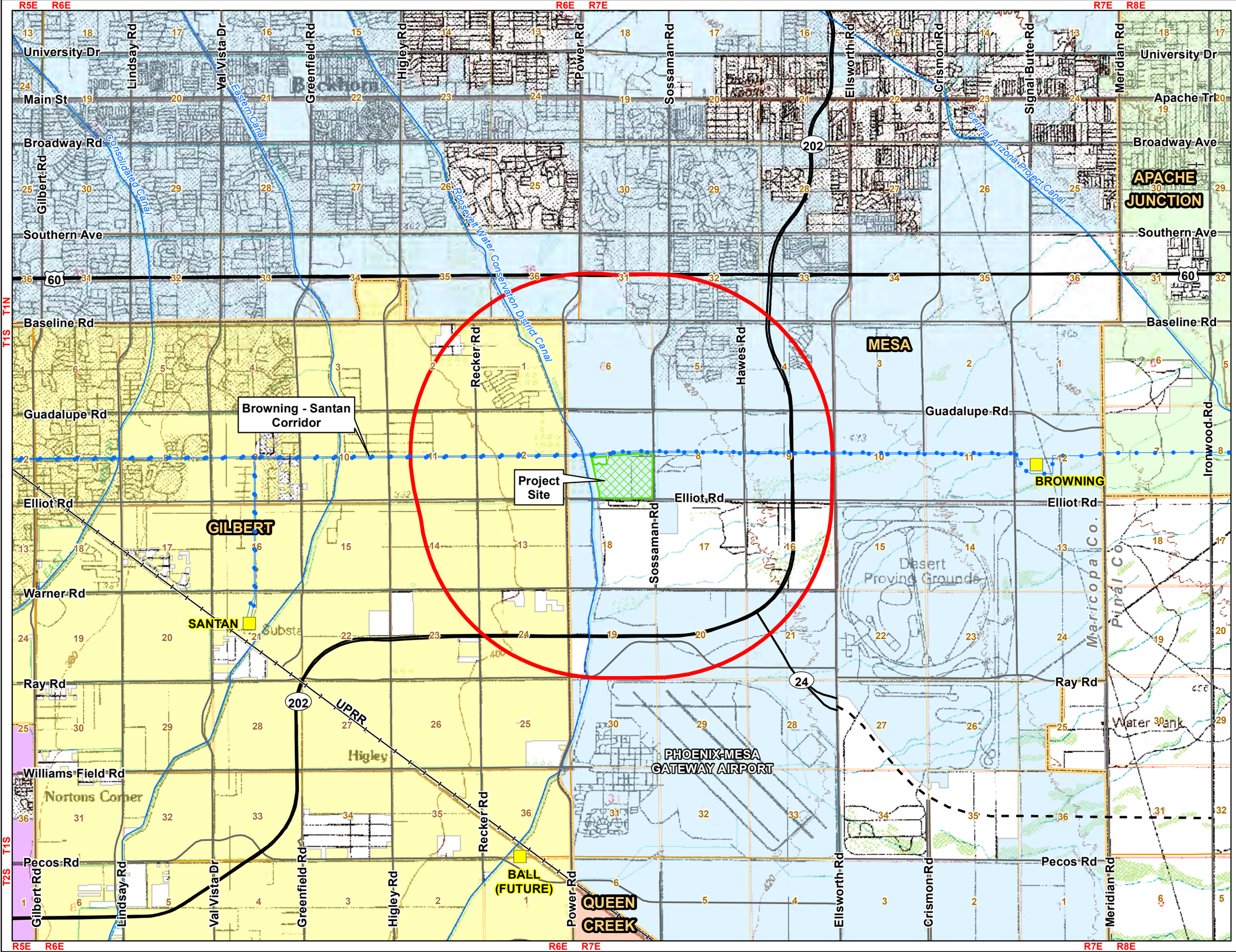


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PROJECT RED HAWK
EXHIBIT A-1 JURISDICTION

Map Extent: Maricopa & Pinal Counties, AZ

Date: 9.03.19 | Author: sjw



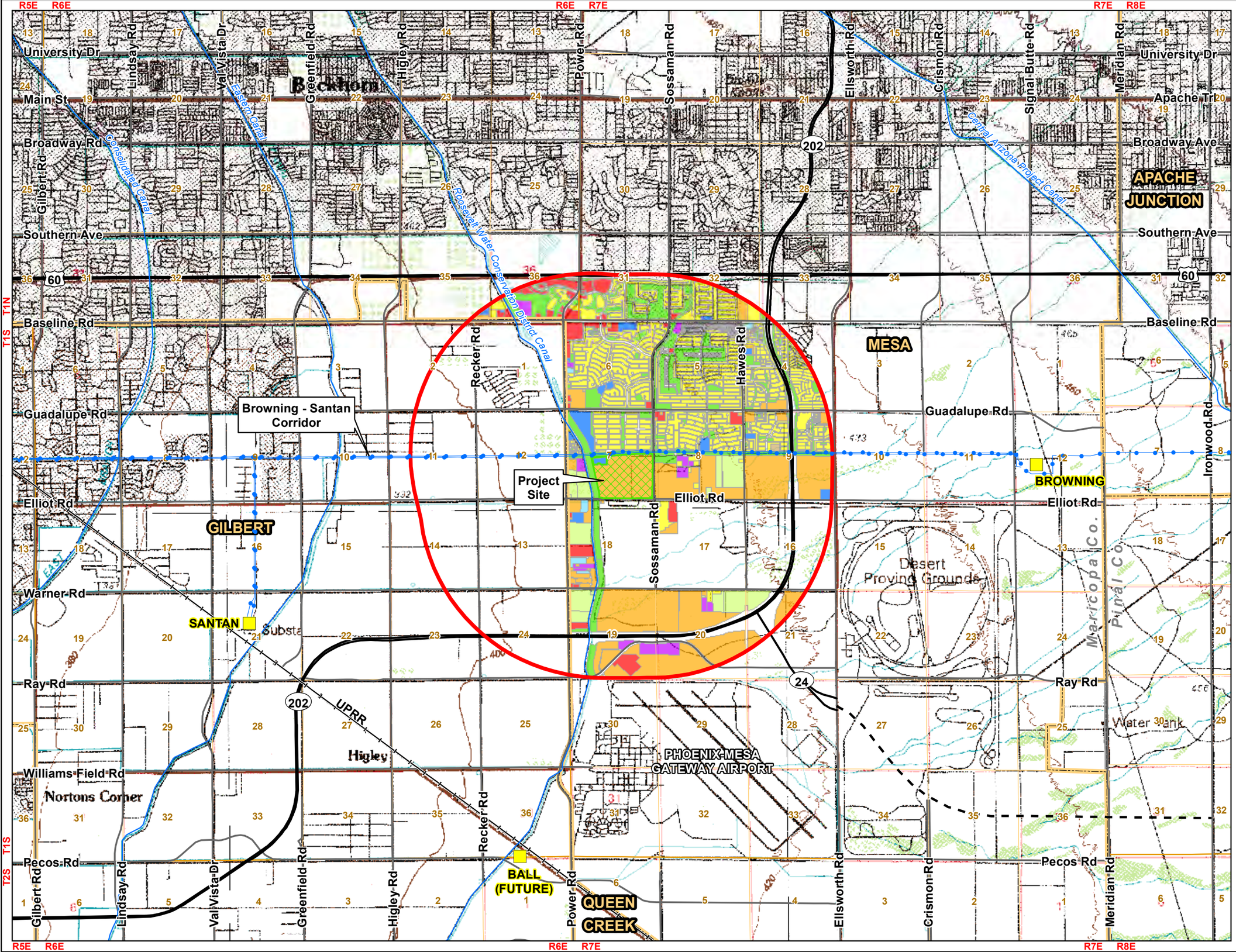
SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, Town of Queen Creek, USGS.

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PROJECT RED HAWK
EXHIBIT A-2 JURISDICTION

Map Extent: Maricopa & Pinal Counties, AZ

Date: 9.17.19		Author: sjw



Legend

- Existing / Future Substation
- Existing Transmission Lines
- US Route or State Highway
- Future State Highway 24
- Major Road
- Railroad
- Canal
- Municipal Boundary
- Township / Range Boundary
- Section Boundary

Project Components

- Project Site
- 2-Mile Buffer of Project Site

City of Mesa Land Use

- Agriculture
- Commercial
- Industrial
- Office
- Open Space / Parks / Retention
- Public and Semi-Public
- Residential
- Transportation / Communications / Utilities
- Vacant

0 0.5 1 1.5 2
Miles

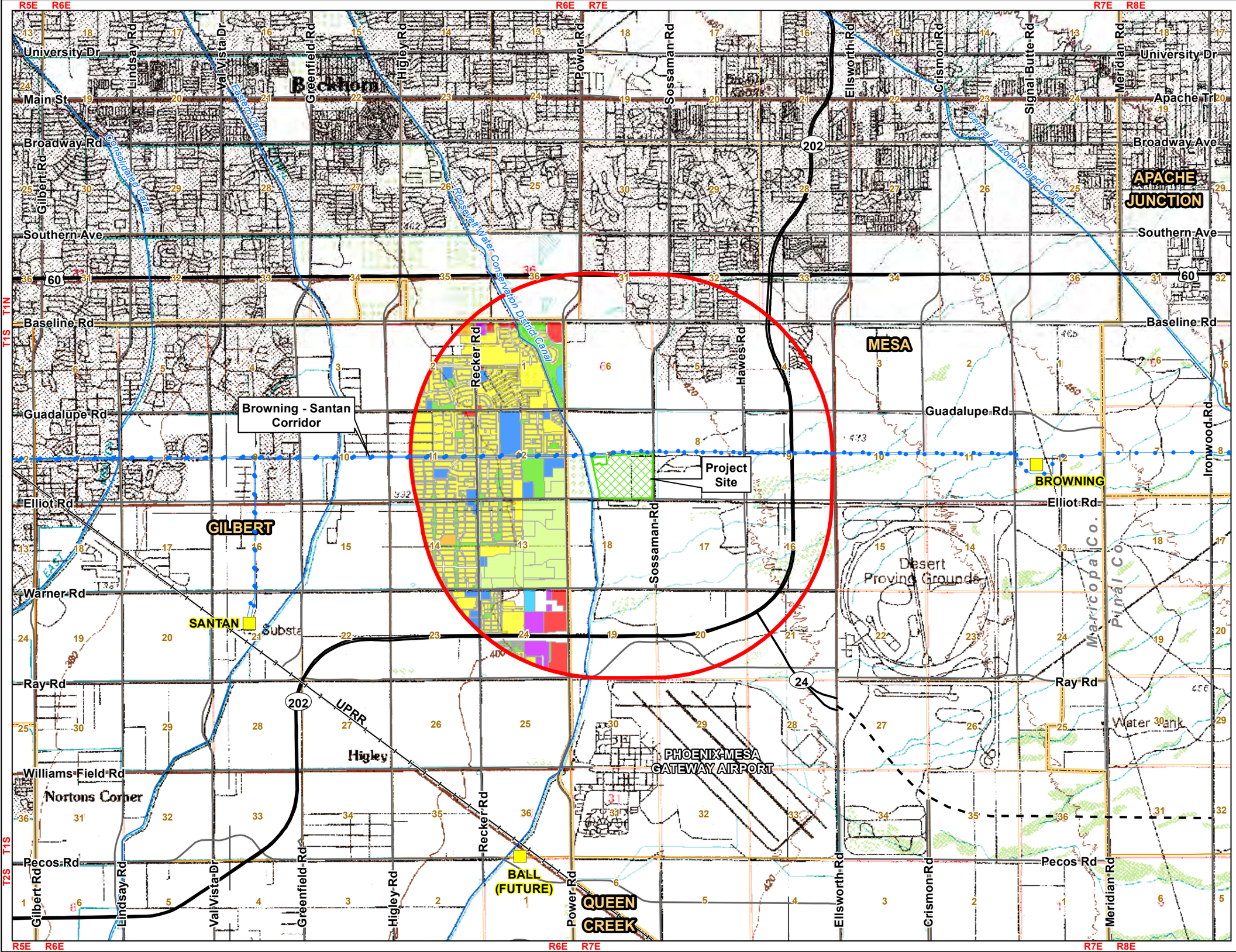
SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

SRP

PROJECT RED HAWK
EXHIBIT A-3 MESA LAND USE

Map Extent: Maricopa & Pinal Counties, AZ

Date: 9.17.19 | Author: sjw



Legend

- Existing / Future Substation
- Existing Transmission Lines
- US Route or State Highway
- Future State Highway 24
- Major Road
- Railroad
- Canal
- Municipal Boundary
- Township / Range Boundary
- Section Boundary

Project Components

- Project Site
- 2-Mile Buffer of Project Site

Town of Gilbert Land Use

- Agriculture
- Commercial
- Light Industrial
- General Office / Business Park
- Open Space / Parks / Retention
- Public Facility / Institutional
- Residential
- Utility / Transportation
- Vacant

0 0.5 1 1.5 2
Miles

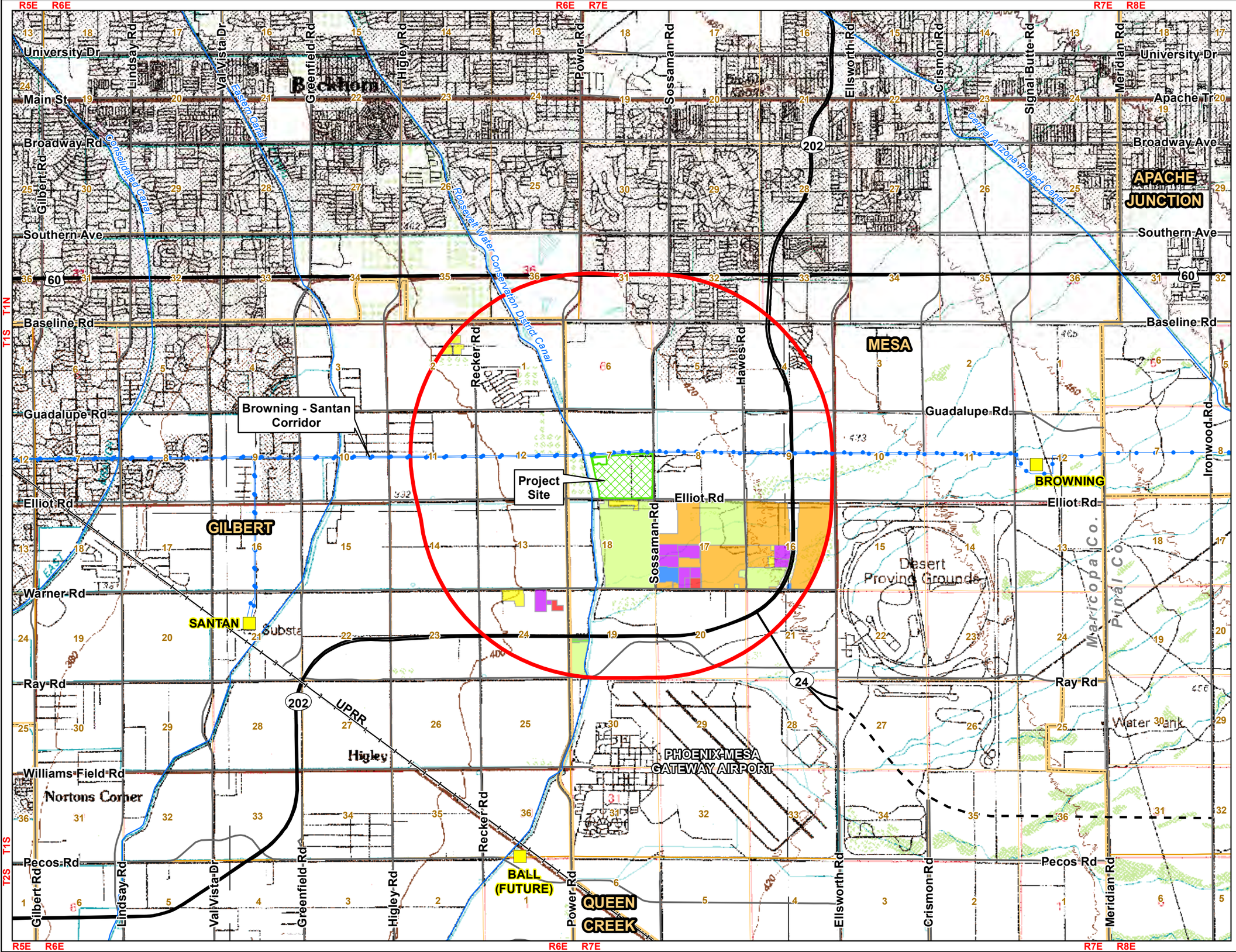
SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

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PROJECT RED HAWK
EXHIBIT A-4 GILBERT LAND USE

Map Extent: Maricopa & Pinal Counties, AZ

Date: 9.17.19 | Author: sjw



Legend

- Existing / Future Substation
- Existing Transmission Lines
- US Route or State Highway
- Future State Highway 24
- Major Road
- Railroad
- Canal
- Municipal Boundary
- Township / Range Boundary
- Section Boundary

Project Components

- Project Site
- 2-Mile Buffer of Project Site

Maricopa County Islands and State Lands Land Use

- Agriculture
- Commercial
- Industrial
- Open Space / Parks / Retention
- Public and Semi-Public
- Residential
- Vacant

0 0.5 1 1.5 2 Miles

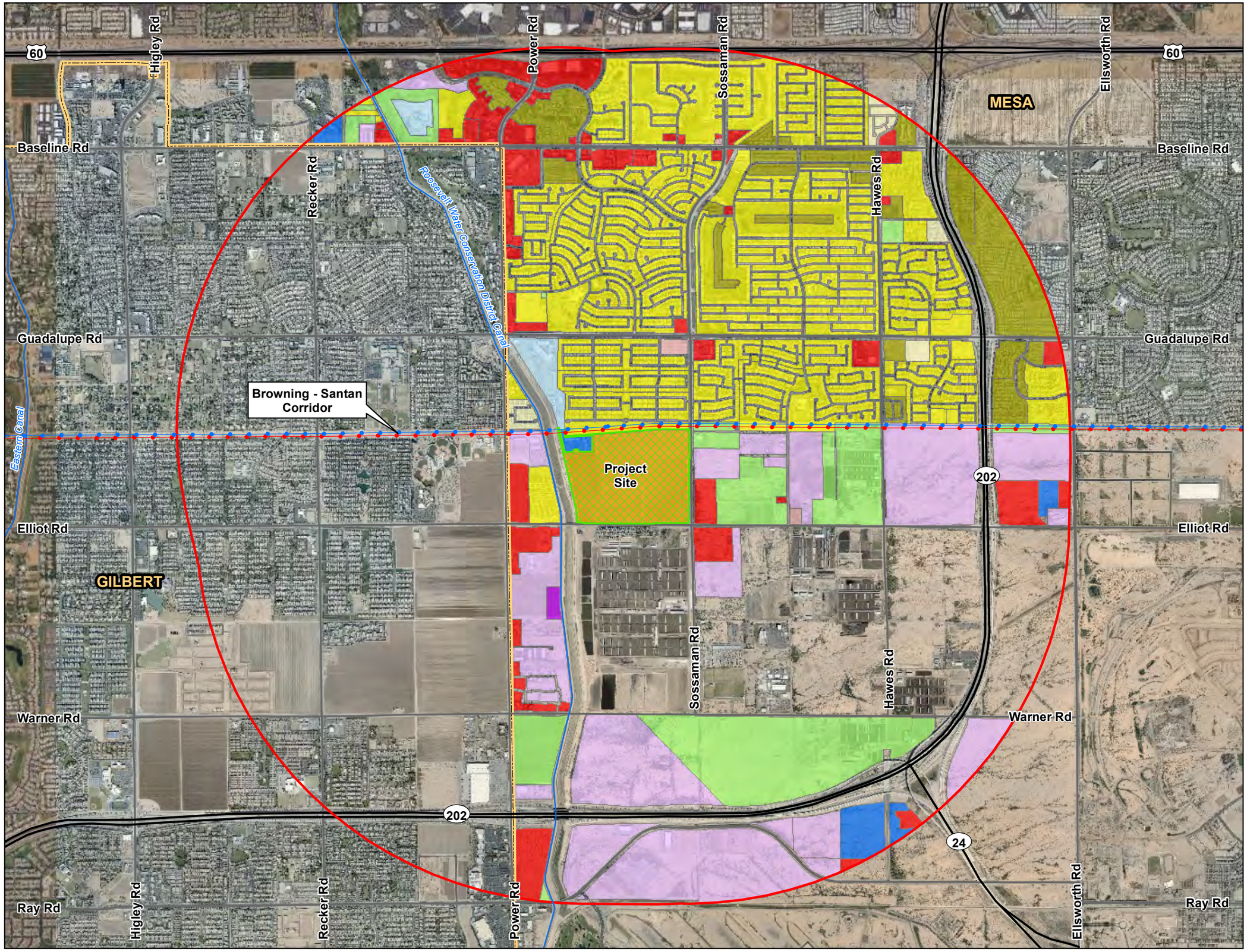
SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

SRP

PROJECT RED HAWK
EXHIBIT A-5 COUNTY & STATE LAND USE

Map Extent: Maricopa & Pinal Counties, AZ

Date: 9.17.19 | Author: sjw



Legend

- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- US Route or State Highway
- Major Road
- Canal
- Municipal Boundary

Project Components

- Project Site
- 2-Mile Buffer of Project Site

City of Mesa Zoning

- Agricultural
- Neighborhood Commercial
- Limited Commercial
- Employment Opportunity
- Light Industrial
- General Industrial
- Planned Employment Park
- Public and Semi-Public
- Small Lot Single Family Residential
- Single Family Residential
- Multi-Family Residential

0 0.25 0.5 0.75 1
Miles

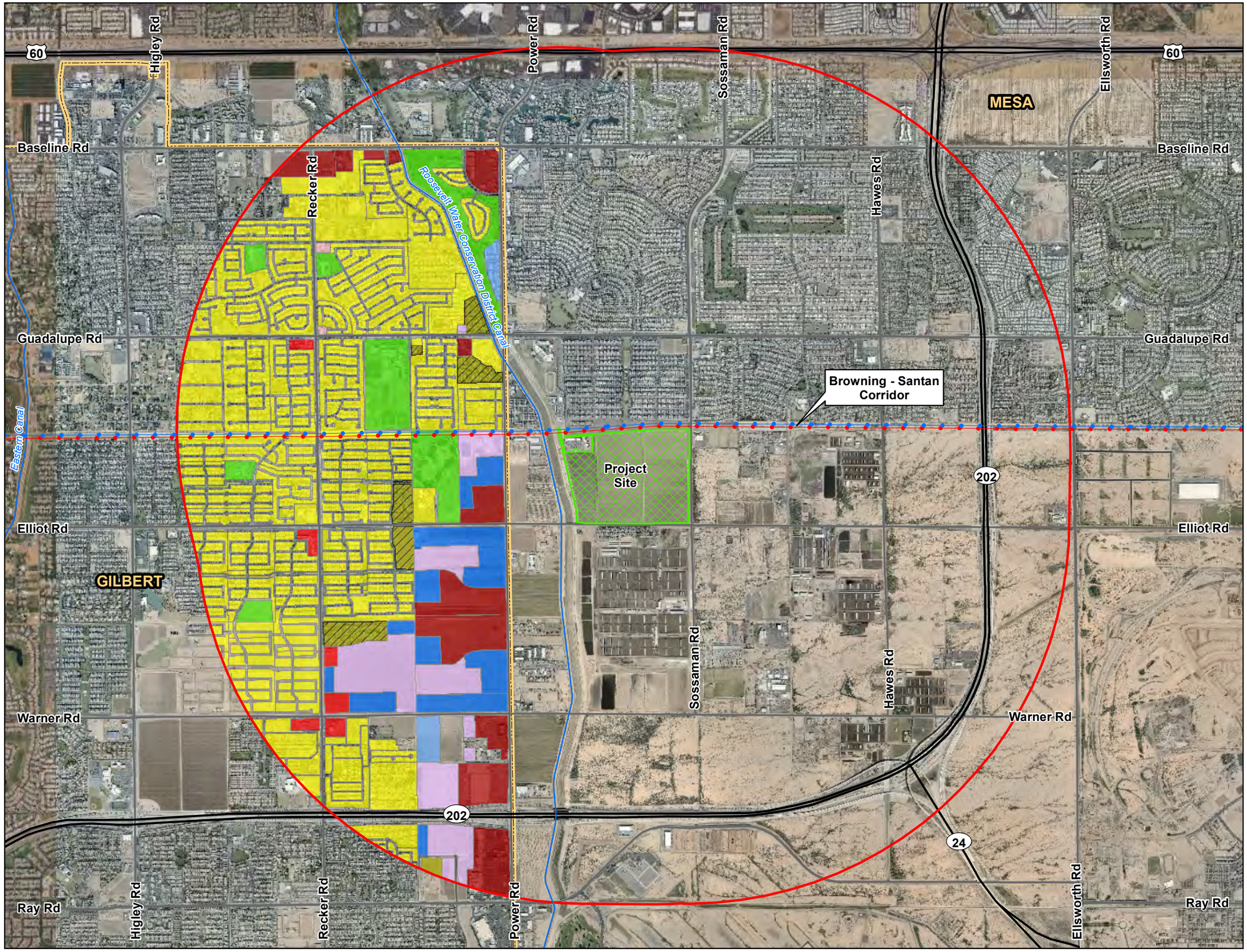
SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

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PROJECT RED HAWK
EXHIBIT A-6 MESA ZONING

Map Extent: Maricopa County, AZ

Date: 9.17.19		Author: sjw



Legend

- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- US Route or State Highway
- Major Road
- Canal
- Municipal Boundary

Project Components

- Project Site
- 2-Mile Buffer of Project Site

Town of Gilbert Zoning

- Neighborhood Commercial
- Community Commercial
- General / Regional Commercial, Shopping Center
- Light Industrial
- General Office
- Business Park
- Public Facility / Institutional
- Single Family Residential
- Multi-Family Residential - Low Density
- Multi-Family Residential - Medium Density

0 0.25 0.5 0.75 1
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

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PROJECT RED HAWK
EXHIBIT A-7 GILBERT ZONING

Map Extent: Maricopa County, AZ

Date: 9.17.19		Author: sjw

EXHIBIT B
ENVIRONMENTAL STUDIES

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.

The results of the environmental studies associated with the portions of the Project Red Hawk (Project) that are the subject of this Application, are discussed in previous and subsequent exhibits: **Exhibit A** describes land use; **Exhibit C** addresses potential impacts to sensitive biological resources on the Project Site; **Exhibit D** discusses potential impacts to other biological resources on the Project Site; **Exhibit E** summarizes the potential effects on the area's scenic quality and cultural resources; **Exhibit F** summarizes the potential effects on recreation resources; **Exhibit H** describes how the Project could affect local plans; and **Exhibit I** discusses the noise impacts that are expected.

There is no federal land or involvement associated with this Project that would require National Environmental Policy Act (NEPA) documents be developed for this Application.

EXHIBIT C
AREAS OF BIOLOGICAL WEALTH

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 effects, if any, the proposed facilities will have thereon.

Methods

The United States Fish and Wildlife Service (USFWS) and the Arizona Game and Fish Department (AGFD) were solicited for information regarding the potential occurrence of special status species for the Project Red Hawk (Project). Special status plant and wildlife species are subject to regulations under the authority of federal and state agencies. Special status species that could be associated with the Project include those species that are listed by the USFWS as federally endangered, threatened, proposed, or candidate species under the Endangered Species Act of 1973, as amended (ESA); listed as Wildlife of Special Concern by the AGFD; or protected under the Arizona Native Plant Law (NPL) [Arizona Department of Agriculture (AZDA)]. Descriptions of these special status species are summarized below:

- Endangered species, protected under the ESA, are those species in danger of extinction throughout all or a significant portion of their range.
- Threatened species, protected under the ESA, are those species likely to become endangered in the foreseeable future.
- Proposed species are those species recommended for listing by USFWS pursuant to Section 4 of the ESA.
- Candidate species are those species for which the USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but has precluded the development of a proposed listing regulation because of other higher priority listing activities. Candidate species are not protected under the ESA.
- USFWS Species of Concern is an informal term that refers to those species that the USFWS believes may be in need of concentrated conservation actions. Conservation actions, such as monitoring, vary depending on the health of the populations and degree and types of threats. USFWS Species of Concern receive no legal protection under the ESA and the use of the term does not necessarily mean that the species will eventually be proposed for listing as a threatened or endangered species.
- AGFD Species of Greatest Conservation Need (SGCN) are species determined to be vulnerable in at least one of the following eight criteria: extirpated from Arizona, federal or state status; declining status; disjunct status, demographic status; concentration status, fragmentation status; and distribution status, as described by the AGFD's listing of Wildlife of Special Concern in Arizona (WSCA, updated July 5, 2019).
- AZDA Highly Safeguarded or Salvage Restricted Native Plants identifies special status plants that are protected under the Arizona NPL and that fall into these categories: Highly Safeguarded (no collection allowed); Salvage Restricted (collection allowed only with permit); Export Restricted (transport out of State prohibited); Salvage Assessed (permits

required to remove live trees); and Harvest Restricted (permits required to remove plant by-products).

The USFWS Information for Planning and Consulting (IPaC) website was accessed and a report was generated listing proposed, candidate, threatened, and endangered species and other resources, such as critical habitat, under the USFWS's jurisdiction that could potentially occur on the Project Site (USFWS 2019a). In addition, the AGFD has published a list of special status species that could occur in each county in Arizona (AGFD 2019a) as well as a list of species occurrences for each county (AGFD 2019b). These lists were consulted to identify species that could potentially be present in the vicinity of the Project Site. An AGFD online Project Evaluation Program (PEP) search was completed for the Project as well; the PEP generated a report listing all Special Status Species, Special Areas, and Species of Greatest Conservation Need within a three mile buffer of the Project. The information provided in the PEP is used to guide preliminary decisions and assessments of proposed land development, management, and conservation projects, while incorporating fish and wildlife resource needs or features. **Table C-1** presents the special status species potentially occurring within Maricopa County (where the Project is located) listed by common name, scientific name, and status based upon the IPaC report, AGFD PEP report, and the Maricopa County species lists.

The USFWS has identified no plant species and two wildlife species (two birds) that are listed as endangered or threatened under the ESA and 16 Birds of Conservation Concern (BCC) that have the potential to occur on or within the vicinity of the Project Site. The results of the IPaC report are included in **Exhibit C-1.**

The AGFD PEP indicated that there are four special status species and 46 wildlife SGCN that are known to occur within three miles of the Project Site (17 mammals, 17 birds, 1 amphibian, and 11 reptiles). The results of the PEP search are included in **Exhibit C-1.**

The published lists of species by county from AGFD identify plant and animal species that are known to occur within Maricopa County, but are not known to occur on or in the vicinity of the Project Site (they were not identified by the IPaC or PEP). These lists indicate that 21 additional plants and 25 additional wildlife species (1 mammal, 5 birds, 12 reptiles, 5 amphibians, 2 invertebrates) may occur within Maricopa County (See **Table C-1**).

A qualified biologist researched the ecology and habitat requirements of special status species that have the potential to occur on or within the vicinity of the Project Site. The information was used to evaluate the potential effects of Project implementation on those species. Fish species that occur within Maricopa County are not anticipated to be impacted by the Project because there are no bodies of water, streams, or rivers on the Project Site (the concrete-lined Roosevelt Water Conservation Distric (RWCD) Canal exists to the west of the Project Site).

Results of Analysis

The analysis determined that overall habitat quality, plant diversity, and plant density on the Project Site are low. The Project Site has historically been used for agriculture with recent aerial photography showing the presence of row crops (imagery date 8/28/2018). As of August 2019, the

site was not being actively cultivated and the land was in a fallowed condition. Areas of disturbance associated with older agricultural use, such as dirt roads and ditches/water control structures occur around the edges of the Project Site. Vegetation is comprised of remnant row crops and weeds; native plants are limited or absent. The Project Site elevations are fairly flat and range from 1,338 to 1,357 feet. Vegetation communities found on the Project Site are described below:

Agriculture – Active

The Project Site historically has supported active agriculture, which likely has cycled between periods when fields were planted and when they were allowed to lie fallow (the current state on the Project Site). Irrigation canals and head ditches associated with the agricultural field exist along the edges, and the RWCD Canal exists immediately west of the Project Site. These lands have been used for agriculture for many years and are mostly surrounded by other agricultural lands, residential areas, and disturbed vacant parcels. Agriculture is the primary activity on the Project Site and cultivated fields cover approximately 95% (177 acres) of the Project Site.

Disturbed Urban Habitat

The Project Site currently contains disturbed urban habitat. Disturbed urban habitat only occurs on the edges of the property, primarily on the western and northern sides. This disturbed habitat appears to be associated with historical agricultural practices throughout the Project Site. Disturbed habitat is devoid of all vegetation likely due to frequent vehicle and farming equipment use. There is a very small amount of disturbed habitat on the Project Site (approximately 5% [10 acres] of the total area).

Findings

Plant Species

Threatened and Endangered

Two plant species listed as threatened or endangered under the ESA have the potential to occur within Maricopa County (AGFD 2019a, 2019b). Neither of these species have the potential to occur on the Project Site or within three miles of the Project Site (USFWS 2019a, AGFD 2019c).

Species of Concern

Six plant Species of Concern were identified that have the potential to occur within Maricopa County (AGFD 2019a, 2019b). None of these plant species have the potential to occur on the Project Site or within three miles of the Project Site (USFWS 2019a, AGFD 2019c).

Arizona Native Plant Law Species

Thirteen Arizona Native Plant Law (ANPL) Salvage Restricted or Highly Safeguarded plant species have the potential to occur within Maricopa County (AGFD 2019a, 2019b). None of these

species have the potential to occur on the Project Site or within tree miles of the Project Site (USFWS 2019a, AGFD 2019c).

Wildlife Species

Threatened and Endangered

There are six wildlife species (3 birds, 3 mammals) that are listed as endangered under the ESA and three wildlife species (1 reptile, 1 amphibian, 1 bird) that are listed as threatened under the ESA that have the potential to occur within Maricopa County (AGFD 2019a, 2019b; USFWS 2019a). Based on our site investigations, there is no suitable habitat on the Project Site for any of these wildlife species.

Wildlife Species of Concern and Birds of Conservation Concern (BCC)

There are 24 Species of Concern (8 mammals, 6 birds, 6 reptiles, 2 amphibians, and 2 invertebrates), and 19 BCCs that have the potential to occur within Maricopa County (AGFD 2019a, 2019b, USFWS 2019a). Three bird species that are listed as Species of Concern were identified as having the potential to occur on the Project Site. These species are also listed as Species of Greatest Conservation Need (SGCN) and will be discussed in the next section.

There are two BCCs that have a low potential to occur on the Project Site (Mississippi kite [*Ictinea mississippiensis*] and long-billed curlew [*Numenius americanus]*). The Mississippi kite has a very low potential to use the Project Site for foraging purposes (can nest in urban/suburban trees, no suitable trees exist on the Project Site, but occur in the vicinity); the long-billed curlew has a low potential to use the Project Site during migration periods (frequents agricultural fields during migration).

Arizona Wildlife Species of Greatest Conservation Need (SGCN)

There are 32 wildlife species that have been identified as SGCN by the state of Arizona (no other federal status) (7 mammals, 6 birds, 3 amphibians, and 16 reptiles) that have the potential to occur within Maricopa County. There is potentially suitable habitat for five SGCN wildlife species (all birds) within the Project area – the western burrowing owl *(Athene cunicularia hypugaea)* (BUOW) (USFWS Species of Concern and AGFD SGCN 1B), ferruginous hawk (*Buteo regalis*) (FEHA) (USFWS Species of Concern and AGFD SGCN 1B), American peregrine falcon (*Falco peregrinuns anatum)* (PEFA) (USFWS Species of Concern and AGFD SGCN 1A), Abert's towhee (*Melozone aberti*) (ABTO) (SGCN 1B) and savannah sparrow (*Passerculus sandwichensis*) (SAVS) (SGCN 1B).

The active agricultural and disturbed lands on the Project Site provide potential nesting and foraging habitat for BUOW and the likelihood of occurrence for this species is moderate, although it is unknown if this species currently inhabits the Project Site. BUOW are known to occupy disturbed and agricultural habitats in the vicinity of the Project Site, especially on field edges and berms with friable soils where small mammal burrows exist. The active agricultural and disturbed lands on the Project Site provide potential foraging habitat for PEFA and winter foraging habitat

for FEHA. PEFA have a low potential to nest in urban/suburban environments on buildings and transmission towers, and may use the agricultural lands on the Project Site for foraging purposes. FEHA will likely only be migrating through or wintering in the Project vicinity, and may use the agricultural areas for foraging. Both species have a low potential to occur on the Project Site, and a small amount of foraging habitat would be altered by the construction of the Project. ABTO and SAVS are known to occur within three miles of the Project Site (AGFD 2019c) and have a moderate potential to use the area for foraging, especially when the agricultural areas are active. A small amount of potential foraging habitat for ABTO and SAVS would be altered by construction of the Project.

Southwestern willow flycatcher (*Empidonax traillii extimus*) (USFWS Endangered and AGFD SGCN 1A), golden eagle (*Aquila chrysaetos*) (Species of Concern, AGFD SGCN 1B, Bald and Golden Eagle Protection Act [BGEPA], bald eagle (*Haliaeetus leucocephalus*) (Species of Concern, AGFD SGCN 1A, BGEPA), yellow-billed cuckoo (*Coccyzus americanus*) (USFWS Threatened and AGFD SGCN 1A), and California least tern (*Sterna antillarum browni*) (USFWS Endangered) have been known to occur within three miles of the Project Site (AGFD 2019c); however, no suitable nesting or foraging habitat for any of these species occurs on the Project Site.

No special status bat species are expected to occur on the Project Site due to the lack of suitable habitat.

The Project Site is not within the appropriate elevation ranges or there is no suitable habitat for the remainder of the special status species identified by the USFWS and AGFD for Maricopa County. Therefore, the potential for occurrence of these species on or within the vicinity of the Project Site is highly unlikely (**Table C-1**).

Table C-1. Special Status Species with the Potential to Occur in Maricopa County				
Species		**Protection Status[1]**		
Common name	**Scientific name**	**ESA[2]**	**Arizona SGCN[3]**	**Potential to Occur in Project Area (Justification)[4]**
Plants				
Pima Indian Mallow	*Abutilon parishii*	SC	SR	No (Habitat)
Tonto Basin Agave	*Agave delamateri*	SC	HS	No (Habitat)
Hohokam Agave	*Agave murpheyi*	SC	HS	No (Habitat)
Toumey Agave	*Agave toumeyana var. bella*	--	SR	No (Elevation)
Arizona Agave	*Agave x arizonica*	--	HS	No (Elevation)
Bigelow Onion	*Allium bigelovii*	--	SR	No (Habitat)
Yavapai Hedgehog Cactus	*Echinocereus yavapaiensis*	--	SR	No (Habitat)
Acuna Cactus	*Echinomastus erectocenturs var. acunensis*	E	HS	No (Habitat)
Johnson's Fishhook Cactus	*Echinomastus johnsonii*	--	SR	No (Habitat)
Fish Creek Fleabane	*Erigeron piscaticus*	SC	SR	No (Elevation)
Ripley Wild-buckwheat	*Eriogonum ripleyi*	SC	SR	No (Habitat)
Desert Barrel Cactus	*Ferocactus cylindraceus*	--	SR	No (Habitat)
Emory's Barrel Cactus	*Ferocactus emoryi*	--	SR	No (Habitat)
Flannel Bush	*Fremontodendron californicum*	--	SR	No (Habitat)
Varied Fishhook Cactus	*Mammillaria viridifloria*	--	SR	No (Elevation)
Straw-top Cholla	*Opuntia echinocarpa*	--	SR	No (Habitat)
Cactus Apple	*Opuntia engelmannii* var. *Flavispina*	--	SR	No (Habitat)
Roosevelt Dam Rockdaisy	*Perityle saxicola*	SC	--	No (Habitat)
Arizona Cliff Rose	*Purshia subintegra*	E	HS	No (Elevation)
Organ Pipe Cactus	*Stenocereus thurberi*	--	SR	No (Habitat)
Tumamoc Globeberry	*Tumamoca macdougalii*	--	SR	No (Habitat)
Mammals				
Harris' Antelope Squirrel	*Ammonospermophilus harrisii*	--	1B	No (Habitat)
Pale Townsend's Big-eared Bat	*Corynorhinus townsendii pallescens*	SC	1B	No (Elevation)
Spotted Bat	*Euderma maculatum*	SC	1B	No (Habitat)
Greater Western Bonneted Bat	*Eumops perotis californicus*	SC	1B	No (Habitat)
Western Red Bat	*Lasiurus blossevillii*	--	1B	No (Elevation)
Western Yellow Bat	*Lasiurus xanthinus*	--	1B	No (Habitat)
Ocelot	*Leopardus pardalis*	E	1A	No (Habitat)
Jaguar	*Panthera onca*	E	1A	No (Habitat
Lesser Long-nosed Bat	*Leptonycteris yerbabuenae*	SC	1A	No (Habitat)
Sonoran Pronghorn	*Antilocapra americana sonofriensis*	E	1A	No (Habitat)
Antelope Jackrabbit	*Lepus alleni*	--	1B	No (Habitat)

Table C-1. Special Status Species with the Potential to Occur in Maricopa County				
Species		**Protection Status[1]**		
Common name	**Scientific name**	**ESA[2]**	**Arizona SGCN[3]**	**Potential to Occur in Project Area (Justification)[4]**
California Leaf-nosed Bat	*Macrotus californicus*	SC	1B	No (Habitat)
Arizona Myotis	*Myotis occultus*	SC	1B	No (Habitat)
Cave Myotis	*Myotis velifer*	SC	1B	No (Habitat)
Yuma Myotis	*Myotis yumanensis*	SC	1B	No (Habitat)
Pocketed Free-tailed Bat	*Nyctinomops femorosaccus*	--	1B	No (Habitat)
Brazilian Free-tailed Bat	*Tadarida brasilensis*	--	1B	No (Habitat)
Kit Fox	*Vulpes macrotis*	--	1B	No (Habitat)
Birds				
Wood Duck	*Aix sponsa*	--	1B	No (Habitat)
American Bittern	*Botaurus lentiginosus*	BCC	1B	No (Habitat)
Ferruginous Hawk	*Buteo regalis*	SC	1B	Yes (Foraging)
Golden Eagle	*Aquila chrysaetos*	BCC	1B	No (Habitat)
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	T	1A	No (Habitat)
Western Burrowing Owl	*Athene cunicularia hypugaea*	SC	1B	Yes
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	E	1A	No (Habitat)
American Peregrine Falcon	*Falco peregrinuns anatum*	SC	1A	Yes (Foraging)
Bald Eagle	*Haliaeetus leucocephalus*	SC	1A	No (Habitat)
California Least Tern	*Sterna antillarum browni*	E	--	No (Habitat)
Gilded Flicker	*Colaptes chrysoides*	BCC	1B	No (Habitat)
Gila Woodpecker	*Melanerpes uropygialis*	BCC	1B	No (Habitat)
Lincoln's Sparrow	*Melospiza lincolnii*	--	1B	No (Habitat)
Abert's Towhee	*Melozone aberti*	--	1B	Yes (Foraging)
Savannah Sparrow	*Passerculus sandwichensis*	--	1B	Yes (Nesting/Foraging)
Yuma Ridgway's Rail	*Rallus obsoletus yumanensis*	E	1A	No (Habitat)
Yellow Warbler	*Setophaga petechia*	BCC	1B	No (Habitat)
LeConte's Thrasher	*Toxostoma lecontei*	BCC	1B	No (Habitat)
Pacific Wren	*Troglodytes pacificus*	--	1B	No (Habitat)
Arizona Bell's Vireo	*Vireo Bellii arizonae*	BCC	1B	No (Habitat)
Bendire's Thrasher	*Toxostoma bendirei*	BCC	--	No (Habitat)
Black-chinned Sparrow	*Spizella atrogularis*	BCC	--	No (Habitat)
Clark's Grebe	*Aechmophorous clarkii*	BCC	--	No (Habitat)
Costa's Hummingbird	*Calypte costae*	BCC	--	No (Habitat)
Elf Owl	*Micrathene whitneyi*	BCC	--	No (Habitat)

Table C-1. Special Status Species with the Potential to Occur in Maricopa County				
Species		**Protection Status[1]**		
Common name	**Scientific name**	**ESA[2]**	**Arizona SGCN[3]**	**Potential to Occur in Project Area (Justification)[4]**
Lawrence's Goldfinch	*Carduelis lawrencei*	BCC	--	No (Habitat)
Long-Billed Curlew	*Numenius americanus*	BCC	--	Low (Winter/Migration)
Marbled Godwit	*Limosa fedoa*	BCC	--	No (Habitat)
Rufous Hummingbird	*Selasphorous rufus*	BCC	--	No (Habitat)
Rufous-winged Sparrow	*Aimophila carpalis*	BCC	--	No (Habitat)
Willet	*Tringa semipalmata*	BCC	--	No (Habitat)
Swainson's Thrush	*Catharus ustulatus*	--	1B	No (Habitat)
Snowy Plover	*Charadrius nivosus*	BCC	1B	No (Habitat)
Cactus Ferruginous Pygmy Owl	*Glaucidium brasilianum*	SC	1B	No (Habitat)
Mississippi Kite	*Ictinia mississippiensis*	BCC	1B	Low (Foraging)
Reptiles				
Pai Striped Whiptail	*Aspidoscelis pai*	--	1B	No (Elevation)
Giant Spotted Whiptail	*Aspidoscelis stictogramma*	SC	1B	No (Habitat_
Red-backed Whiptail	*Aspidoscelis xanthonota*	SC	1B	No (Elevation)
Sonoran Collared Lizard	*Crotaphytus nebrius*	--	1B	No (Habitat)
Variable Sandsnake	*Chilomeniscus stramineus*	--	1B	No (Habitat)
Tucson Shovel-nosed Snake	*Chionactis occipitalis klauberi*	SC	1A	No (Habitat)
Sonoran Whipsnake	*Coluber bilineatus*	--	1B	No (Habitat)
Tiger Rattlesnake	*Crotalus tigris*	--	1B	No (Habitat)
Sonoran Desert Tortoise	*Gopherus morafkai*	--	1A	No (Habitat)
Gila Monster	*Heloderma suspectum*	--	1A	No (Habitat)
Banded Gila Monster	*Heloderma suspectum cictum*	SC	1A	No (Habitat)
Reticulate Gila Monster	*Heloderma suspectum suspectum*	--	1A	No (Habitat)
Arizona Mud Turtle	*Kinosternon arizonense*	--	1B	No (Habitat)
Rosy Boa	*Lichanura trivirgata*	SC	1B	No (Habitat)
Saddled Leaf-nosed Snake	*Phyllorhynchus browni*	--	1B	No (Habitat)
Common Chuckwalla	*Sauromalus ater*	SC	--	No (Habitat)
Northern Mexican Gartersnake	*Thamnophis eques megalops*	T	1A	No (Habitat)
Bezy's Night Lizard	*Xantusia bezyi*	--	1B	No (Elevation)
Desert Mud Turtle	*Kinosternon sonoriesnse sonoriense*	--	1B	No (Habitat)
Sonoran Coralsnake	*Micruroides euryxanthus*	--	1B	No (Habitat)
Goode's Horned Lizard	*Phrynosoma goodei*	--	1B	No (Habitat)
Regal Horned Lizard	*Phrynosoma solare*	--	1B	No (Habitat)

Table C-1. Special Status Species with the Potential to Occur in Maricopa County				
Species		**Protection Status[1]**		
Common name	**Scientific name**	**ESA[2]**	**Arizona SGCN[3]**	**Potential to Occur in Project Area (Justification)[4]**
Saddled Leaf-nosed Snake	*Phyllorhynchus browni*	--	1B	No (Habitat)
Amphibians				
Arizona Toad	*Anaxyrus microscaphus*	SC	1B	No (Habitat)
Sonoran Green Toad	*Anaxyrus retiformes*	--	1B	No (Habitat)
Chiricahua Leopard Frog	*Lithobates chiricahuensis*	T	1A	No (Habitat)
Lowland Burrowing Frog	*Smilisca fodiens*	--	1B	No (Habitat)
Sonoran Desert Toad	*Incilius alvarius*	--	1B	No (Habitat)
Lowland Leopard Frog	*Lithobates yavapaiensis*	SC	1A	No (Habitat)
Invertebrates				
Maricopa Tiger Beetle	*Cicindela oregona maricopa*	SC	--	No (Habitat)
Squaw Peak Tallussnail	*Maricopella allynsmithi*	SC	1B	No (Habitat)

[1] E=Endangered, T=Threatened, C=Candidate, EP, NE=Experimental Population, Non-Essential, SC=Species of Concern, DM= Delisted taxon, recovered, and being monitored for the first five years, WSC=Wildlife of Special Concern, SR=Salvage Restricted, HS=Highly Safeguarded, BCC=Bird of Conservation Concern only, no other FWS listing

[2] USFWS 2019a

[3] AGFD 2019a

[4] Elevation means the species does not have the potential to occur because the Project Area is not within its elevation requirements. Habitat means the Project Area is within the species elevation requirements but there is no suitable or potential habitat for the species. References are provided in the References Section.

Other Sources: ReptilesofAZ 2008, eflora 2013, Corman et al. 2005, AGFD Species Abstracts (AGFD 2019d)

Potential Effects

The following sections address the potential effects from development of the Project to special status species identified as having the potential to occur on the Project Site.

Plants

Of the 21 special status plant species having some potential to occur within Maricopa County, none have been recorded on or within three miles of the Project Site (AGFD 2019c). The Project Site either does not contain suitable habitat for these plant species or is out of their elevation range. The Project will, therefore, have no direct or indirect impacts on threatened, endangered, and state-protected plants.

Wildlife

There are no natural habitat conditions on the Project Site. Agricultural development, along with its associated roads and infrastructure, has converted and degraded areas that might have consisted of native vegetation (wildlife habitat). The construction of the Project would permanently impact a small area of agricultural and disturbed habitats. The majority of the other Project-related impacts would be temporary and short-term in nature and are discussed in more depth in the sections below.

There are no suitable habitats for federally threatened, endangered, or candidate species on the Project Site, so there would be no impacts on these species from construction of the Project.

Five special status wildlife species, BUOW, FEHA, PEFA, ABTO, and SAVS, have the potential to occur on the Project Site. There is potentially suitable BUOW habitat that exists on the Project Site, and BUOW habitat (burrows and foraging habitat) could be directly impacted by construction activities. Construction-related impacts may include the loss of foraging/nesting habitat and displacement of resident BUOW from the construction area, possible injury or death during ground-disturbing activities (active burrow removal), temporary impacts on foraging behaviors, and noise-related disturbance. A majority of the impacts would be short-term and temporary, but some permanent loss of habitat is likely to occur.

Pre-construction protocol surveys for BUOW per the *Burrowing Owl Project Clearing Guidance for Landowners* (AGFD 2009) would be conducted to ensure that any active BUOW burrows are avoided. If active burrows are found (burrows being currently used by BUOW), an appropriate avoidance buffer would be established (per AGFD guidelines) and construction would not occur within that buffer until the nest becomes inactive, or a permit would be obtained to relocate the owls. Therefore, direct impacts associated with the Project would constitute a short-term minor impact on BUOW.

The Project Site provides suitable but low-quality foraging habitat for the PEFA, FEHA, SAVS, and ABTO. This habitat could be directly impacted by construction activities. Construction-related impacts would be temporary and short-term, and may include the temporary loss of habitat and displacement of foraging birds from the construction area, temporary impacts on foraging behaviors, and noise-related disturbance.

The presence of irrigation infrastructure in the agricultural areas may attract waterfowl and shorebirds. This may increase the potential for avian / power line interactions when birds make localized movements between water features and roost sites. To minimize risk to migratory birds, any transmission lines will be constructed following industry suggested practices aimed at reducing avian collisions and electrocutions (Avian Power Line Interaction Committee [APLIC] 2006 and 2012). If avian / power line interactions become an issue, the Proponent will move quickly to evaluate and address the issue.

Conclusions

The entire Project Site has been previously disturbed and developed for agriculture, significantly reducing the overall habitat quality. Construction of the Project would occur in previously disturbed areas. The sensitive species with the potential to occur on the Project Site would not be expected to be negatively affected because habitat on the site is in a degraded condition.

References

AGFD. 2019a. Arizona Heritage Data Management System, special status species by county, taxon, scientific name (updated July 5, 2019). [Web Page] Located at http://www.azgfd.gov/w_c/edits/documents/ssspecies_bycounty_001.pdf. Accessed: August 9, 2019.

AGFD. 2019b. Arizona HDMS, element status designations by county, taxon, scientific name (updated July 5, 2019). [Web Page] Located at http://www.azgfd.gov/w_c/edits/documents/allspecies_bycounty_001.pdf. Accessed: August 9, 2019.

AGFD. 2019c. Arizona's On-line Environmental Review Tool. [Web Page] Located at http://www.azgfd.gov/hgis/. Project ID: HGIS-09584. Accessed: August 9, 2019.

AGFD 2019d. Nongame and Endangered Wildlife Program – Species Abstracts List – Multiple Species. [Web Page] Located at https://www.azgfd.com/wildlife/nongamemanagement/. Accessed: August 9, 2019.

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USFWS. 2019b. Nationwide Standard Conservation Measures. [Web Page] Located at https://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf Accessed August 9, 2019.

EXHIBIT C-1
AGENCY CORRESPONDENCE

Arizona Environmental Online Review Tool Report

Arizona Game and Fish Department Mission
To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:
Unknown

Project Description:
Unknown

Project Type:
Energy Storage/Production/Transfer, Energy Transfer, substation

Contact Person:
Scott Albrecht

Organization:
Heritage

On Behalf Of:
OTHER

Project ID:
HGIS-09584

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

Disclaimer:

1. This Environmental Review is based on the project study area that was entered. The report must be updated if the project study area, location, or the type of project changes.
2. 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. This review is also not intended to replace environmental consultation (including federal consultation under the Endangered Species Act), land use permitting, or the Departments review of site-specific projects.
3. The Departments 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. HDMS data contains information about species occurrences that have actually been reported to the Department. 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. HabiMap Arizona data, specifically Species of Greatest Conservation Need (SGCN) under our State Wildlife Action Plan (SWAP) and Species of Economic and Recreational Importance (SERI), represent potential species distribution models for the State of Arizona which are subject to ongoing change, modification and refinement. The status of a wildlife resource can change quickly, and the availability of new data will necessitate a refined assessment.

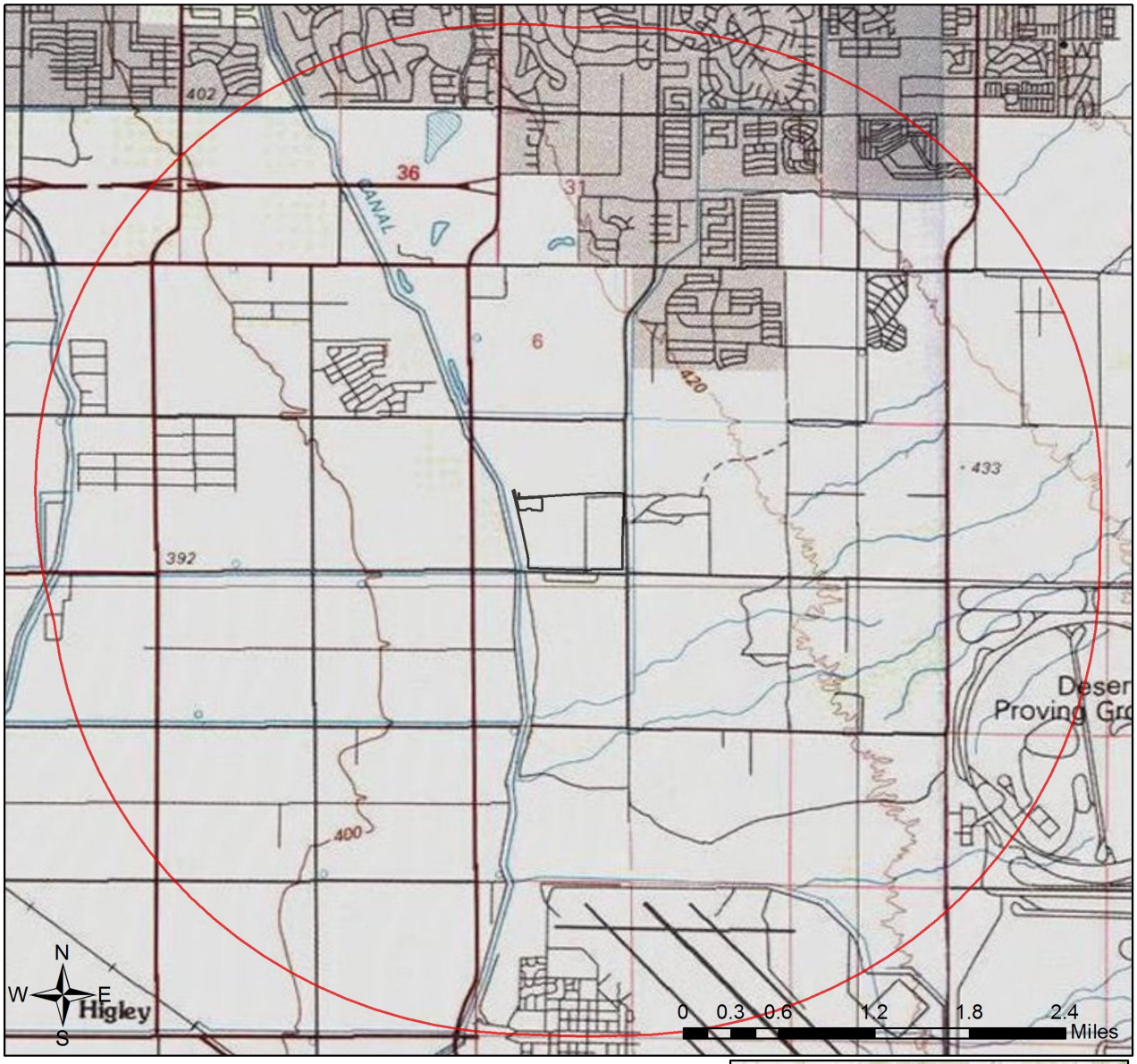
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

Recommendations Disclaimer:

1. The Department is interested in the conservation of all fish and wildlife resources, including those species listed in this report and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
2. 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).
3. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project. These recommendations are preliminary in scope, designed to provide early considerations on all species of wildlife.
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. Further coordination with the Department requires the submittal of this Environmental Review Report 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). Once AGFD had received the information, please allow 30 days for completion of project reviews. Send 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
   Or
   PEP@azgfd.gov
6. Coordination may also be necessary under the National Environmental Policy Act (NEPA) and/or Endangered Species Act (ESA). Site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies

Unknown

USA Topo Basemap With Locator Map



Project Boundary

Buffered Project Boundary

Project Size (acres): 186.37

Lat/Long (DD): 33.3541 / -111.6760

County(s): Maricopa

AGFD Region(s): Mesa

Township/Range(s): T1S, R7E

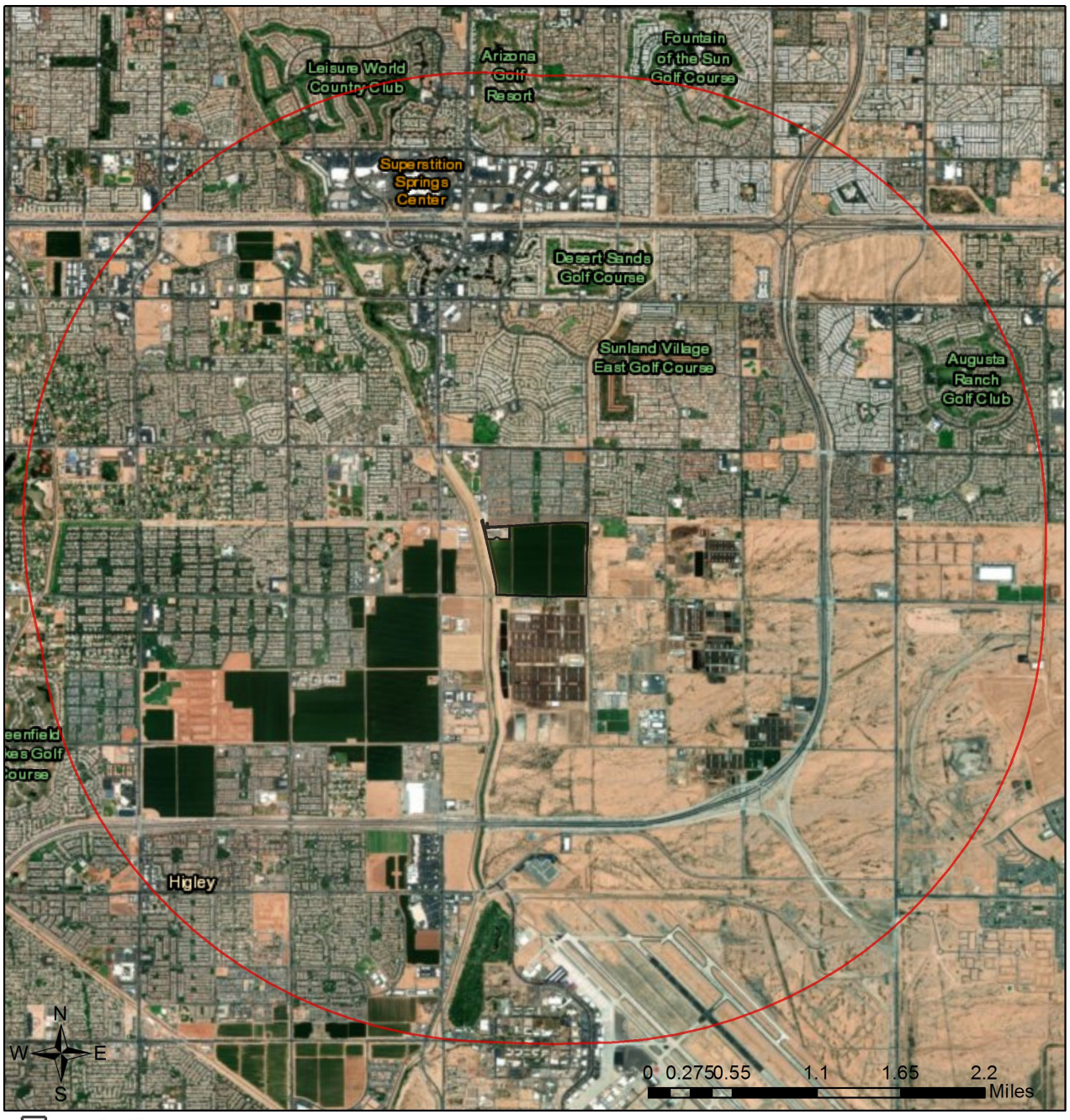
USGS Quad(s): HIGLEY



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap

Unknown

Web Map As Submitted By User



Project Boundary

Buffered Project Boundary

Project Size (acres): 186.37

Lat/Long (DD): 33.3541 / -111.6760

County(s): Maricopa

AGFD Region(s): Mesa

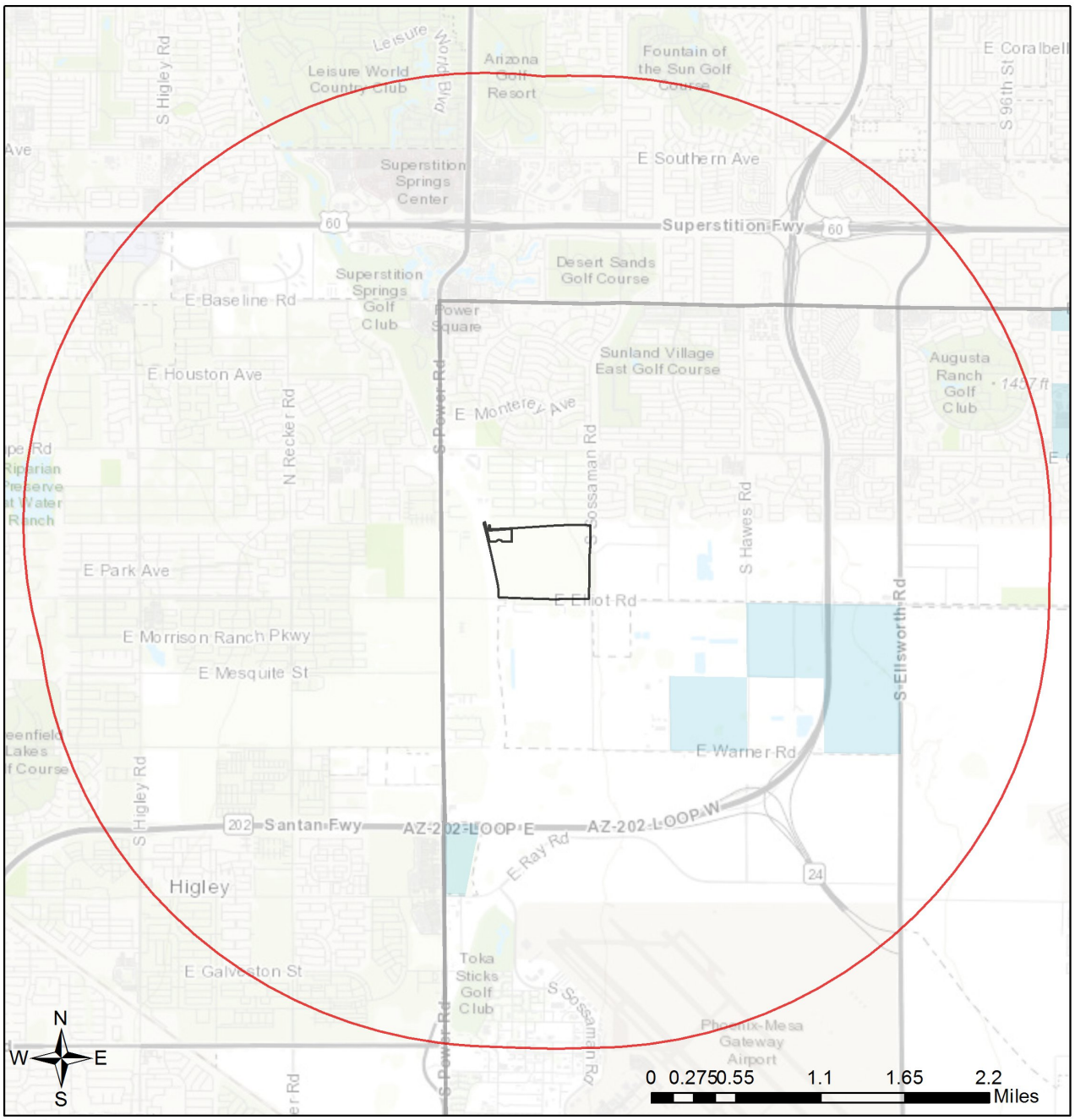
Township/Range(s): T1S, R7E

USGS Quad(s): HIGLEY

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Unknown

Topo Basemap with Township/Ranges, Land Ownership, Critical Habitats, Wildlife Corridors



- Project Boundary
- Buffered Project Boundary
- Township/Ranges
- Wildlife Corridors
- Critical Habitat

Land Ownership

- AZ Game & Fish Dept.
- BLM
- BOR
- Indian Res.
- Military
- Mixed/Other
- National Park/Mon.
- Private
- State & Regional Parks
- State Trust
- US Forest Service
- Wildlife Area/Refuge

Project Size (acres): 186.37

Lat/Long (DD): 33.3541 / -111.6760

County(s): Maricopa

AGFD Region(s): Mesa

Township/Range(s): T1S, R7E

USGS Quad(s): HIGLEY

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Special Status Species and Special Areas Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Empidonax traillii extimus	Southwestern Willow Flycatcher	LE				1A
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1A
Gilbert Riparian Preserves IBA						
Haliaeetus leucocephalus pop. 3	Bald Eagle - Sonoran Desert Population	SC, BGA	S	S		1A
Haliaeetus leucocephalus	Bald Eagle	SC, BGA	S	S		1A

Note: Status code definitions can be found at https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/
.

Species of Greatest Conservation Need
Predicted within 3 Miles of Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Aix sponsa	Wood Duck					1B
Ammospermophilus harrisii	Harris' Antelope Squirrel					1B
Aquila chrysaetos	Golden Eagle	BGA		S		1B
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Botaurus lentiginosus	American Bittern					1B
Buteo regalis	Ferruginous Hawk	SC		S		1B
Calypte costae	Costa's Hummingbird					1C
Chilomeniscus stramineus	Variable Sandsnake					1B
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC				1A
Cistothorus palustris	Marsh Wren					1C
Colaptes chrysoides	Gilded Flicker			S		1B
Coluber bilineatus	Sonoran Whipsnake					1B
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1B
Crotalus tigris	Tiger Rattlesnake					1B
Empidonax wrightii	Gray Flycatcher					1C
Euderma maculatum	Spotted Bat	SC	S	S		1B
Eumops perotis californicus	Greater Western Bonneted Bat	SC		S		1B
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1A
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1A
Haliaeetus leucocephalus	Bald Eagle	SC, BGA	S	S		1A
Heloderma suspectum	Gila Monster					1A
Incilius alvarius	Sonoran Desert Toad					1B
Kinosternon sonoriense sonoriense	Desert Mud Turtle			S		1B
Lasiurus blossevillii	Western Red Bat		S			1B
Lasiurus xanthinus	Western Yellow Bat		S			1B
Leopardus pardalis	Ocelot	LE				1A

Species of Greatest Conservation Need
Predicted within 3 Miles of Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Leptonycteris yerbabuenae	Lesser Long-nosed Bat	SC				1A
Lepus alleni	Antelope Jackrabbit					1B
Macrotus californicus	California Leaf-nosed Bat	SC		S		1B
Melanerpes uropygialis	Gila Woodpecker					1B
Melospiza lincolnii	Lincoln's Sparrow					1B
Melozone aberti	Abert's Towhee		S			1B
Micrathene whitneyi	Elf Owl					1C
Micruroides euryxanthus	Sonoran Coralsnake					1B
Myiarchus tyrannulus	Brown-crested Flycatcher					1C
Myotis occultus	Arizona Myotis	SC		S		1B
Myotis velifer	Cave Myotis	SC		S		1B
Myotis yumanensis	Yuma Myotis	SC				1B
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					1B
Oreoscoptes montanus	Sage Thrasher					1C
Oreothlypis luciae	Lucy's Warbler					1C
Panthera onca	Jaguar	LE				1A
Passerculus sandwichensis	Savannah Sparrow					1B
Phrynosoma goodei	Goode's Horned Lizard					1B
Phrynosoma solare	Regal Horned Lizard					1B
Phyllorhynchus browni	Saddled Leaf-nosed Snake					1B
Rallus obsoletus yumanensis	Yuma Ridgway's Rail	LE				1A
Setophaga petechia	Yellow Warbler					1B
Sphyrapicus nuchalis	Red-naped Sapsucker					1C
Spizella breweri	Brewer's Sparrow					1C
Tadarida brasiliensis	Brazilian Free-tailed Bat					1B
Toxostoma lecontei	LeConte's Thrasher			S		1B
Troglodytes pacificus	Pacific Wren					1B
Vireo bellii arizonae	Arizona Bell's Vireo					1B
Vulpes macrotis	Kit Fox	No Status				1B

Species of Economic and Recreation Importance Predicted within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla gambelii	Gambel's Quail					
Zenaida asiatica	White-winged Dove					
Zenaida macroura	Mourning Dove					

Project Type: Energy Storage/Production/Transfer, Energy Transfer, substation

Project Type Recommendations:
Fence recommendations will be dependant upon the goals of the fence project and the wildlife species expected to be impacted by the project. General guidelines for ensuring wildlife-friendly fences include: barbless wire on the top and bottom with the maximum fence height 42", minimum height for bottom 16". Modifications to this design may be considered for fencing anticipated to be routinely encountered by elk, bighorn sheep or pronghorn (e.g., Pronghorn fencing would require 18" minimum height on the bottom). Please refer to the Department's Fencing Guidelines located on Wildlife Friendly Guidelines page, which is part of the WIldlife Planning button at https://www.azgfd.com/wildlife/planning/wildlifeguidelines/.

Consider impacts of outdoor lighting on wildlife and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use. Use only the minimum amount of light needed for safety. Narrow spectrum bulbs should be used as often as possible to lower the range of species affected by lighting. All lighting should be shielded, canted, or cut to ensure that light reaches only areas needing illumination.

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 leaving the site. 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, https://agriculture.az.gov/. 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 https://www.azgfd.com/hunting/regulations.

Follow manufacturer's recommended application guidelines for all chemical treatments. The U.S. Fish and Wildlife Service, Region 2, Environmental Contaminants Program has a reference document that serves as their regional pesticide recommendations for protecting wildlife and fisheries resources, titled "Recommended Protection Measures for Pesticide Applications in Region 2 of the USFWS", http://www.fws.gov/southwest/es/arizona/Documents/ECReports/RPMPA_2007.pdf. The Department recommends that direct or indirect impacts to sensitive species and their forage base from the application of chemical pesticides or herbicides be considered carefully.

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.

For any powerlines built, proper design and construction of the transmission line is necessary to prevent or minimize risk of electrocution of raptors, owls, vultures, and golden or bald eagles, which are protected under state and federal laws. Limit project activities during the breeding season for birds, generally March through late August, depending on species in the local area (raptors breed in early February through May). Conduct avian surveys to determine bird species that may be utilizing the area and develop a plan to avoid disturbance during the nesting season. For underground powerlines, trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches. 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.

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

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches.

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.

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. The Endangered Species Act (ESA) gives the US Fish and Wildlife Service (USFWS) regulatory authority over all federally listed species. Please contact USFWS Ecological Services Offices at http://www.fws.gov/southwest/es/arizona/ or:

Phoenix Main Office
9828 North 31st Avenue #C3
Phoenix, AZ 85051-2517
Phone: 602-242-0210
Fax: 602-242-2513

Tucson Sub-Office
201 N. Bonita Suite 141
Tucson, AZ 85745
Phone: 520-670-6144
Fax: 520-670-6155

Flagstaff Sub-Office
SW Forest Science Complex
2500 S. Pine Knoll Dr.
Flagstaff, AZ 86001
Phone: 928-556-2157
Fax: 928-556-2121

The analysis has detected one or more **Important Bird Areas** within your project vicinity. Please see http://aziba.org/?page_id=38 for details about the Important Bird Area(s) identified in the report.

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

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Location

Maricopa County, Arizona



Local office

Arizona Ecological Services Field Office

(602) 242-0210
(602) 242-2513

9828 North 31st Ave
#c3
Phoenix, AZ 85051-2517

http://www.fws.gov/southwest/es/arizona/
http://www.fws.gov/southwest/es/EndangeredSpecies_Main.html

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

California Least Tern Sterna antillarum browni — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8104

Yellow-billed Cuckoo Coccyzus americanus — Threatened
There is **proposed** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/3911

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the

Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Bendire's Thrasher Toxostoma bendirei This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9435	Breeds Mar 15 to Jul 31
Black-chinned Sparrow Spizella atrogularis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31

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Costa's Hummingbird Calypte costae — Breeds Jan 15 to Jun 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9470

Elf Owl Micrathene whitneyi — Breeds May 1 to Jul 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9085

Gila Woodpecker Melanerpes uropygialis — Breeds Apr 1 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5960

Gilded Flicker Colaptes chrysoides — Breeds May 1 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2960

Golden Eagle Aquila chrysaetos — Breeds Dec 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

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Rufous-winged Sparrow Aimophila carpalis — Breeds Jun 15 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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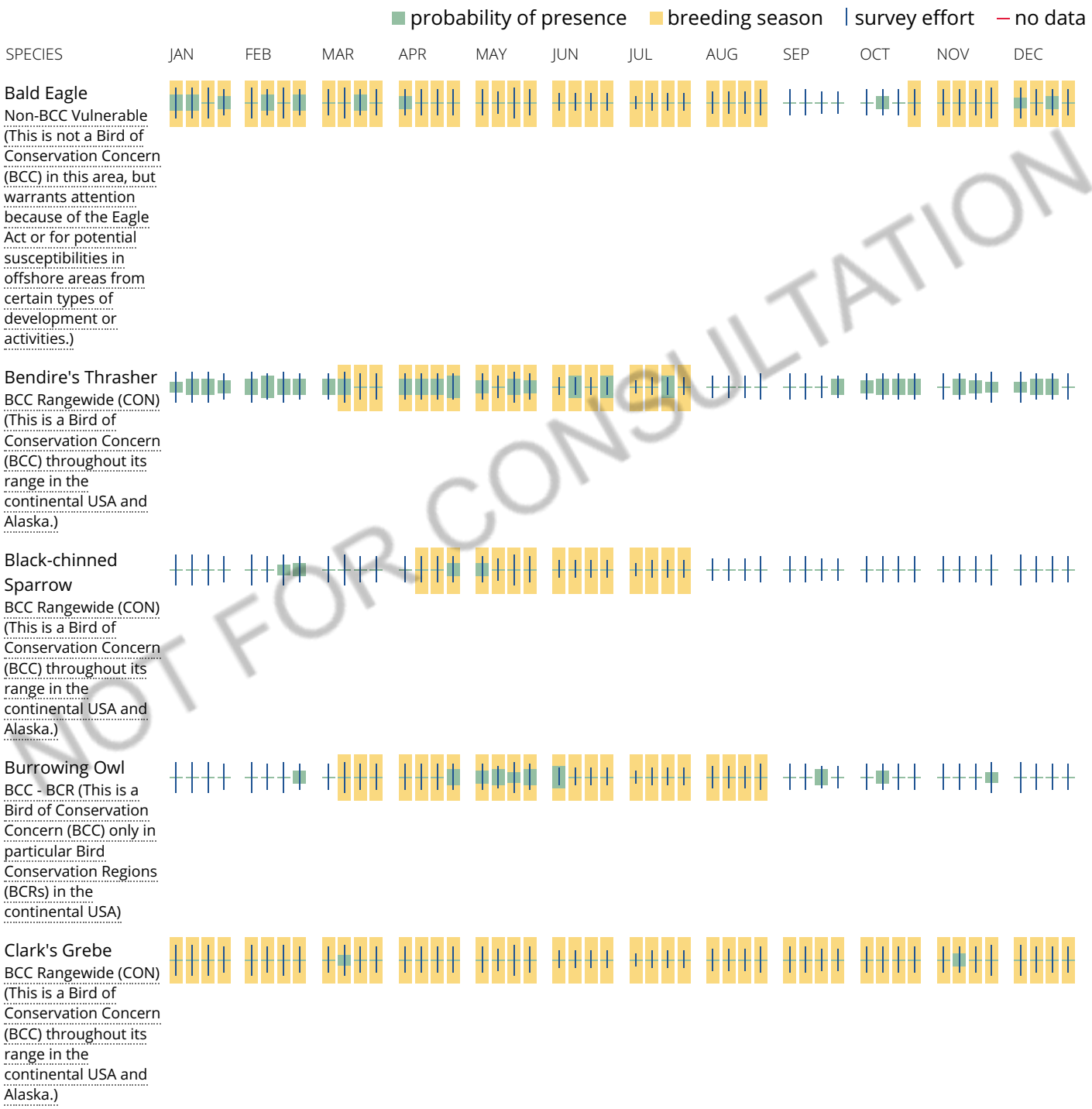
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

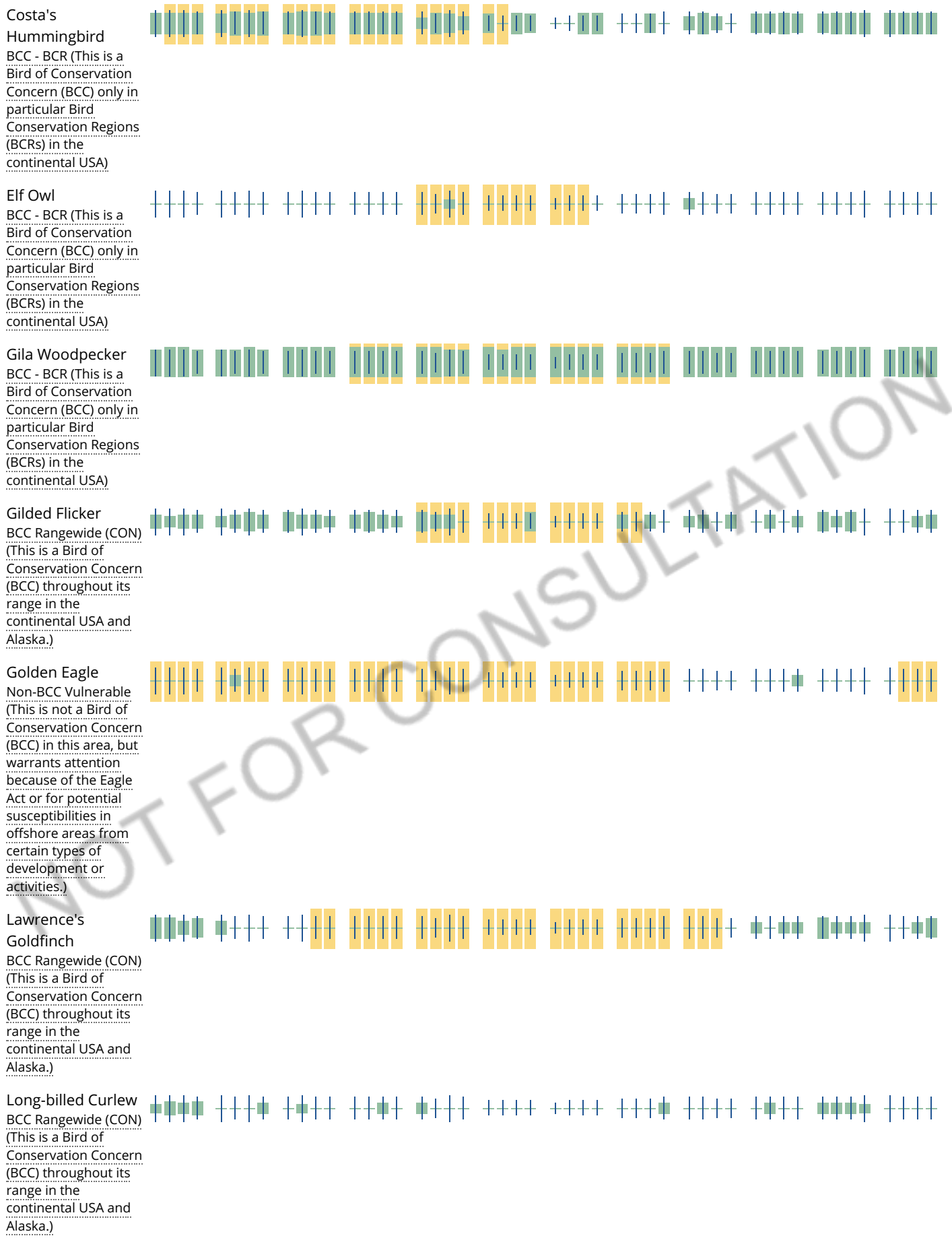
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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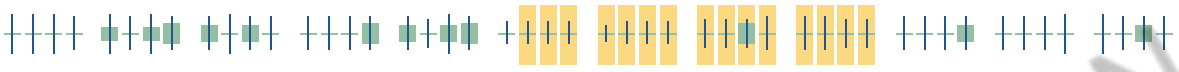
Marbled Godwit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Rufous-winged Sparrow
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



NOT FOR CONSULTATION

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

NOT FOR CONSULTATION

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

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This location overlaps the following wetlands:

RIVERINE

R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

EXHIBIT D
BIOLOGICAL RESOURCES

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.

Methods

Prior to conducting fieldwork, the ecology and habitat requirements of various species that could occur in Maricopa County were researched. A qualified biologist conducted an analysis evaluating the Project Red Hawk (Project) Site and vicinity.

The analysis determined that overall habitat quality, plant diversity, and density are very low. The Project Site consists of historic agriculture use and disturbed habitat.

Tables D-1, D-2, D-3, and **D-4** contain lists of common plant life, mammals, birds, reptiles and amphibians potentially present in Maricopa County and within the vicinity of the Project Site.

Vegetation

The Project Site is located within Maricopa County. The Project sits on approximately 187 acres of historical agricultural lands that no longer support native vegetation. Elevations range from 1,338 to 1,357 feet. Vegetation communities found on the Project Site are described below, and **Table D-1** lists some common plant species that could be found within some of the native and disturbed habitats in the vicinity of the Project Site.

Agriculture – Active

The Project Site historically has supported active agriculture, which likely has cycled between periods when fields were planted and when they were allowed to lie fallow (the current state the Project Site). Irrigation canals and head ditches associated with agricultural operations exist along the edges of the Project Site, and the Roosevelt Water Conservation District (RWCD) Canal exists immediately west of the Project Site. These lands have been used for agriculture for many years and are mostly surrounded by other agricultural lands, residential areas, and disturbed vacant patches. Plants related to fallowed agricultural fields comprise the primary vegetation community and cover approximately 95% (177 acres) of the Project Site.

Disturbed Urban Habitat

The Project Site currently contains a limited amount of disturbed urban habitat. Disturbed urban habitat appears to be associated with historical agricultural practices on the Project Site. This habitat type only occurs on the edges of the property, primarily on the western and northern sides. Disturbed habitat is devoid of all vegetation, likely due to frequent vehicle and farming equipment use. There is a very small amount of disturbed urban habitat on the Project Site (approximately 5% [10 acres] of the total area).

Table D-1.
Common Plant Species
Potential Occurrence in Isolated Disturbed / Native Habitats in the Vicinity of the Project Site[1]

Common Name	Scientific Name	Ecosystem
Triangleleaf bursage	*Ambrosia deltoidea*	Sonoran Desertscrub, Sonoran Riparian
White bursage	*Ambrosia dumosa*	Sonoran Desertscrub
Fiddlehead	*Amsinckia intermedia*	Sonoran Riparian
Purple three-awn	*Aristida purpurea*	Sonoran Desertscrub
Four-wing saltbush	*Atriplex canescens*	Sonoran Desertscrub
All scale	*Atriplex polycarpa*	Sonoran Desertscrub
Datura	*Datura stramonium*	Sonoran Riparian
Englemann's hedgehog cactus	*Echinocereus englemannii*	Sonoran Desertscrub
Brittlebush	*Encelia farinosa*	Sonoran Desertscrub, Sonoran Riparian
Skeletonweed	*Eriogonum deflexum*	Sonoran Desertscrub
Filaree	*Erodium cicutarium*	Sonoran Desertscrub
Barrel cactus	*Ferocactus wislizenii*	Sonoran Desertscrub
Ocotillo	*Fouquieria splendens*	Sonoran Desertscrub
Rhatany	*Krameria parviflora*	Sonoran Desertscrub, Sonoran Riparian
Creosote bush	*Larrea tridentata*	Sonoran Desertscrub, Sonoran Riparian
Wolfberry	*Lycium spp.*	Sonoran Desertscrub, Sonoran Riparian
Little fishhook cactus	*Mammillaria thornberi*	Sonoran Desertscrub
Teddybear cholla	*Opuntia bigelovii*	Sonoran Desertscrub
Prickly pear cactus	*Opuntia engelmannii*	Sonoran Desertscrub
Jumping cholla	*Opuntia fulgida*	Sonoran Desertscrub
Desert mistletoe	*Phoradendron californicum*	Sonoran Desertscrub
Galleta grass	*Pleuraphis jamesii*	Sonoran Desertscrub, Sonoran Riparian
Mesquite	*Prosopis spp.*	Sonoran Riparian
Bladdersage	*Salazaria Mexicana*	Sonoran Desertscrub
Russian thistle	*Salsola iberica*	Sonoran Desertscrub, Sonoran Riparian
London rocket	*Sisymbrium irio*	Sonoran Desertscrub, Sonoran Riparian
Globe mallow	*Sphaeralcea spp.*	Sonoran Desertscrub, Sonoran Riparian

[1] Brown 1994

Wildlife

Wildlife resources in the Project area are predominantly associated with agricultural land, residential areas, disturbed habitat, and to a lesser extent, native habitats. Species occurrence, abundance, and distribution are strongly influenced by the presence of surface water, topography, and habitat types within and surrounding the Project Site.

Tables D-2, D-3, and **D-4** present lists of common mammals, birds, reptiles, and amphibians that may occur or that have been observed within Maricopa County in habitats similar to those on the Project Site and its immediate vicinity. Some of the species are also listed in **Exhibit C** as Wildlife of Concern.

Mammals

Most mammalian species likely to be present are small, inconspicuous, largely nocturnal species of rodents and bats. Desert-adapted rodents such as pocket mice (*Perognathus sp.*) and kangaroo rats (*Dipodomys sp.*) could be present within and on the peripheries of the Project Site. Medium-sized mammals that could be found on the Project Site include desert cottontail (*Sylvilagus auduboni*), black-tailed jackrabbits (*Lepus californicus*), coyote (*Canis latrans*), gray fox (*Vulpes macrotis*), and American badger (*Taxidae taxus*). Bats may use the Project Site for foraging purposes and may roost in the vicinity of the Project area in buildings, under bridges, and in trees. **Table D-2** presents a more comprehensive list of mammalian species that may occur in the area.

Migratory Birds

Most bird species likely to be present are considered migratory birds and are associated with agricultural and urbanized land uses. The majority of the birds present during any given season are small songbirds and raptors like the mourning dove (*Zenaida macroura*) and red-tailed hawk (*Buteo jamaicensis*) (**Table D-3**). Some water birds may also be present in the area because they are attracted to the canals and ditches (such as the RWCD Canal immediately west) that exist near the Project Site.

Amphibians and Reptiles

Relatively undisturbed desert habitats represent the best habitat for reptiles, although some species could be found in agricultural or other disturbed areas. Water resources are very limited in the area, and reptiles and amphibians are not expected to be heavily encountered. **Table D-4** presents a list of amphibian and reptilian species that could be present in the vicinity of the Project Site.

Table D-2. Mammal Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Harris' antelope squirrel	*Ammospermophilus harrisii*
Pallid bat	*Antrozous pallidus*
Ringtail	*Bassariscus astutus*
Coyote	*Canis latrans*
Mexican long-tongued bat	*Choeronycteris mexicana*
Desert kangaroo rat	*Dipodomys deserti*
Merriam's kangaroo rat	*Dipodomys merriami*
Big brown bat	*Eptesicus fuscus*
Spotted bat	*Euderma maculatum*
Western mastiff bat	*Eumops perotis*
Mountain lion	*Felis concolor*
Bobcat	*Felis rufus*
Red bat	*Lasiurus borealis*
Hoary bat	*Lasiurus cinereus*
Southern yellow bat	*Lasiurus ega xanthinus*
Mexican long-nosed bat	*Leptonycteris nivalis*
Black-tailed jackrabbit	*Lepus californicus*
Hooded skunk	*Mephitis macroura*
Striped skunk	*Mephitis*
California myotis	*Myotis californicus*
Fringed myotis	*Myotis thysanodes*
Cave myotis	*Myotis velifer*
Yuma myotis	*Myotis yumanensis*
White-throated woodrat	*Neotoma albigula*
Desert wood rat	*Neotoma lepida*
Desert shrew	*Notiosorex crawfordi*
Desert Mule deer	*Odocoileus hemionus crooki*
Muskrat	*Ondatra zibethicus*
Southern grasshopper mouse	*Onychomys torridus*
Collared peccary	*Pecari tajacu*
Arizona pocket mouse	*Perognathus amplus*
Bailey's pocket mouse	*Perognathus baileyi*
Long-tailed pocket mouse	*Perognathus formosus*
Rock pocket mouse	*Perognathus intermedius*
Little pocket gopher	*Perognathus longimembris*
Desert pocket mouse	*Perognathus penicillatus*
Brush mouse	*Peromyscus boylii*
Cactus mouse	*Peromyscus eremicus*

Table D-2 Mammal Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Deer mouse	*Peromyscus maniculatus*
Western pipistrelle	*Pipistrellus Hesperus*
Townsend's big-eared bat	*Plecotus townsendii*
Raccoon	*Procyon lotor*
Western harvest mouse	*Reithrodontomys megalotis*
Arizona gray squirrel	*Sciurus arizonensis*
Arizona cotton rat	*Sigmodon arizonae*
Round-tailed ground squirrel	*Spermophilus tereticaudus*
Rock squirrel	*Spermophilus variegatus*
Western spotted skunk	*Spilogale gracilis*
Desert cottontail	*Sylvilagus audubonii*
American free-tailed bat	*Tadarida brasiliensis*
Pocketed free-tailed bat	*Tadarida femorosacca*
Big free-tailed bat	*Tadarida macrotis*
Badger	*Taxidae taxus*
Botta's pocket gopher	*Thomomys bottae*
Gray fox	*Urocyon cinereoargenteus*
Kit fox	*Vulpes macrotis*
[1] D.F. Hoffmeister. 1986. Mammals of Arizona. University of Arizona Press	

Table D-3 Bird Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Cooper's hawk	*Accipiter cooperii*
Sharp-shinned hawk	*Accipiter striatus*
Red-winged blackbird	*Agelaius phoeniceus*
Sage sparrow	*Amphispiza belli*
Black-throated sparrow	*Amphispiza bilineata*
Cinnamon teal	*Anas cyanoptera*
Mallard	*Anas platyrhynchos*
Black-chinned hummingbird	*Archilochus alexandri*
Great egret	*Ardea alba*
Great blue heron	*Ardea herodias*
Verdin	*Auriparus flaviceps*
Cedar waxwing	*Bombycilla cedrorum*
Great horned owl	*Bubo virginianus*
Cattle egret	*Bubulcus ibis*

Table D-3 Bird Species Potential Occurrence in the Vicinity of the Project Site[1]	
Zone-tailed hawk	*Buteo albonotatus*
Red-tailed hawk	*Buteo jamaicensis*
Ferruginous hawk	*Buteo regalis*
Swainson's hawk	*Buteo swainsoni*
Green heron	*Butorides virescens*
Lark bunting	*Calamospiza melanocorys*
Gambel's quail	*Callipepla gambelii*
Anna's hummingbird	*Calypte anna*
Costa's hummingbird	*Calypte costae*
Cactus wren	*Campylorhynchus brunneicapillus*
Northern cardinal	*Cardinalis cardinalis*
Pyrrhuloxia	*Cardinalis sinuatus*
Lesser goldfinch	*Carduelis psaltria*
House finch	*Carpodacus mexicanus*
Turkey vulture	*Cathartes aura*
Killdeer	*Charadrius vociferus*
Lark sparrow	*Chondestes grammacus*
Lesser nighthawk	*Chordeiles acutipennis*
Northern harrier	*Circus cyaneus*
Red-shafted northern flicker	*Colaptes cafer*
Gilded flicker	*Colaptes chrysoides*
Rock dove	*Columba livia*
Inca dove	*Columbina inca*
Common ground-dove	*Columbina passerine*
Western wood-pewee	*Contopus sordidulus*
Common raven	*Corvus corax*
Yellow-rumped warbler	*Dendroica coronata*
Black-throated gray warbler	*Dendroica nigrescens*
Yellow warbler	*Dendroica petechia*
Snowy egret	*Egretta thula*
Pacific-slope flycatcher	*Empidonax difficilis*
Dusky flycatcher	*Empidonax oberholster*
Cordilleran flycatcher	*Empidonax occidentalis*
Gray flycatcher	*Empidonax wrightii*
Horned lark	*Eremophila alpestris*
Brewer's blackbird	*Euphagus cyanocephalus*
American kestrel	*Falco sparverius*
American coot	*Fulica americana*
Common moorhen	*Gallinula chloropus*
Greater roadrunner	*Geococcyx californianus*

Table D-3 Bird Species Potential Occurrence in the Vicinity of the Project Site[1]	
Blue grosbeak	*Guiraca carulea*
Cliff swallow	*Hirundo pyrrhonota*
Barn swallow	*Hirundo rustica*
Northern oriole	*Icterus bullockii*
Hooded oriole	*Icterus cucullatus*
Bullock's oriole	*Icterus galbula*
Dark-eyed junco	*Junco hyemalis*
Loggerhead shrike	*Lanius ludovicianus*
Gila woodpecker	*Melanerpes uropygialis*
Lincoln's sparrow	*Melospiza lincolnii*
Song sparrow	*Melospiza melodia*
Elf owl	*Micrathene whitneyi*
Northern mockingbird	*Mimus polyglottos*
Bronzed cowbird	*Molothrus aeneus*
Brown-headed cowbird	*Molothrus ater*
Ash-throated flycatcher	*Myiarchus cinerascens*
Brown-crested flycatcher	*Myiarchus tyrannulus*
Black-crowned night-heron	*Nycticorax*
MacGillivary's warbler	*Oporornis tolmiei*
Sage thrasher	*Oreoscoptes montanus*
Western screech owl	*Otus kennicottii*
Harris' hawk	*Parabuteo unicinctus*
House sparrow	*Passer domesticus*
Phainopepla	*Phainopepla nitens*
Double-crested cormorant	*Phalacrocorax auritus*
Neotropical Cormorant	*Phalacrocorax brasilianus*
Common poorwill	*Phalaenoptilus nuttallii*
Black-headed grosbeak	*Pheucticus melanocephalus*
Ladder-backed woodpecker	*Picoides scalaris*
Abert's towhee	*Pipilo aberti*
Green-tailed towhee	*Pipilo chlorurus*
Spotted towhee	*Pipilo erythrophthalmus*
Canyon towhee	*Pipilo fuscus*
Western tanager	*Piranga ludoviciana*
Pied-billed grebe	*Podilymbus podiceps*
Blue-gray gnatcatcher	*Polioptila caerulea*
Black-tailed gnatcatcher	*Polioptila melanura*
Vesper sparrow	*Pooecetes gramineus*
Vermillion flycatcher	*Pyrocephalus rubinus*
Great-tailed grackle	*Quiscalus mexicanus*

Ruby-crowned kinglet	*Regulus calendula*
Rock wren	*Salpinctes obsoletus*
Black phoebe	*Sayornis nigricans*
Say's phoebe	*Sayornis saya*
Rufus hummingbird	*Selasphorus rufus*
Western bluebird	*Sialia mexicana*
Brewer's sparrow	*Spizella breweri*
Chipping sparrow	*Spizella passerine*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Western meadowlark	*Sturnella neglecta*
European starling	*Sturnus vulgaris*
Tree swallow	*Tachycineta bicolor*
Violet-green swallow	*Tachycineta thalassina*
Bewick's wren	*Thryomanes bewickii*
Bendire's thrasher	*Toxostoma bendirei*
Curve-billed thrasher	*Toxostoma curvirostre*
House wren	*Troglodytes aedon*
American robin	*Turdus migratorius*
Western kingbird	*Tyrannus verticalis*
Barn owl	*Tyto alba*
Orange-crowned warbler	*Vermivora celata*
Lucy's warbler	*Vermivora luciae*
Nashville warbler	*Vermivora ruficapilla*
Virginia's warbler	*Vermivora virginiae*
Bell's vireo	*Vireo bellii*
Warbling vireo	*Vireo gilvus*
Wilson's warbler	*Wilsonia pusilla*
White-winged dove	*Zenaida asiatica*
Mourning dove	*Zenaida macroura*
White-crowned sparrow	*Zonotrichia leucophrys*
[1] Corman and Wise-Gervais 2005	

Table D-4 Reptile and Amphibian Species Potential Occurrence in the Vicinity of the Project Site[1]	
Common Name	**Scientific Name**
Arizona glossy snake	*Arizona elegans noctivaga*
Sonoran desert toad	*Bufo alvarius*
Great plains toad	*Bufo cognatus*
Red-spotted toad	*Bufo punctatus*
Zebra tail lizard	*Callisaurus draconoides*
Banded sand snake	*Chilomeniscus cinctus*
Western shovel-nosed snake	*Chionactus occipitalis*
Gila spotted whiptail	*Cnemidophorus flagellicaudus*
Western whiptail	*Cnemidophorus tigris*
Desert banded gecko	*Coleonyx variegatus*
Western diamondback rattlesnake	*Crotalus atrox*
Sonoran sidewinder	*Crotalus cerastes cercobombus*
Speckled rattlesnake	*Crotalus mitchellii pyrrhus*
Black-tailed rattlesnake	*Crotalus molossus*
Mojave rattlesnake	*Crotalus scutulatus*
Arizona black rattlesnake	*Crotalus viridis cerberus*
Common collared lizard	*Crotaphytus collaris*
Western collared lizard	*Crotaphytus collaris baileyi*
Desert iguana	*Dipsosaurus dorsalis*
Large spotted leopard lizard	*Gambelia wislizenii*
Desert tortoise	*Gopherus agassizii*
Gila monster	*Heloderma suspectum*
Canyon tree frog	*Hyla arenicolor*
Night snake	*Hypsiglena torquata*
Sonoran mud turtle	*Kinosternon sonoriense*
Common kingsnake	*Lampropeltis getula*
Western blind snake	*Leptotyphlops humilis*
Rosy boa	*Lichanura trivirgata*
Red coachwhip	*Masticophis flagellum piceus*
Arizona coral snake	*Micruroides euryxanthus*
Desert horned lizard	*Phrynosoma platyrhinos*
Desert horned lizard	*Phrynosoma platyrhinos calidiarum*
Regal horned lizard	*Phrynosoma solare*
Saddled leaf-nosed snake	*Phyllorhynchus browni*
Western leaf-nosed snake	*Phyllorhynchus decurtatus perkinsi*
Sonoran gopher snake	*Pituphis melanoleucus affinis*

Bullfrog	*Rana catesbeiana*
Western long-nosed snake	*Rhinocheilus lecontei*
Western patch-nosed snake	*Salvadora hexalepis*
Western chuckwalla	*Sauromalus obesus*
Couch spadefoot	*Scaphiopus couchi*
Western spadefoot	*Scaphiopus hammondii*
Southern spadefoot	*Scaphiopus multiplicatus*
Sonoran spiny lizard	*Sceloporus magister*
Yellow-backed spiny lizard	*Sceloporus magister uniformis*
Ground snake	*Sonora semiannulata*
SW black-headed snake	*Tantilla hobartsmithi*
Lyre snake	*Trimorphodon biscutatus*
Spiny softshell	*Trionyx spiniferus*
Arizona brush lizard	*Urosaurus graciosus shannoni*
Tree lizard	*Urosaurus ornatus*
Side-blotched lizard	*Uta stansburiana*
[1] Stebbins, R.C. 1985. A Field Guide to Western Reptiles and Amphibians. Peterson Field Guides.	

Invasive Weed Species and Noxious Weeds

Non-native, weedy, and crop species typically dominate remnant agricultural lands and other disturbed and unmaintained areas. It is possible that invasive weed species and/or noxious weeds are present in disturbed areas surrounding the agricultural fields. Common weed species that may exist on the Project Site that are not included in the state's noxious weed list include filaree (*Erodium cicutarium*) and Russian thistle (*Salsola tragus*).

Potential Effects

General Vegetation

Direct Impacts

The Project is expected to result in permanent impacts to approximately 187 acres of existing agricultural and disturbed habitats (the entire Project Site). The vegetation on the Project Site is all expected to be removed. These areas are not considered high quality habitat for a large number of species, and are frequently disturbed further reducing the potential for occurrence of native vegetation, but direct impacts will include a change in the biological community and ecosystem on the Project Site.

Indirect Impacts

Potential indirect impacts on vegetation communities could include introduction of invasive weed species, which can out-compete native or other desirable vegetation (though no native vegetation occurs on the Project Site).

Cumulative Impacts

Agricultural development, along with its associated roads, infrastructure, and high amounts of frequent disturbance, has converted and degraded areas of natural vegetation (wildlife habitat) on the Project Site. The Project is expected to permanently impact the entire Project Site and remove all agricultural vegetation. Therefore, the Project would have a large impact on the current agricultural vegetation on the Project Site, but would have a negligible impact on native vegetation.

General Wildlife

Direct Impacts

The Project would result in the temporary and permanent disturbance of very low quality wildlife habitat (agricultural and disturbed habitat) on approximately 187 acres of land. Construction-related impacts would be both permanent/long-term and temporary/short-term. Permanent, long-term direct impacts might include displacement of resident wildlife species, vehicle strikes during operation, and permanent change to wildlife movement patterns through the area. Temporary, short-term direct impacts might include possible injury/death of small burrowing reptiles or mammals during ground-disturbing activities, vehicle strikes during construction, temporary displacement of wildlife species during construction activities, temporary impacts on wildlife movements due to construction activities, and noise-related disturbance. With the lack of overall wildlife diversity that is expected to occur on the Project Site and the immediate area, direct impacts on wildlife associated with the construction of the Project are expected to be low. Operation of the facilities would include regular worker activity, and there will not be any habitat present on the Project for most wildlife species. As a result, direct impacts to wildlife during operation are expected to be minimal.

Indirect Impacts

Potential indirect impacts could include loss of agricultural habitat for some wildlife species that rely on it for breeding or foraging purposes, potential avian electrocution risk (depending on final Project features), and increased raptor roosting sites on poles and components (depending on final Project features), which can increase predation rates on certain prey species. Indirect impacts will be reduced, but the Project would result in long-term loss of the vegetation type/agricultural land. However, this would result in only minor impacts to the biological community given the low quality of the existing habitat.

C*umulative Impacts*

Agricultural development and other related infrastructure have converted and degraded areas of natural vegetation (wildlife habitat). The Project would permanently impact approximately 187 acres of non-native vegetation that is generally considered to be low quality habitat for most species in an area that has been frequently disturbed over a long period of time.

Migratory Birds

Pre-construction protocol surveys for BUOW per the *Burrowing Owl Project Clearing Guidance for Landowners* (AGFD 2009) would be conducted to ensure that any active BUOW burrows are avoided. If active burrows are found (burrows being currently used by BUOW), an appropriate avoidance buffer would be established (per AGFD guidelines) or a permit would be obtained to relocate the owls. Therefore, there would be no impacts to active burrowing owl (*Athene cunicularia hypugaea*) nests. Similar protocols will be established in coordination with the AGFD and USFWS and followed for other bird species that may have the potential to nest on the Project Site during construction activities.

The Project could create a slight collision risk to birds. However, due to the degraded nature of the habitats within and adjacent to the Project, the amount of industrial, residential, and commercial development in the vicinity of the Project Site, and the lack of high-quality foraging and migration areas in the Project vicinity, this risk would be low and would represent a minor adverse impact on these species. To minimize risk to migratory birds, the lines will be constructed following industry suggested practices aimed at reducing avian collisions and electrocutions (Avian Power Line Interaction Committee [APLIC] 2006 and 2012). If avian/power line interactions become an issue, the Proponent will move quickly to evaluate and address the issue.

Conclusions

The entire Project Site has been previously disturbed and developed for agriculture, significantly reducing the overall habitat quality. Construction of the Project would occur in previously disturbed areas. The biological resources with the potential to occur on the Project Site would not be expected to be negatively affected because habitat on the site is in a degraded condition.

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

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.

VISUAL RESOURCES

Sensitive Viewpoints

Sensitive viewpoints consist of locations from which a significant number of individuals having some regard for the integrity of visual resources would view a landscape and be exposed to the presence of the Project Red Hawk (Project). Potential sensitive viewpoints in the Project area occur along transportation corridors within proximity of residential, institutional, agricultural, and commercial land use areas.

The transportation corridors along the Project include Elliot Road, Sossaman Road, Power Road, and East Peralta Avenue. Viewer sensitivity is based on the importance of features, conditions that affect visual perception and social factors that contribute to view perception. The levels of sensitivity are generally classified as low, moderate and high depending on viewer types and exposure, view orientation and duration, and viewer awareness/sensitivity to visual changes.

Visual quality is the visual pattern created by the combination of natural character landscapes and industrial and artificial features. Visual quality was evaluated using the following descriptions:

- Natural – the landscape exhibits distinctive and memorable natural visual features (landforms, rock outcrops, etc.) and patterns (vegetation/open space) that are largely undisturbed, usually a rural or open space setting. Few human-made developments or disturbances are present.
- Rural – the landscape consists of natural and human-made features/patterns, often the result of altering the landscape for farming or mineral extraction. These areas may not be visually distinct or unusual in the region.
- Mixed Residential and Commercial – the landscape is primarily human-made and affected by elements common to the built environment of mixed residential and commercial, and industrial areas. Human elements are prevalent, or landscape modifications exist, which do not compatibly blend with the natural surroundings.

Existing Conditions

Three representative key viewpoints, or Key Observation Points (KOPs), were selected within the Project area to depict existing visual quality. Photos were taken during field reconnaissance in September 2019. The locations of the KOPs are depicted in **Figure E-1**. Both the existing conditions and the potential visual effects of the Project for each KOP are shown in **Figures E-2, E-3, E-4, E-5, E-6, and E-7.**

KOP 1 (**Figure E-2**) East Peralta Ave. – Looking southwest from the residential neighborhood to the Project Site. The existing transmission corridor is shown in the foreground. The landscape in this area is dominated by ornamental landscapes in the foreground and vacant disturbed land in the middle and background. The visual quality is classified as rural in character.

KOP 2 (**Figure E-3**) South Sossaman Road – Looking west from the Paloma Sports Complex and Paloma Community Church to the Project Site. The existing transmission corridor is shown in the far right of the photo and existing 12kV poles are in the immediate foreground. The landscape in this area is dominated by vacant disturbed lands in the foreground, middle and background. The visual quality is classified as rural in character.

KOP 3 (**Figure E-4**) South Sossaman Road and East Elliot Road – Looking northwest from the intersection to the Project Site. The existing transmission corridor is shown in the background. The landscape in this area is dominated by vacant disturbed lands in the foreground, middle and background. The visual quality is classified as rural in character.

Potential Effects

Potential effects to visual resources relate to changes in available views of the landscape and the effects of those changes on viewers. Potential effects were evaluated based on a combination of contrasts between natural and rural use levels of visual quality and the levels of viewer sensitivity.

Visual resources would be affected by introducing the proposed switchyard, substations and 230kV structures into the existing landscape. The structures associated with all the facilities introduce straight, vertical lines and color contrast under certain lighting conditions. The effects of introducing these elements into the landscape would be apparent when viewed from sensitive viewpoints. However, while the simulations depict these electric facilities on vacant land, ultimately the data center would be built and these electric facilities would be integrated into the overall site and therefore be consistent with the overall nature of the nearby Elliot Road Technology Corridor.

Visual effects associated with each of the KOPs are described below and shown in **Figures E-5, E-6 and E-7** (visual simulations)**.**

KOP 1 (**Figure E-5**) East Peralta Ave. – Looking southwest from the residential neighborhood to the Project Site. The existing transmission corridor is shown in the foreground and the proposed switchyard would be visible in the middle and background. While this introduces new 230kV structures and facilities in the viewshed, the existing transmission corridor and data center

development would be consistent with the overall nature of the nearby Elliot Road Technology Corridor.

KOP 2 (**Figure E-6**) South Sossaman Road – Looking west from the Paloma Sports Complex and Paloma Community Church to the Project Site. The existing transmission corridor is shown in the far right in the photo and existing 12kV poles are in the immediate foreground. New transmission line structures and structures associated with other facilities are introduced into the viewshed. While this introduces new structures and facilities in the viewshed, the data center development would be consistent with the overall nature of the nearby Elliot Road Technology Corridor.

KOP 3 (**Figure E-7**) South Sossaman Road and East Elliot Road – Looking northwest from the intersection to the Project Site. The existing transmission corridor is shown in the background. While this introduces new structures and facilities in the viewshed, the integration of the data center development would be consistent with the overall nature of the nearby Elliot Road Technology Corridor.

HISTORIC AND ARCHAEOLOGICAL SITES

A Class I cultural resources report was prepared for the Project to provide a basis to evaluate the Project area and consult with agencies, as necessary, on potential mitigation requirements. The Class I report is included in **Exhibit E-1** and an overview of the report is provided below. Correspondence with the Indian Tribes is included in **Exhibit E-2**. A Class III survey will be completed for the Project area following approval and prior to construction activities.

Cultural Setting

The generally accepted cultural history of the Project area shows that human utilization of Southern Arizona spans the last 11,500 years. Nine main chronological periods (Paleo-Indian, Archaic, Early Formative, Pioneer, Colonial, Sedentary, Classic, Protohistoric, and Historic) have been archaeologically recognized, and each is characterized by different social and cultural attributes. More detailed overviews can be found in Bayman 2001; Berry and Marmaduke 1982; Bilsbarrow and Palus 1997; Bronitsky and Merritt 1986; Craig and Hackbarth 1997; Crown and Judge 1991; Deaver and Altschul 1994; Fish 1989; Fish and Fish 2008; Gilpin and Phillips 1998; Gumerman 1991; Haynes 1986; Janus 1989; Marmaduke 1993; Myrick 1980; Russell 1975; Spier 1970; Whittlesey et al. 1994; Wright 2002; and Wright et al. 2002.

Paleoindian Period

The Paleoindian period, approximately 10,000 to 8,500 B.C., is characterized by small, nomadic bands that followed megafauna and gathered wild plants. Sites from this period have been documented in southern Arizona (Cordell 1997; Haury 1950; Haynes 1986; Huckell 1984a).

The subsistence practices of early hunter-gatherers changed approximately 10,000 to 8000 B.C. with the extinction of large game, concomitant with the environmental changes associated with the Pleistocene/Holocene climatic transition (Guthrie 2006; Martin 1967). The overall lifestyle of the early hunter-gatherers continued into the Archaic period (ca. 8000 to 200 B.C.), but increased aridity during the early- to mid-Holocene brought about a change in the occurrence of plant species in the Southwest (Van Devender et al. 1987). Many of these drought-tolerant plants, such as

mesquite, palo verde, and screwbean pods; saguaro and other cactus fruits; and agave, were exploited by prehistoric peoples. These plants provided a protein-rich food source that supplemented the Archaic diet of small game.

Evidence of occupation during the Paleo-Indian period (ca. 10,000–8,500 B.C.) and Early Archaic periods (ca. 8,500–5000 B.C.) has been elusive in the middle Gila River area (Huckell 1984a, 1984b).

Archaic Period

The Early Archaic period, approximately 7500 to 5000 B.C., is characterized by a hunting and gathering lifestyle, similar to the preceding Paleoindian period. A major difference however was a climatic drying and warming trend leading to desert conditions, and the disappearance of Pleistocene big game, through natural or human agents. Hunting focused on modern game animals and gathering focused on seasonally available resources, with Archaic groups maintaining a significant degree of residential mobility. As the Archaic period progressed (Middle Archaic, ca. 5000 to 2000 B.C.), some populations began to experiment with encouraged plants. Various wild plant resources were encouraged through selective planting or reseeding, weeding of competitor species, and supplemental watering. Seasonal rounds were generally maintained, with encouraged plant stands being revisited during harvest time. Tools identified during the Archaic period such as metates, manos, and mortars demonstrate a significant focus on processing wild plant foods. Small seasonally occupied villages were present, but larger more permanent villages did not develop until the Late Archaic period.

The Late Archaic, (approximately 2000 B.C. to A.D. 1), is a period which was characterized by an increasingly sedentary lifestyle although group mobility was still maintained to varying degrees. Encouraged plants began to give way to small-scale horticulture, especially with the introduction of domestic cultigens. Maintaining small fields and crops encouraged increased sedentism, and Late Archaic populations along floodplains and alluvial fans began to assemble into permanent villages. Sites of this type are known from the Tucson Basin, Casa Grande, and the Phoenix areas. Experimentation with domestic cultigens from Mexico appeared first in the Tucson Basin (corn circa. 1700 to 1200 B.C.), which is located closer to the source area for these cultigens. Late Archaic villages are deeply buried under alluvium because of their location on floodplains and alluvial fans.

The first definitive evidence of human habitation along the middle Gila River dates to the Middle Archaic period. Recent work (Bubemyre et al. 1998; Neily et al. 1999; Woodson and Davis 2001) has documented Middle Archaic period sites, and numerous surface finds of projectile points which suggest the widespread human use of the Phoenix Basin then (Loendorf and Rice 2004). Beginning around 1500 B.C., during the Late Archaic period, the first agricultural villages were established in the Sonoran Desert, mainly in southern Arizona (Diehl 2003; Mabry 1998; Matson 1991; Silva 2003). Comparable pre-ceramic, semi-sedentary horticultural settlements have not been identified in the middle Gila Valley.

The succeeding Early Ceramic period (approximately A.D. 1–550), is characterized by small seasonally occupied hamlets, and more-widespread use of plain ware pottery in the region. Pottery then was not as widely used as in the later Hohokam occupations however, and the range of types produced was comparatively limited (Garraty 2011; Whittlesey and Ciolek-Torrello 1996).

Current evidence suggests that specialized pottery production began by around A.D. 450 along in the vicinity of South Mountain (Abbott 2009).

Hohokam

Garraty (2013) summaries the Hohokam as many antecedents of Hohokam cultural attributes that imply in situ development of Hohokam society from earlier, Archaic period populations (Bayman 2001; Cable and Doyel 1987; Doyel 1991; Wallace 1997; Wallace et al. 1995; Wilcox 1979). The Hohokam tradition initially appeared in the Phoenix Basin and was characterized by the development of large-scale irrigation agriculture, red-on-buff pottery, a distinctive iconography, exotic ornaments and artifacts, a cremation mortuary complex, and larger as well as more complex settlements (Fish 1989; Howard 2006).The Hohokam sequence begins with the Pioneer period (ca. A.D. 55-/650–700), which is marked by the introduction of decorated pottery (Ciolek-Torrello 1995; Wallace et al. 1995; Whittlesey 1995). Over the next five centuries, residents the middle Gila River valley manufactured decorated pottery on a large scale and supplied it throughout the Phoenix Basin, including the Salt River valley to the north (Abbott 2009).

Pioneer Period

The first period of Hohokam development involves a transition in local populations, rather than the influx of peoples from Mesoamerica as some had previously believed. During the transition from the Late Archaic to the Pioneer period, populations slowly began to shift their subsistence strategy to focus on a more sedentary, agriculture-dependent way of life. Hunting and gathering available wild foods remained important, but the Hohokam developed a complex water control system that made irrigation agriculture possible. Ceramics first appeared during this period as plainware utilitarian items, which through time expanded to include many types of decorated wares including: redwares, red-on-gray, and red-on-buff. The Snaketown phase, at the end of the Pioneer period, saw several changes which indicated a growing population, increased trade contacts, and growing complexity: more diverse ceramic vessel forms and designs; expansion of irrigation systems; the presence of ceramic figurines, slate palettes, carved stone bowls, and other ritual and ceremonial items; presence of shell from the Gulf of California; and trade goods from Mesoamerica and the Mogollon rim area.

Colonial Period

During this period, the number, size, type, and complexity of Hohokam sites in the area increased. Pithouses within villages tended to cluster in courtyard groups, probably occupied by extended families, which opened onto communal plaza areas. Numerous large villages contained ballcourts, which are posited to be related to the Mesoamerican game. These ballcourts probably served as a focus for community integration, where peoples from smaller surrounding hamlets would come to trade, renew kinship ties, and take part in various community activities. Smaller villages and subsistence-related sites were increasingly established during this period. Exotic trade items such as macaws and copper bells from Mesoamerica often overshadow continuing trade with Mogollon Rim and Colorado Plateau populations. By the end of the Colonial period, Hohokam sites were established throughout central and southern Arizona in a variety of environmental settings.

Sedentary Period

Throughout this period, patterns established during the preceding Colonial period were intensified. Economic complexity increased with certain villages specializing in particular crafts. In addition, a possible hierarchical distinction between sites, especially those along shared canal systems, is indicated. Platform mounds began to be constructed during this period and appear to have served as a type of public architecture possibly associated with hierarchical divisions within villages, with ceremonial activities, or both. As the ballcourt slowly began to go out of use, the focus of community activities began to switch to the platform mound. There are few changes to Hohokam material culture during this time with the exception of the beginnings of platform mounds, adobe/jacal surface structures, and redware.

Classic Period

Unlike the previous period which saw few changes, most familiar Hohokam traits disappeared or underwent radical changes during this period. Many large villages were abandoned, although, several grew as outlying populations and groups in smaller settlements aggregated with existing communities (or formed new communities) along major watercourses. Pithouses disappeared almost completely and were replaced by surface structures of adobe and masonry, which were often organized into roomblocks, then compounds with the addition of enclosing walls. Platform mounds effectively replaced ballcourts as the focus of community activities. Red-on-buff pottery was replaced by red and polychrome wares. Treatment of the dead changed: inhumation became common while cremation declined. Trade patterns shifted from a Mesoamerican focus to a more northern and eastern focus. As the trade patterns shifted to the north and east, architectural and material culture traits of the Classic period Hohokam were being derived from contact with populations in that region of eastern Arizona and western New Mexico—the Salado culture. The reorganization of Classic period Hohokam architectural and material culture styles into styles that more closely resembled the Salado indicated increased regional interaction between the two groups. In the past it was believed to represent an invasion by Salado peoples, but this is no longer thought to be the case.

There may also be a late/post-Classic Hohokam occupation known as the Polvoron phase. The existence of the phase is still a matter of debate, as well as how it fits into the generally accepted Hohokam chronology. It may extend Hohokam culture into the 16th century, or it may merely represent the end of the Hohokam sequence around A.D. 1450 to 1500. This phase is defined in the archaeological record by the reoccupation of late Classic structures, a return to pithouses, and the end of inhumation burial.

Protohistoric/History

The Protohistoric period (ca. A.D. 1500–1700) is generally defined as the interval between the end of the Hohokam Classic period and the earliest evidence of Spanish contact (Wells 2006; Whittlesey et al. 1998:185). Unfortunately, archaeological evidence of Protohistoric period occupation has been elusive in southern Arizona, and few archaeological sites in the Project area can be firmly assigned to this time span. Although the relationship between the late Prehistoric inhabitants of the Middle Gila (also known archaeologically as the "Hohokam") and the Pima has been greatly debated, recent evidence has been published that adds multiple lines of evidence to support the Pima oral traditions regarding their past connection and continuous relationship to the "Hohokam". Loendorf et al. (2013) provided extensive data from the large village site of Sacate,

which has been continuously occupied prior to A.D. 1600. These data provided additional supporting statements for cultural continuity between the Hohokam and the Akimel O'odham. Together with the ethnohistoric and ethnographic data, data were collected for ancillary studies for obsidian sourcing, projectile point typology, ceramic typology, architectural design, and subsistence practices that support a continuous relationship to the Hohokam.

The Protohistoric period also saw reoccupation of several prehistoric sites by the Maricopa, Kohatk, or Pima, as well as the development of new settlements. The Jesuit missionary, Father Eusebio Francisco Kino was the first Spanish explorer to provide written accounts of the Gila River area. He was assigned to missionize in the Pimeria Alta (Land of Upper Pimas), a region that today includes northern Mexico and southern Arizona. During Kino's travels, he established many visitas and a few missions from the modern international border to the Gila River region. In addition, his explorations served as an important first step toward an overland route between Sonora, the Pima villages of the Gila River, and settlements along the California coast. Kino visited villages along the Gila River at least six times between 1691 and 1702. During his journeys, Kino mapped and described Pima villages and his interactions with various groups. Kino does not describe irrigation agriculture, so it is suspected that local populations subsisted by floodwater agriculture, hunting, and gathering. By 1744 however, the Pima were growing wheat with irrigation agriculture, and by 1775 irrigated wheat was a major crop in most Pima villages. Throughout the 1700s, the Spanish continued to expand the mission system in southern Arizona and continued to introduce non-native crops, animals, trade goods, religion, and culture.

The Historic period in Arizona dates roughly from 1753 to 1954. The 1753 date was chosen as it represents the founding of the first permanent Spanish settlement in Arizona. Dates of Protohistoric and Historic periods can differ across Arizona, usually based on dates of contact with Europeans and dates of permanent settlement by Europeans. For the purposes of this study, the aforementioned dates will be used.

According to the National Parks Service, the year 1775 marks the year Juan Bautista de Anza (Anza) successfully opened an overland route of emigration and supply from Sonora to the missions and settlements of Alta California. The 198 soldiers and families that Anza escorted brought with them on their 1,200-mile trek their language, traditions, and diverse New World Hispanic culture. The backgrounds of all soldiers and settlers were carefully recorded as español, mulato, or mestizo. Almost all the expedition members were born on this continent and had mixed European, African or Indian parentage. These influences changed the lives of the indigenous peoples and shaped the development of Arizona and California. The route Anza opened supplied the settlements of Alta California long enough for them to become established. In 1781, the Yumas revolted against Spanish rule and closed the route during the rest of the colonial period. In later years, Anza's trail served the military, settlers, cattlemen, forty-niners and other desert travelers.

The Mexican War of Independence did not have a direct effect on the area, as most of the battles took place far south of southern Arizona. However, the Spanish did have to withdraw their troops to central Mexico, which left a vacuum that the Apache exploited. During the 1820s, Apache raiders were estimated to have killed approximately 5,000 people in Sonora and southern Arizona. Mexico was victorious in the war and declared independence in 1821. The new Mexican government abolished the mission system. In Arizona, settlements and occupation contracted to Tucson and Tubac. In response to increased Apache raiding, Piman settlement also contracted south and west. During the Mexican (1821 to 1853) and subsequent American occupations, Pima

wheat production increased dramatically, as a result the Pima sold excess crop to settlers and travelers using the Gila Trail. The land in Arizona located north of the Gila River became part of the United States in 1848, although the American phase did not officially begin until 1853, when this area was sold to the United States by Mexico as part of the Gadsden Purchase. American fur trappers and traders began working the Gila River in 1825 (the American phase dates from 1853 to present). During the Mexican-American War, American military forces passed through southern Arizona on their way to California, commonly using routes centered on the Santa Cruz and Gila rivers. These routes were well blazed by the Army, and increased use occurred after the end of the war. One specific route, the Gila Trail, was by this time a widely used mail, freight, and emigrant route. At the close of the American Civil War, settlement in the Gila River valley increased dramatically. This was due in part to the American Army's attempts to pacify the Apache. Arizona was first included as part of the Territory of New Mexico, and then the Territory of Arizona, and officially received American statehood in 1912.

Settlement

After the Civil War, Americans began to settle permanently along the Gila River because of the availability of good agricultural lands. Agricultural activities by American settlers along the Middle Gila and further upstream caused an insufficient supply of water for Pima farmers. By 1872, the water reaching Pima crops was so limited that some Pima Indians relocated to the Salt River valley. However, this is not the only reason the Pima moved. Commercial pursuits in the growing Phoenix-Mesa-Lehi area, land and water availability, and the Anglo desire for a buffer between themselves and the raiding activities of the Apache also served as agents to pull the Pima Indians from the Gila River valley to the Salt River valley. Settlers came not only from the east to settle within Arizona's agricultural lands, and rich mining districts, but also from Utah (Bancroft 1889; Ezell and Fontana 1994; Piremen 1982). Mormon settlers established towns in northern and eastern Arizona, and into northern Mexico. Some of the largest areas of Mormon settlement are the modern Mesa and Safford areas, although significant settlement also took place along the Little Colorado and San Pedro Rivers. From 1880 to 1900, the population of southern Arizona doubled, and by the turn of the century, Arizona had a population of 100,000. Many communities were established. The major town centers within the Project area are discussed below. Arizona went on to become a major producer of cotton and copper, although these industries have had their ups and downs. Agriculture tends to remain as the major economic focus within the Project area. The 20th century saw the transformation of significant portions of Arizona into military installations. Prisoner of war camps (Canal Camp and Butte Camp) where established in proximity to the communities of Florence and Queen Creek and along the Gila River between 1942 and 1945 (Iritani 1994).

Mesa

The City of Mesa is located approximately 20 miles east of Phoenix and was originally founded by Mormon pioneers in the 1870s. Daniel Webster Jones arrived at Lehi, what is now the northern edge of present-day Mesa. When a second group of Mormons arrived from Utah and Idaho, they moved to the top of the mesa that gives the city its name (City of Mesa 2014: Ch. 2; Zafra 2000). Mesa City was registered on July 17th, 1878 on a one-square-mile townsite, and the town was incorporated in 1883. As canals were constructed, and widened, the town eventually became a strong agriculture center. Dr. A.J. Chandler, the same man who would later start the city bearing his name south of Mesa, enlarged the Mesa Canal with heavy machinery in 1895. He also built the

first office complex in Mesa, on the northwest corner of Main and MacDonald, using the first evaporative air-cooling system in Arizona (Zafra 2000). In addition, he started an electric power plant, thus allowing the City of Mesa to purchase the utility company in 1917 and becoming one of the few cities in Arizona to own utilities. These utility earnings enabled Mesa to pay for capital expenditures without bonds until the 1960s. It also provided the shared funds that allowed construction and service projects to be implemented during the Works Progress Administration during the Depression (Zafra 2000). Falcon Field and Williams Field were opened in the 1940s bringing in military personnel and their families. Until 1960, about half of the residents earned their living in agriculture (Zafra 2000). Today, Mesa is the third largest city in Arizona with about 508,958 residents (US Census 2018).

Morrison Ranch

For more than 80 years the Morrison Family has been growing cotton, corn, and alfalfa and producing milk at its dairy on its 3,000-acre farm (http://www.morrisonranch.com/history.html). A portion of the farm includes the Project APE.

Railroad History

Southern Pacific Railroad

After the close of the Civil War, a southern railroad route along the now defunct Butterfield Stage Route was being explored as an option to move goods and people across the country in a timely fashion. The Southern Pacific Railroad Company (SPRR) was to lay track from San Francisco to Yuma, while the Texas and Pacific Railroad Company (T&PRR) was to lay track westward across Texas, New Mexico, and Arizona to meet with the SPRR at Yuma. As the SPRR reached the Arizona border, the T&PRR was stalled in the vicinity of Fort Worth, Texas, nowhere near the interconnection point at Yuma. Having no authority to continue into Arizona, the SPRR courted the U.S. Congress, but failed to receive approval. The SPRR then turned to the territorial legislatures of Arizona and New Mexico and received approval to continue laying track eastward. The economy and settlement of southern Arizona quickly changed as it was now reliably connected to the rest of the country. The Wellton-Phoenix-Mesa-Eloy segment of the transcontinental Sunset Route of the SPRR was constructed in 1926, and spurs off of the mainline in Wellton and travels through Phoenix, Tempe, Mesa, Gilbert, and Coolidge before rejoining the mainline at Eloy (Janus 1989). The Mesa to Winkelman segment of the Sunset Route of the SPRR began in 1903, and its primary function was the transportation of mining product (Kearns et al. 2001). The SPRR was taken over by the UPRR in 1997 (Union Pacific Railroad 2006).

GLO Search

General Land Office (GLO) maps on file at the Bureau of Land Management (BLM) office in Phoenix were checked for historic-period features in the area. GLO Maps are provided in **Exhibit E-1,** Class I Cultural Report.

An official record search was conducted by ASM for cultural resources in June 2019. The BLM General Land Office (GLO) online survey plats, and historic aerials and topographic maps were also reviewed. Archival and historical site files and inventories were checked at each of these sources. The parameters of the record search included the entire APE and a one-mile radius for previous surveys and sites.

The results of the background research indicate that ten previous cultural resources studies were conducted, and one archaeological site was previously recorded within a one-mile radius of the Project area. No sites are directly within the APE. BLM GLO Survey Plats for Township 1 South, Range 7 East showed that Donald F. Swift acquired an 160-acre parcel in the SE ¼ of Section 7 (the APE) on August 10, 1921 under the Homestead Act of 1862 (**Table E-1**). GLO Map 1398, filed in December 1870, shows no historic-period roads or features within the Salt River Project Agricultural Improvement and Power District (SRP) Project area (GLO 1870).

GLO Map 1397, filed in March 1913, shows a telephone line running northwest-southeast approximately a mile to the north of the APE in Sections 9 and 10. This feature also appears on modern United States Geological Survey (USGS) maps but has not been formally recorded as an archaeological site (GLO 1913). One road is present to the west of the APE in Section 7 (GLO 1913) and may now be represented in part by the Roosevelt Canal road.

The Morrison Ranch has been farming for the last 80 years in Mesa, Arizona and this SE quarter of Section 7 is part of their farming enterprise (http://www.morrisonranch.com/history.html).

Table E-1. Bureau of Land Management General Land Office Search Results – T1S/R7E

BLM Serial No.	Name	Issue Date	Acres	Document	Sect/Block	Authority
AZPHX 0041464	Donald F Swift	8/10/1921	160	041464	7/ SE ¼	May 20, 1862: Homestead Entry Original (12 Stat. 392)

The 1904 version of the *Desert View, Az.* USGS Map (1/62,500) was reviewed for historic features in the APE. The map showed no features in the APE.

The 1956 version of the *Higley, Az.* USGS Map (1/24,000), reprinted in 1959, was reviewed for historic features in the APE. The map shows structures at East Posada Avenue and South Sossaman Road and unimproved farm roads in the APE. These features have not been formally recorded. In addition, irrigation canals are present on the southern boundary of the APE.

Environmental Setting

Previous Cultural Resources Surveys

The literature review and ASM records search showed that ten Class III cultural surveys were previously conducted within a one-mile radius of the APE (**Table E-2)**. According to ASM records, none of the APE has been previously surveyed for cultural resources.

Previously Recorded Archaeological Sites

The background research showed that one archaeological site (AZ U:10:111[ASM] was previously recorded within one mile of the APE during the Hackbarth (1996) survey for the Sunbelt Holdings Guadalupe and Hawes Road Development (**Table E-2)**. There are no previously recorded sites within the APE; however, the Roosevelt Water Conservation District Canal is located adjacent to the APE to the west. The canal has been determined eligible to the National Register of Historic Places (NRHP) under Criterion A (SWCA 2016) but changes to Arizona Antiquities Act, Policy 8-205(B) will not require an update to its site record.

4.2.1 AZ U:10:111(Arizona State Museum (ASM))

AZ U:10:111(ASM) was originally recorded by Hackbarth (1996) as the Hawes Road Ranches. The site was recorded as a 1950s farm or ranch residence that included structural remains (two house foundations, two wells, and one outbuilding) and a low-density historical artifact scatter (glass, bottles, and cans). Hackbarth (1996) recommended the site not eligible for listing in the NRHP.

Table E-2. Previous Cultural Resources Surveys within One Mile of APE

ASM Number	Author/Year	Report Title or Project Description	Sites Within APE
1986-0238	Bruder and Rogge 1987	*Cultural Resources Technical Report for the Southeast Loop Highway. Dames & Moore, Phoenix.*	No
1994-0310	Punzmann 1994	*Archaeological Survey of the Gilbert Junior High No. 4 Site and Adjoining Transportation Facility Site, Mesa, Maricopa County, Arizona.*	No
1995-0155	Stubing and Mitchell 1995	*An Archaeological Survey Along Guadalupe Road, Between Power Road and Hawes Road, Maricopa County, Arizona. SWCA Cultural Resources Report # 95-24.*	No
1996-0120	Hackbarth 1996	*Archaeological Survey of the Proposed Sunbelt Holdings, Inc. Guadalupe and Hawes Road Development, Maricopa County, Arizona.*	One-Mile Buffer

Table E-2. Previous Cultural Resources Surveys within One Mile of APE			
ASM Number	**Author/Year**	**Report Title or Project Description**	**Sites Within APE**
1998-0401	Garcia and Lewenstein 1998	*Cultural Resources Survey for the Power Road (Guadalupe Road to Baseline Road) Improvement Project, Maricopa County, Arizona. Dames & Moore, Phoenix.*	No
2000-0269	DeMaagd 2000	*Cultural Resources Survey for the Elliot District Park at Roadrunner and Elliot Roads, Gilbert, Maricopa County, Arizona. Archaeological Consulting Services, Ltd., Tempe.*	No
2002-0265	Touchin, Palmer, and Brodbeck 2002	*A Class III Cultural Resources Survey for the Roosevelt Water Conservation District (RWCD) Second Pipeline Project, Maricopa and Pinal Counties, Arizona. Cultural Resource Report 02-09, HDR Engineering, Inc., Phoenix.*	No
2002-0386	Schmidt and Mitchell 2002	*An Archaeological Survey of the Potomac Tower #AZ0359A in Mesa, Maricopa County, Arizona. SWCA Cultural Resources Report No. 02-431.*	No
2003-1278	Goldstein 2003	*A Cultural Resources Survey of Approximately 0.04 Acres of State of Arizona Land on the Campus of Liberty School, Mesa, Maricopa County, Arizona.*	No
2004-0508	Clark 2004	*An Archaeological Survey at the Power Road - Monterey Avenue Intersection, Mesa, Maricopa County, Arizona.*	No

Arizona Register Evaluation

The National Historic Preservation Act of 1966 did not publish their guidelines for "How to Apply the National Register Criteria for Evaluation" until 1990 (NPS 1990). In the meantime, the Arizona State Legislature passed ARS §41-511 in 1974 and this established the ARHP (Arizona Register). This is a process that allows for the inclusion of properties that had historic significance in Arizona, but not enough significance to qualify them for the NRHP. The criteria of eligibility for the ARHP are the same as those for the NRHP

Established by Rule and appearing in the Administrative Code R12-8-206 as follows: "The quality of significance in Arizona history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

1. That are associated with events that have made a significant contribution to the broad patterns of our history (Criterion A): or
2. That are associated with the lives of significant persons in our past (Criterion B); or
3. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); or
4. That yields, or may be likely to yield, important information related to prehistory or history (Criterion D).
5. Generally properties must be 50 years or older to be considered eligible for the Arizona Register of Historic Places. Properties that are less than 50 years old may be considered eligible under circumstances where they are an integral part of a district which is 50 years or older and meets eligibility criteria or the property has exceptional importance."

Historic Properties within the Search Area

No historic properties have been previously identified within the APE; however, one site, the Roosevelt Water Conservation District Canal, was determined eligible for the NRHP and is located adjacent to the APE to the west. As this linear site is still in use, policy changes to the Arizona Antiquity Act (Policy 8-205[B]) will not require an update to its site record.

Potential Effects

A cultural resources records and literature review was conducted for KPE in June 2019 by ASM. The review was completed in advance of the proposed Project. The purpose of the investigation was to identify previously recorded cultural resources, which may include archaeological sites (prehistoric or historic), structures, buildings, landscapes, districts, or objects for their respective eligibility for listing on the NRHP within the APE.

The result of the cultural resources records search and literature review shows that the APE has not been previously surveyed for archaeological resources and no known historic properties are located within the APE; however, there are unrecorded historical features in the APE. Ten previous archaeological investigations have been conducted within one mile of the APE, and two previously recorded site, AZ U:10:111(ASM), was located within the one-mile buffer; however, AZ U:10:111(ASM) has been recommended not eligible for the NRHP (Hackbarth 1996) and has since been developed and replaced with modern homes. The second site, the Roosevelt Water Conservation District Canal, has been determined eligible for the NRHP under Criterion A and is located adjacent to the APE to the west. While policy changes to the Arizona Antiquity Act (Policy 8-205[B]) will not require an update to its site record, it is management's recommendation that there is sufficient space between the Project area and the Historic Property as to not affect the integrity of the site.

For most cultural resources, the greatest potential for adverse impacts are from ground disturbing activities directly associated with Project construction. For the Project, ground disturbance would occur within the 187 acre parcel.

Appropriate mitigation measures sites discovered during subsequent Class III pedestrian surveys would be developed in consultation with the appropriate land managing agencies, including State Historic Preservation Office (SHPO), and interested Tribes. Many potential effects can be removed by avoiding cultural resource sites. Mitigation measures could include flagging or fencing of sites during construction. Other mitigation measures could include site testing and excavation.

Intensive Class III inventories may not identify all historic properties because various natural conditions can hinder the discovery process. Unanticipated discoveries are undocumented cultural resources and human remains that are encountered during construction or operation of facilities. If unanticipated discoveries are made in connection with construction activities, the Project will immediately suspend all operations in the vicinity of the find and will not resume until the discovery is appropriately treated and authorization is given by the appropriate agency.

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Legend

- Key Observation Point (Location and Direction)
- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- Major Road
- Canal
- Municipal Boundary
- Project Site

0 0.1 0.2 0.3
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

SRP®

PROJECT RED HAWK
EXHIBIT E-1 KOP LOCATIONS

Map Extent: Maricopa County, AZ

Date: 9.17.19		Author: sjw



EXISTING VIEW

Project Red Hawk

Typical 230 kV Switchyard - East Peralta Avenue - Looking Southwest

E-2

Visual Environments
WWW.VISENV.COM

9/18/19



EXISTING VIEW

Project Red Hawk

Typical 230 kV Switchyard - South Sossaman Road at Sports Complex - Looking West

Visual Environments
WWW.VISENV.COM

E-3

9/17/19



EXISTING VIEW

Project Red Hawk

Typical 230 kV Substation - South Sossaman Road & East Elliot Road - Looking Northwest

E-4

Visual Environments
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9/18/19



PROPOSED VIEW

Project Red Hawk

Typical 230 kV Switchyard - East Peralta Avenue - Looking Southwest

THIS RENDERING IS BASED ON CURRENT INFORMATION AS OF THIS DATE AND IS SUBJECT TO CHANGE.

E-5

Visual Environments
WWW.VISENV.COM

9/18/19



PROPOSED VIEW

Project Red Hawk

Typical 230 kV Switchyard - South Sossaman Road at Sports Complex - Looking West

THIS RENDERING IS BASED ON CURRENT INFORMATION AS OF THIS DATE AND IS SUBJECT TO CHANGE.

E-6

Visual Environments
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9/18/19



PROPOSED VIEW

SRP®

Project Red Hawk

Typical 230 kV Substation - South Sossaman Road & East Elliot Road - Looking Northwest

THIS RENDERING IS BASED ON CURRENT INFORMATION AS OF THIS DATE AND IS SUBJECT TO CHANGE.

E-7

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9/18/19

EXHIBIT E-1
CLASS I CULTURAL REPORT

Cultural Resource Records Review for the SRP Project Red Hawk, Mesa, Maricopa County, Arizona

Prepared for:
Salt River Project

Prepared by:
Patricia Powless, RPA

Submitted by:
Patricia Powless, RPA

KP Environmental, Inc.
1038 Dewitt Avenue
Encinitas, California 92024

August 2019

This version does not include confidential information.

Report Title: Cultural Resource Records Review for the SRP Project Red Hawk, Mesa, Maricopa County, Arizona.

Project Name: SRP Project Red Hawk.

Project Location: Mesa, Maricopa County, Arizona.

Project Locator UTM: 12/ 437187 m E/3690748 m N

Project Sponsor: Salt River Project (SRP)

Sponsor Project Number(s):

Lead Agency: SHPO

Other Involved Agencies: Arizona Corporation Commission (ACC)

Applicable Regulations: Arizona burial laws (A.R.S. § 41-844 and A.R.S. § 41-865)

Funding Source: Private

ASLD ROW Application Number:

Description of the Project/Undertaking: The proposed Project consists of providing energy to serve a single customer data center on a private 187-acre parcel.

Project Area/Area of Potential Effects (APE): SRP is planning to provide energy to serve a single customer data center on a 187-acre parcel northeast of the intersection of East Elliot Road and South Sossaman Road, in eastern Mesa, Maricopa County, Arizona.

Legal Description: Township 1 South, Range 7 East, Section 7 on the Higley, Arizona 7.5-minute USGS topographical quadrangle (Gila and Salt River Baseline and Meridian [GSRBM]).

Land Jurisdiction: Private

Total Acres: Approximately 187 acres

Consultant Firm/Organization: KP Environmental, Inc.

Project Number: SRP Project Red Hawk

Permit Number(s): 2019-046bl

Number of IOs: 0

Number of Sites: 1

Eligible Sites: 0

Ineligible Sites: 1 (AZ U:10:111([ASM])

Unevaluated Sites: 0

Summary

The purpose of the cultural resource literature review was to identify cultural resources, which may include archaeological sites (prehistoric or historic), structures, buildings, landscapes, districts, or objects for their respective eligibility for listing on the Arizona Register of Historic Places within the area of potential effects (APE) and a one-mile radius.

The cultural resource literature review was conducted for KP Environmental, Inc. (KPE) in June 2019 by Arizona State Museum (ASM). As a result, one previously recorded site, AZ U:10:111(ASM) the Hawes Road Farms, was located within a one-mile radius. No additional sites were located during the records review.

The result of the cultural resources records search and literature review shows that the APE has not been previously surveyed for archaeological resources and no known historic properties are located within the APE; however, there are unrecorded historical features in the APE. Ten previous archaeological investigations have been conducted within one mile of the APE, and two previously recorded site, AZ U:10:111(ASM), was located within the one-mile buffer; however, AZ U:10:111(ASM) has been recommended not eligible for the NRHP (Hackbarth 1996) and has since been developed and replaced with modern homes. The second site, the Roosevelt Water Conservation District Canal, has been determined eligible for the NRHP under Criterion A and is located adjacent to the APE to the west. While policy changes to the Arizona Antiquity Act (Policy 8-205[B]) will not require an update to its site record, it is management's recommendation that there is sufficient space between the Project Area and the Historic Property as to not affect the integrity of the site. It is also management's recommendation that a cultural resources pedestrian survey be conducted prior to construction to ensure that all historical and archaeological resources are identified in the APE.

If previously unidentified cultural resources should be discovered during construction, the contractor must stop work immediately and take all reasonable steps to secure the preservation of those resources. The ASM should be notified to make arrangement for the appropriate assessment and treatment of those resources. If any human remains or funerary objects are unexpectedly discovered, they should be reported to the director of the ASM in accordance with A.R.S. § 41-865.

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APPENDIX A

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1.0 INTRODUCTION

1.1 Background

Salt River Project (SRP) has received a request to provide energy to a single customer data center on a 187-acre parcel northeast of the intersection of East Elliot Road and South Sossaman Road, in eastern Mesa, Maricopa County, Arizona. **(Figures 1 and 2).** The Project Red Hawk (Project) will connect a new 230 kV switchyard to the existing Browning to Santan power line located in SRP's transmission corridor immediately north of the Project Site. The switchyard will serve 230 kV transformers connected by up to 22 double-circuit structures. Each of these transformers will be strategically placed throughout the customer's property to serve a portion of the customer load. All electrical facilities will be located on the 187-acre customer-owned parcel.

The Project is located in Township 1 South, Range 7 East, in Section 7 on the Higley, Arizona 7.5-minute USGS topographical quadrangle.

1.2 Project Summary

A cultural resources literature review was conducted by KP Environmental, Inc. (KPE) in June 2019 for the proposed Project, located in eastern Mesa, Arizona. The review was completed in advance of the proposed Project. The purpose of the literature review was to identify known cultural resources, which may include archaeological sites (prehistoric or historic), structures, buildings, landscapes, districts, or objects and their respective eligibility for listing on the Arizona Register of Historic Places (ARHP) within the Area of Potential Effects (APE). This review was performed in compliance with regulations and guidelines of the Arizona State Historic Preservation Office (SHPO).

Legal Description: Township 1 South, Range 7 East within Section 7 of the Higley 7.5' Quadrangle (Gila and Salt River Baseline and Meridian [GSRBM]). See **Figure 1**. The APE consists a parcel approximately 187 acres and is located on private land (see **Figure 2**).

2.0 ENVIRONMENTAL SETTING

The current Project location is situated in a physiographic area referred to as the middle Gila Valley in the southern portion of the Phoenix (Salt–Gila) Basin. The middle Gila Valley stretches approximately 120 km (75 miles) from North and South Butte (collectively known as "the Buttes"), located approximately 26 km (16 miles) east of Florence, to the confluence of the Gila and Salt rivers (Doyel et al. 1995; Gregory and Huckleberry 1994; Waters and Ravesloot 2000, 2001). The valley is bisected by its namesake, the Gila River. Up until the construction of the Coolidge Dam in 1928, the Gila River was one of the largest perennial rivers in the American Southwest and a provider of vital resources to the original inhabitants of the region.

The APE is situated at the northern end of the Santan Valley and northeast of the Santan Mountains. The Santan Mountains, which rise to elevations over 945 m (3,100 ft), are located southwest of the Project Area and are composed primarily of Precambrian igneous and metamorphic rocks, such as granite and schist. Lesser amounts of Tertiary rhyolite and undifferentiated Tertiary and Quaternary basalt are also present (Wilson and Moore 1959; Wilson et al. 1957). Local soils are comprised of 61.5% Gilman loam and 38.5% Estrella Loam (NRCS 2019).

Vegetation near the Project is within the Lower Colorado River Valley Sonoran Desert scrub biotic community (Brown 1994; Brown and Lowe 1980). Elevation at the Project Area is approximately 1,340 feet above mean sea level. The Project Area is situated in an agricultural developed area, surrounded by agricultural fields (active and fallow) on three sides and suburban development on the northern side. Vegetation associated with the Lower Colorado River Valley Sonoran Desert scrub biotic community

includes primarily creosotebush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), ironwood (*Olneya tesota*), smoke tree (*Psorothamnus spinosus*), and chollas (NRCS 2006:106). Honey mesquite (*Prosopis glandulosa*), brittlebush (*Encelia farinosa*), tamarisk (*Tamarix* sp.), desert broom (*Bacccharis sarothroides*), desert willow (*Chilopsis linearis*), and Russian thistle (*Salsola tragus*) can also be found to a lesser degree. Wildlife near the Project Area includes coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), and several bird species including white-winged dove (*Zenaida asiatica*), Say's phoebe (*Sayornis saya*), common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), common grackle (*Quiscalus quiscula*), American kestrel (*Falco sparverius*), Eurasian collared dove (*Streptopelia decaocto*), European starling (*Sturnus vulgaris*), hummingbird, mourning dove (*Zenaida macroura*), turkey vulture (*Cathartes aura*), Gambel's quail (*Callipepla gambelii*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), and greater roadrunner (*Geococcyx californianus*).

3.0 CULTURE CONTEXT

3.1 Prehistory

The generally accepted cultural history of the Project Area shows that human utilization of Southern Arizona spans the last 11,500 years. Nine main chronological periods (Paleo-Indian, Archaic, Early Formative, Pioneer, Colonial, Sedentary, Classic, Protohistoric, and Historic) have been archaeologically recognized, and each is characterized by different social and cultural attributes. More detailed overviews can be found in Bayman 2001; Berry and Marmaduke 1982; Bilsbarrow and Palus 1997; Bronitsky and Merritt 1986; Craig and Hackbarth 1997; Crown and Judge 1991; Deaver and Altschul 1994; Fish 1989; Fish and Fish 2008; Gilpin and Phillips 1998; Gumerman 1991; Haynes 1986; Janus 1989; Marmaduke 1993; Myrick 1980; Russell 1975; Spier 1970; Whittlesey et al. 1994; Wright 2002; and Wright et al. 2002.

Paleoindian Period

The Paleoindian period, approximately 10,000 to 8,500 B.C., is characterized by small, nomadic bands that followed megafauna and gathered wild plants. Sites from this period have been documented in southern Arizona (Cordell 1997; Haury 1950; Haynes 1986; Huckell 1984a).

The subsistence practices of early hunter-gatherers changed approximately 10,000 to 8000 B.C. with the extinction of large game, concomitant with the environmental changes associated with the Pleistocene/Holocene climatic transition (Guthrie 2006; Martin 1967). The overall lifestyle of the early hunter-gatherers continued into the Archaic period (ca. 8000 to 200 B.C.), but increased aridity during the early- to mid-Holocene brought about a change in the occurrence of plant species in the Southwest (Van Devender et al. 1987). Many of these drought-tolerant plants, such as mesquite, palo verde, and screwbean pods; saguaro and other cactus fruits; and agave, were exploited by prehistoric peoples. These plants provided a protein-rich food source that supplemented the Archaic diet of small game.

Evidence of occupation during the Paleo-Indian period (ca. 10,000–8,500 B.C.) and Early Archaic periods (ca. 8,500–5000 B.C.) has been elusive in the middle Gila River area (Huckell 1984a, 1984b).

Archaic Period

The Early Archaic period, approximately 7500 to 5000 B.C., is characterized by a hunting and gathering lifestyle, similar to the preceding Paleoindian period. A major difference however was a climatic drying and warming trend leading to desert conditions, and the disappearance of Pleistocene big game, through natural or human agents. Hunting focused on modern game animals and gathering focused on seasonally available resources, with Archaic groups maintaining a significant degree of residential mobility. As the Archaic period progressed (Middle Archaic, ca. 5000 to 2000 B.C.), some populations began to

experiment with encouraged plants. Various wild plant resources were encouraged through selective planting or reseeding, weeding of competitor species, and supplemental watering. Seasonal rounds were generally maintained, with encouraged plant stands being revisited during harvest time. Tools identified during the Archaic period such as metates, manos, and mortars demonstrate a significant focus on processing wild plant foods. Small seasonally occupied villages were present, but larger more permanent villages did not develop until the Late Archaic period.

The Late Archaic, (approximately 2000 B.C. to A.D. 1), is a period which was characterized by an increasingly sedentary lifestyle although group mobility was still maintained to varying degrees. Encouraged plants began to give way to small-scale horticulture, especially with the introduction of domestic cultigens. Maintaining small fields and crops encouraged increased sedentism, and Late Archaic populations along floodplains and alluvial fans began to assemble into permanent villages. Sites of this type are known from the Tucson Basin, Casa Grande, and the Phoenix areas. Experimentation with domestic cultigens from Mexico appeared first in the Tucson Basin (corn circa. 1700 to 1200 B.C.), which is located closer to the source area for these cultigens. Late Archaic villages are deeply buried under alluvium because of their location on floodplains and alluvial fans.

The first definitive evidence of human habitation along the middle Gila River dates to the Middle Archaic period. Recent work (Bubemyre et al. 1998; Neily et al. 1999; Woodson and Davis 2001) has documented Middle Archaic period sites, and numerous surface finds of projectile points which suggest the widespread human use of the Phoenix Basin then (Loendorf and Rice 2004). Beginning around 1500 B.C., during the Late Archaic period, the first agricultural villages were established in the Sonoran Desert, mainly in southern Arizona (Diehl 2003; Mabry 1998; Matson 1991; Silva 2003). Comparable pre-ceramic, semi-sedentary horticultural settlements have not been identified in the middle Gila Valley.

The succeeding Early Ceramic period (approximately A.D. 1–550), is characterized by small seasonally occupied hamlets, and more-widespread use of plain ware pottery in the region. Pottery then was not as widely used as in the later Hohokam occupations however, and the range of types produced was comparatively limited (Garraty 2011; Whittlesey and Ciolek-Torrello 1996). Current evidence suggests that specialized pottery production began by around A.D. 450 along in the vicinity of South Mountain (Abbott 2009).

Hohokam

Garraty (2013) summaries the Hohokam as many antecedents of Hohokam cultural attributes that imply in situ development of Hohokam society from earlier, Archaic period populations (Bayman 2001; Cable and Doyel 1987; Doyel 1991; Wallace 1997; Wallace et al. 1995; Wilcox 1979). The Hohokam tradition initially appeared in the Phoenix Basin and was characterized by the development of large-scale irrigation agriculture, red-on-buff pottery, a distinctive iconography, exotic ornaments and artifacts, a cremation mortuary complex, and larger as well as more complex settlements (Fish 1989; Howard 2006).The Hohokam sequence begins with the Pioneer period (ca. A.D. 55-/650–700), which is marked by the introduction of decorated pottery (Ciolek-Torrello 1995; Wallace et al. 1995; Whittlesey 1995). Over the next five centuries, residents the middle Gila River valley manufactured decorated pottery on a large scale and supplied it throughout the Phoenix Basin, including the Salt River valley to the north (Abbott 2009).

Pioneer Period

The first period of Hohokam development involves a transition in local populations, rather than the influx of peoples from Mesoamerica as some had previously believed. During the transition from the Late Archaic to the Pioneer period, populations slowly began to shift their subsistence strategy to focus on a more sedentary, agriculture-dependent way of life. Hunting and gathering available wild foods remained important, but the Hohokam developed a complex water control system that made irrigation agriculture possible. Ceramics first appeared during this period as plainware utilitarian items, which through time expanded to include many types of decorated wares including: redwares, red-on-gray, and red-on-buff. The Snaketown phase, at the end of the Pioneer period, saw several changes which indicated a growing population, increased trade contacts, and growing complexity: more diverse ceramic vessel forms and designs; expansion of irrigation systems; the presence of ceramic figurines, slate palettes, carved stone bowls, and other ritual and ceremonial items; presence of shell from the Gulf of California; and trade goods from Mesoamerica and the Mogollon rim area.

Colonial Period

During this period, the number, size, type, and complexity of Hohokam sites in the area increased. Pithouses within villages tended to cluster in courtyard groups, probably occupied by extended families, which opened onto communal plaza areas. Numerous large villages contained ballcourts, which are posited to be related to the Mesoamerican game. These ballcourts probably served as a focus for community integration, where peoples from smaller surrounding hamlets would come to trade, renew kinship ties, and take part in various community activities. Smaller villages and subsistence-related sites were increasingly established during this period. Exotic trade items such as macaws and copper bells from Mesoamerica often overshadow continuing trade with Mogollon Rim and Colorado Plateau populations. By the end of the Colonial period, Hohokam sites were established throughout central and southern Arizona in a variety of environmental settings.

Sedentary Period

Throughout this period, patterns established during the preceding Colonial period were intensified. Economic complexity increased with certain villages specializing in particular crafts. In addition, a possible hierarchical distinction between sites, especially those along shared canal systems, is indicated. Platform mounds began to be constructed during this period and appear to have served as a type of public architecture possibly associated with hierarchical divisions within villages, with ceremonial activities, or both. As the ballcourt slowly began to go out of use, the focus of community activities began to switch to the platform mound. There are few changes to Hohokam material culture during this time with the exception of the beginnings of platform mounds, adobe/jacal surface structures, and redware.

Classic Period

Unlike the previous period which saw few changes, most familiar Hohokam traits disappeared or underwent radical changes during this period. Many large villages were abandoned, although, several grew as outlying populations and groups in smaller settlements aggregated with existing communities (or formed new communities) along major watercourses. Pithouses disappeared almost completely and were replaced by surface structures of adobe and masonry, which were often organized into roomblocks, then compounds with the addition of enclosing walls. Platform mounds effectively replaced ballcourts as the focus of community activities. Red-on-buff pottery was replaced by red and polychrome wares. Treatment of the dead changed: inhumation became common while cremation declined. Trade patterns

shifted from a Mesoamerican focus to a more northern and eastern focus. As the trade patterns shifted to the north and east, architectural and material culture traits of the Classic period Hohokam were being derived from contact with populations in that region of eastern Arizona and western New Mexico—the Salado culture. The reorganization of Classic period Hohokam architectural and material culture styles into styles that more closely resembled the Salado indicated increased regional interaction between the two groups. In the past it was believed to represent an invasion by Salado peoples, but this is no longer thought to be the case.

There may also be a late/post-Classic Hohokam occupation known as the Polvoron phase. The existence of the phase is still a matter of debate, as well as how it fits into the generally accepted Hohokam chronology. It may extend Hohokam culture into the 16th century, or it may merely represent the end of the Hohokam sequence around A.D. 1450 to 1500. This phase is defined in the archaeological record by the reoccupation of late Classic structures, a return to pithouses, and the end of inhumation burial.

3.2 Protohistoric/History

The Protohistoric period (ca. A.D. 1500–1700) is generally defined as the interval between the end of the Hohokam Classic period and the earliest evidence of Spanish contact (Wells 2006; Whittlesey et al. 1998:185). Unfortunately, archaeological evidence of Protohistoric period occupation has been elusive in southern Arizona, and few archaeological sites in the Project Area can be firmly assigned to this time span. Although the relationship between the late Prehistoric inhabitants of the Middle Gila (also known archaeologically as the "Hohokam") and the Pima has been greatly debated, recent evidence has been published that adds multiple lines of evidence to support the Pima oral traditions regarding their past connection and continuous relationship to the "Hohokam". Loendorf et al. (2013) provided extensive data from the large village site of Sacate, which has been continuously occupied prior to A.D. 1600. These data provided additional supporting statements for cultural continuity between the Hohokam and the Akimel O'odham. Together with the ethnohistoric and ethnographic data, data were collected for ancillary studies for obsidian sourcing, projectile point typology, ceramic typology, architectural design, and subsistence practices that support a continuous relationship to the Hohokam.

The Protohistoric period also saw reoccupation of several prehistoric sites by the Maricopa, Kohatk, or Pima, as well as the development of new settlements. The Jesuit missionary, Father Eusebio Francisco Kino was the first Spanish explorer to provide written accounts of the Gila River area. He was assigned to missionize in the Pimeria Alta (Land of Upper Pimas), a region that today includes northern Mexico and southern Arizona. During Kino’s travels, he established many visitas and a few missions from the modern international border to the Gila River region. In addition, his explorations served as an important first step toward an overland route between Sonora, the Pima villages of the Gila River, and settlements along the California coast. Kino visited villages along the Gila River at least six times between 1691 and 1702. During his journeys, Kino mapped and described Pima villages and his interactions with various groups. Kino does not describe irrigation agriculture, so it is suspected that local populations subsisted by floodwater agriculture, hunting, and gathering. By 1744 however, the Pima were growing wheat with irrigation agriculture, and by 1775 irrigated wheat was a major crop in most Pima villages. Throughout the 1700s, the Spanish continued to expand the mission system in southern Arizona and continued to introduce non-native crops, animals, trade goods, religion, and culture.

The Historic period in Arizona dates roughly from 1753 to 1954. The 1753 date was chosen as it represents the founding of the first permanent Spanish settlement in Arizona. Dates of Protohistoric and Historic periods can differ across Arizona, usually based on dates of contact with Europeans and dates of

permanent settlement by Europeans. For the purposes of this study, the aforementioned dates will be used.

According to the National Parks Service, the year 1775 marks the year Juan Bautista de Anza (Anza) successfully opened an overland route of emigration and supply from Sonora to the missions and settlements of Alta California. The 198 soldiers and families that Anza escorted brought with them on their 1,200-mile trek their language, traditions, and diverse New World Hispanic culture. The backgrounds of all soldiers and settlers were carefully recorded as español, mulato, or mestizo. Almost all the expedition members were born on this continent and had mixed European, African or Indian parentage. These influences changed the lives of the indigenous peoples and shaped the development of Arizona and California. The route Anza opened supplied the settlements of Alta California long enough for them to become established. In 1781, the Yumas revolted against Spanish rule and closed the route during the rest of the colonial period. In later years, Anza's trail served the military, settlers, cattlemen, forty-niners and other desert travelers.

The Mexican War of Independence did not have a direct effect on the area, as most of the battles took place far south of southern Arizona. However, the Spanish did have to withdraw their troops to central Mexico, which left a vacuum that the Apache exploited. During the 1820s, Apache raiders were estimated to have killed approximately 5,000 people in Sonora and southern Arizona. Mexico was victorious in the war and declared independence in 1821. The new Mexican government abolished the mission system. In Arizona, settlements and occupation contracted to Tucson and Tubac. In response to increased Apache raiding, Piman settlement also contracted south and west. During the Mexican (1821 to 1853) and subsequent American occupations, Pima wheat production increased dramatically, as a result the Pima sold excess crop to settlers and travelers using the Gila Trail. The land in Arizona located north of the Gila River became part of the United States in 1848, although the American phase did not officially begin until 1853, when this area was sold to the United States by Mexico as part of the Gadsden Purchase. American fur trappers and traders began working the Gila River in 1825 (the American phase dates from 1853 to present). During the Mexican-American War, American military forces passed through southern Arizona on their way to California, commonly using routes centered on the Santa Cruz and Gila rivers. These routes were well blazed by the Army, and increased use occurred after the end of the war. One specific route, the Gila Trail, was by this time a widely used mail, freight, and emigrant route. At the close of the American Civil War, settlement in the Gila River valley increased dramatically. This was due in part to the American Army's attempts to pacify the Apache. Arizona was first included as part of the Territory of New Mexico, and then the Territory of Arizona, and officially received American statehood in 1912.

3.2.1 Settlement

After the Civil War, Americans began to settle permanently along the Gila River because of the availability of good agricultural lands. Agricultural activities by American settlers along the Middle Gila and further upstream caused an insufficient supply of water for Pima farmers. By 1872, the water reaching Pima crops was so limited that some Pima Indians relocated to the Salt River valley. However, this is not the only reason the Pima moved. Commercial pursuits in the growing Phoenix-Mesa-Lehi area, land and water availability, and the Anglo desire for a buffer between themselves and the raiding activities of the Apache also served as agents to pull the Pima Indians from the Gila River valley to the Salt River valley. Settlers came not only from the east to settle within Arizona's agricultural lands, and rich mining districts, but also from Utah (Bancroft 1889; Ezell and Fontana 1994; Piremen 1982). Mormon settlers established towns in northern and eastern Arizona, and into northern Mexico. Some of the largest areas of Mormon

settlement are the modern Mesa and Safford areas, although significant settlement also took place along the Little Colorado and San Pedro Rivers. From 1880 to 1900, the population of southern Arizona doubled, and by the turn of the century, Arizona had a population of 100,000. Many communities were established. The major town centers within the Project Area are discussed below. Arizona went on to become a major producer of cotton and copper, although these industries have had their ups and downs. Agriculture tends to remain as the major economic focus within the Project Area. The 20th century saw the transformation of significant portions of Arizona into military installations. Prisoner of war camps (Canal Camp and Butte Camp) where established in proximity to the communities of Florence and Queen Creek and along the Gila River between 1942 and 1945 (Iritani 1994).

Mesa

The City of Mesa is located approximately 20 miles east of Phoenix and was originally founded by Mormon pioneers in the 1870s. Daniel Webster Jones arrived at Lehi, what is now the northern edge of present-day Mesa. When a second group of Mormons arrived from Utah and Idaho, they moved to the top of the mesa that gives the city its name (City of Mesa 2014: Ch. 2; Zafra 2000). Mesa City was registered on July 17th, 1878 on a one-square-mile townsite, and the town was incorporated in 1883. As canals were constructed, and widened, the town eventually became a strong agriculture center. Dr. A.J. Chandler, the same man who would later start the city bearing his name south of Mesa, enlarged the Mesa Canal with heavy machinery in 1895. He also built the first office complex in Mesa, on the northwest corner of Main and MacDonald, using the first evaporative air-cooling system in Arizona (Zafra 2000). In addition, he started an electric power plant, thus allowing the City of Mesa to purchase the utility company in 1917 and becoming one of the few cities in Arizona to own utilities. These utility earnings enabled Mesa to pay for capital expenditures without bonds until the 1960s. It also provided the shared funds that allowed construction and service projects to be implemented during the Works Progress Administration during the Depression (Zafra 2000). Falcon Field and Williams Field were opened in the 1940s bringing in military personnel and their families. Until 1960, about half of the residents earned their living in agriculture (Zafra 2000). Today, Mesa is the third largest city in Arizona with about 508,958 residents (US Census 2018).

Morrison Ranch

For more than 80 years the Morrison Family has been growing cotton, corn, and alfalfa and producing milk at its dairy on its 3,000-acre farm (http://www.morrisonranch.com/history.html). A portion of the farm includes the Project APE.

3.2.2 Railroad History

Southern Pacific Railroad

After the close of the Civil War, a southern railroad route along the now defunct Butterfield Stage Route was being explored as an option to move goods and people across the country in a timely fashion. The Southern Pacific Railroad Company (SPRR) was to lay track from San Francisco to Yuma, while the Texas and Pacific Railroad Company (T&PRR) was to lay track westward across Texas, New Mexico, and Arizona to meet with the SPRR at Yuma. As the SPRR reached the Arizona border, the T&PRR was stalled in the vicinity of Fort Worth, Texas, nowhere near the interconnection point at Yuma. Having no authority to continue into Arizona, the SPRR courted the U.S. Congress, but failed to receive approval. The SPRR then turned to the territorial legislatures of Arizona and New Mexico and received approval to continue laying track eastward. The economy and settlement of southern Arizona quickly changed as

it was now reliably connected to the rest of the country. The Wellton-Phoenix-Mesa-Eloy segment of the transcontinental Sunset Route of the SPRR was constructed in 1926, and spurs off of the mainline in Wellton and travels through Phoenix, Tempe, Mesa, Gilbert, and Coolidge before rejoining the mainline at Eloy (Janus 1989). The Mesa to Winkelman segment of the Sunset Route of the SPRR began in 1903, and its primary function was the transportation of mining product (Kearns et al. 2001). The SPRR was taken over by the UPRR in 1997 (Union Pacific Railroad 2006).

4.0 BACKGROUND RESEARCH AND PROJECT METHODOLOGY

An official record search was conducted by ASM for cultural resources in June 2019. The Bureau of Land Management (BLM) General Land Office (GLO) online survey plats, and historic aerials and topographic maps were also reviewed. Archival and historical site files and inventories were checked at each of these sources. The parameters of the record search included the entire APE and a one-mile radius for previous surveys and sites.

The results of the background research indicate that ten previous cultural resources studies were conducted, and one archaeological site was previously recorded within a one-mile radius of the Project Area. No sites are directly within the APE. BLM GLO Survey Plats for Township 1 South, Range 7 East showed that Donald F. Swift acquired an 160-acre parcel in the SE ¼ of Section 7 (the APE) on August 10, 1921 under the Homestead Act of 1862 (**Table 1, Figure 3**). GLO Map 1398, filed in December 1870, shows no historic-period roads or features within the Salt River Project Agricultural Improvement and Power District (SRP) Project Area (GLO 1870).

GLO Map 1397, filed in March 1913, shows a telephone line running northwest-southeast approximately a mile to the north of the APE in Sections 9 and 10. This feature also appears on modern United States Geological Survey (USGS) maps but has not been formally recorded as an archaeological site (GLO 1913). One road is present to the west of the APE in Section 7 (GLO 1913) and may now be represented in part by the Roosevelt Canal road.

The Morrison Ranch has been farming for the last 80 years in Mesa, Arizona and this SE quarter of Section 7 is part of their farming enterprise (http://www.morrisonranch.com/history.html).

Table 1. Bureau of Land Management General Land Office Search Results – T1S/R7E

BLM Serial No.	Name	Issue Date	Acres	Document	Sect/Block	Authority
AZPHX 0041464	Donald F Swift	8/10/1921	160	041464	7/ SE ¼	May 20, 1862: Homestead Entry Original (12 Stat. 392)

The 1904 version of the *Desert View, Az.* USGS Map (1/62,500) was reviewed for historic features in the APE. The map showed no features in the APE.

The 1956 version of the *Higley, Az.* USGS Map (1/24,000), reprinted in 1959, was reviewed for historic features in the APE. The map shows structures at East Posada Avenue and South Sossaman Road and unimproved farm roads in the APE. These features have not been formally recorded. In addition, irrigation canals are present on the southern boundary of the APE.

4.1 Previous Cultural Resources Surveys

The literature review and ASM records search showed that ten Class III cultural surveys were previously conducted within a one-mile radius of the APE (**Table 2, Figure 4**). According to ASM records, none of the APE has been previously surveyed for cultural resources (**Figure 4**).

4.2 Previously Recorded Archaeological Sites

The background research showed that one archaeological site (AZ U:10:111[ASM] was previously recorded within one mile of the APE during the Hackbarth (1996) survey for the Sunbelt Holdings Guadalupe and Hawes Road Development (**Table 2, Figure 4**). There are no previously recorded sites within the APE; however, the Roosevelt Water Conservation District Canal is located adjacent to the APE to the west. The canal has been determined eligible to the NRHP under Criterion A (SWCA 2016) but changes to Arizona Antiquities Act, Policy 8-205(B) will not require an update to its site record.

4.2.1 AZ U:10:111(ASM)

AZ U:10:111(ASM) was originally recorded by Hackbarth (1996) as the Hawes Road Ranches. The site was recorded as a 1950s farm or ranch residence that included structural remains (two house foundations, two wells, and one outbuilding) and a low-density historical artifact scatter (glass, bottles, and cans). Hackbarth (1996) recommended the site not eligible for listing in the NRHP.

Table 2. Previous Cultural Resources Surveys within One Mile of APE

ASM Number	Author/Year	Report Title or Project Description	Sites Within APE
1986-0238	Bruder and Rogge 1987	*Cultural Resources Technical Report for the Southeast Loop Highway. Dames & Moore, Phoenix.*	No
1994-0310	Punzmann 1994	*Archaeological Survey of the Gilbert Junior High No. 4 Site and Adjoining Transportation Facility Site, Mesa, Maricopa County, Arizona.*	No
1995-0155	Stubing and Mitchell 1995	*An Archaeological Survey Along Guadalupe Road, Between Power Road and Hawes Road, Maricopa County, Arizona. SWCA Cultural Resources Report # 95-24.*	No
1996-0120	Hackbarth 1996	*Archaeological Survey of the Proposed Sunbelt Holdings, Inc. Guadalupe and Hawes Road Development, Maricopa County, Arizona.*	One-Mile Buffer
1998-0401	Garcia and Lewenstein 1998	*Cultural Resources Survey for the Power Road (Guadalupe Road to Baseline Road) Improvement Project, Maricopa County, Arizona. Dames & Moore, Phoenix.*	No
2000-0269	DeMaagd 2000	*Cultural Resources Survey for the Elliot District Park at Roadrunner and Elliot Roads, Gilbert, Maricopa County, Arizona. Archaeological Consulting Services, Ltd., Tempe.*	No
2002-0265	Touchin, Palmer, and Brodbeck 2002	*A Class III Cultural Resources Survey for the Roosevelt Water Conservation District (RWCD) Second Pipeline Project, Maricopa and Pinal Counties, Arizona. Cultural Resource Report 02-09, HDR Engineering, Inc., Phoenix.*	No
2002-0386	Schmidt and Mitchell 2002	*An Archaeological Survey of the Potomac Tower #AZ0359A in Mesa, Maricopa County, Arizona. SWCA Cultural Resources Report No. 02-431.*	No

Table 2. Previous Cultural Resources Surveys within One Mile of APE			
ASM Number	**Author/Year**	**Report Title or Project Description**	**Sites Within APE**
2003-1278	Goldstein 2003	*A Cultural Resources Survey of Approximately 0.04 Acres of State of Arizona Land on the Campus of Liberty School, Mesa, Maricopa County, Arizona.*	No
2004-0508	Clark 2004	*An Archaeological Survey at the Power Road - Monterey Avenue Intersection, Mesa, Maricopa County, Arizona.*	No

5.0 RECORDS REVIEW RESULTS

5.1 Arizona Register Evaluation

The National Historic Preservation Act of 1966 did not publish their guidelines for "How to Apply the National Register Criteria for Evaluation" until 1990 (NPS 1990). In the meantime, the Arizona State Legislature passed ARS §41-511 in 1974 and this established the ARHP (Arizona Register). This is a process that allows for the inclusion of properties that had historic significance in Arizona, but not enough significance to qualify them for the NRHP. The criteria of eligibility for the ARHP are the same as those for the NRHP

Established by Rule and appearing in the Administrative Code R12-8-206 as follows: "The quality of significance in Arizona history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

1. That are associated with events that have made a significant contribution to the broad patterns of our history (Criterion A): or
2. That are associated with the lives of significant persons in our past (Criterion B); or
3. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); or
4. That yields, or may be likely to yield, important information related to prehistory or history (Criterion D).
5. Generally properties must be 50 years or older to be considered eligible for the Arizona Register of Historic Places. Properties that are less than 50 years old may be considered eligible under circumstances where they are an integral part of a district which is 50 years or older and meets eligibility criteria or the property has exceptional importance."

5.2 Historic Properties within the Search Area

No historic properties have been previously identified within the APE; however, one site, the Roosevelt Water Conservation District Canal, was determined eligible for the NRHP and is located adjacent to the APE to the west. As this linear site is still in use, policy changes to the Arizona Antiquity Act (Policy 8-205[B]) will not require an update to its site record.

6.0 SUMMARY AND RECOMMENDATIONS

A cultural resources records and literature review was conducted for KPE in June 2019 by ASM. The review was completed in advance of the proposed Project. The purpose of the investigation was to identify previously recorded cultural resources, which may include archaeological sites (prehistoric or historic), structures, buildings, landscapes, districts, or objects for their respective eligibility for listing on the NRHP within the APE.

The result of the cultural resources records search and literature review shows that the APE has not been previously surveyed for archaeological resources and no known historic properties are located within the APE; however, there are unrecorded historical features in the APE. Ten previous archaeological investigations have been conducted within one mile of the APE, and two previously recorded site, AZ U:10:111(ASM), was located within the one-mile buffer; however, AZ U:10:111(ASM) has been recommended not eligible for the NRHP (Hackbarth 1996) and has since been developed and replaced with modern homes. The second site, the Roosevelt Water Conservation District Canal, has been determined eligible for the NRHP under Criterion A and is located adjacent to the APE to the west. While policy changes to the Arizona Antiquity Act (Policy 8-205[B]) will not require an update to its site record, it is management's recommendation that there is sufficient space between the Project Area and the Historic Property as to not affect the integrity of the site.

The Applicant will conduct a Class III pedestrian inventory survey of the entire Project Area prior to construction.

6.1 Additional Recommendations

If previously unidentified cultural resources should be discovered during construction, the contractor must stop work immediately and take all reasonable steps to secure the preservation of those resources. ASM should be notified to make arrangements for the appropriate assessment and treatment of those resources. If any human remains or funerary objects are unexpectedly discovered, they should be reported to the director of the ASM in accordance with A.R.S. § 41-865.

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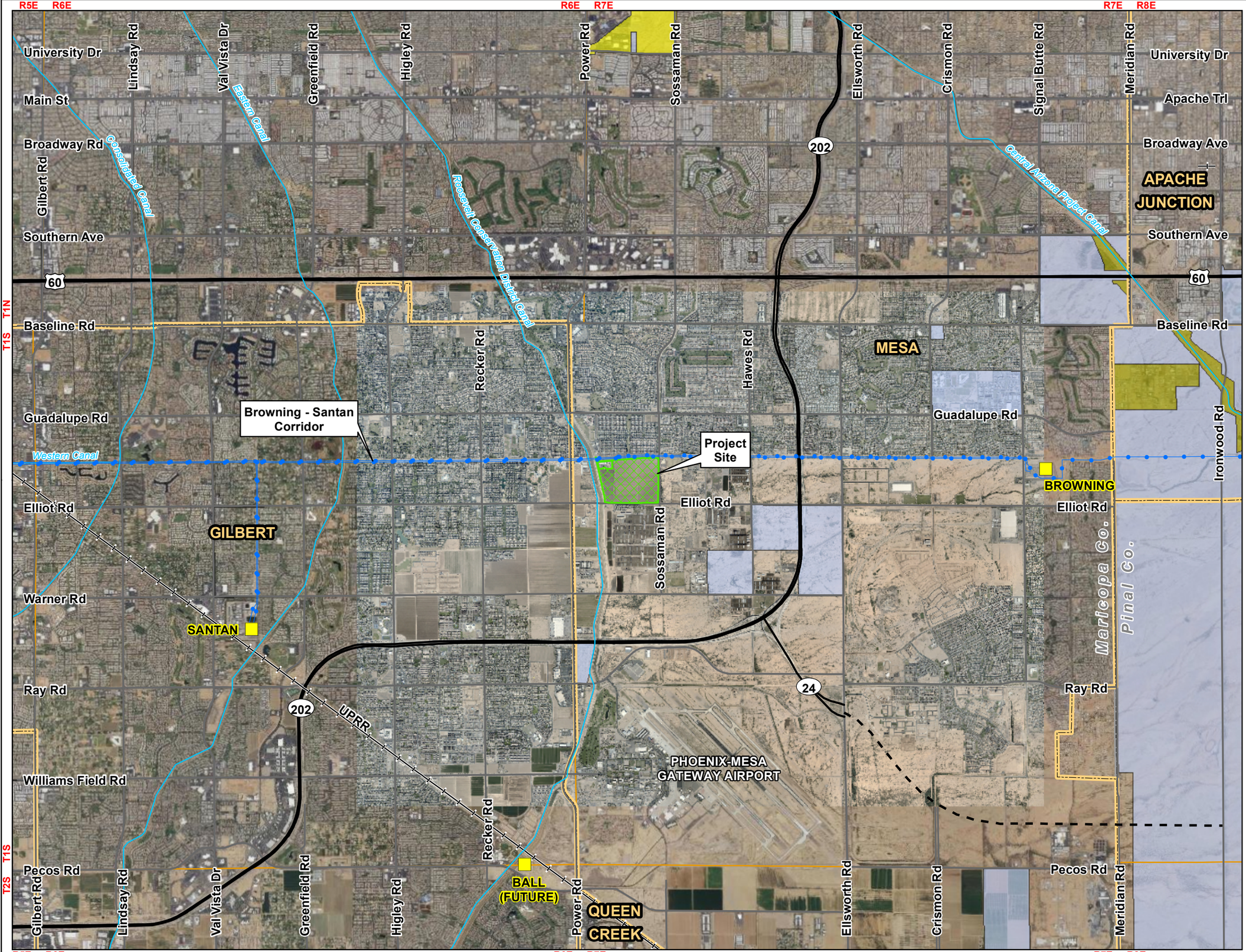
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APPENDIX A

Figures



Legend

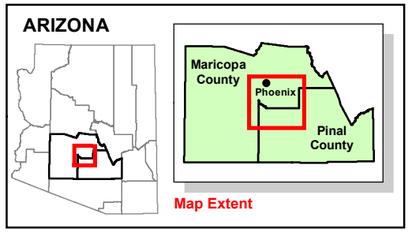
- Existing / Future Substation
- Existing Transmission Line
- US Route or State Highway
- Future State Highway 24
- Major Road
- Railroad
- Canal
- Municipal Boundary
- Township / Range Boundary
- Project Site

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land

0 0.5 1 1.5 2
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP. Town of Gilbert, USGS.

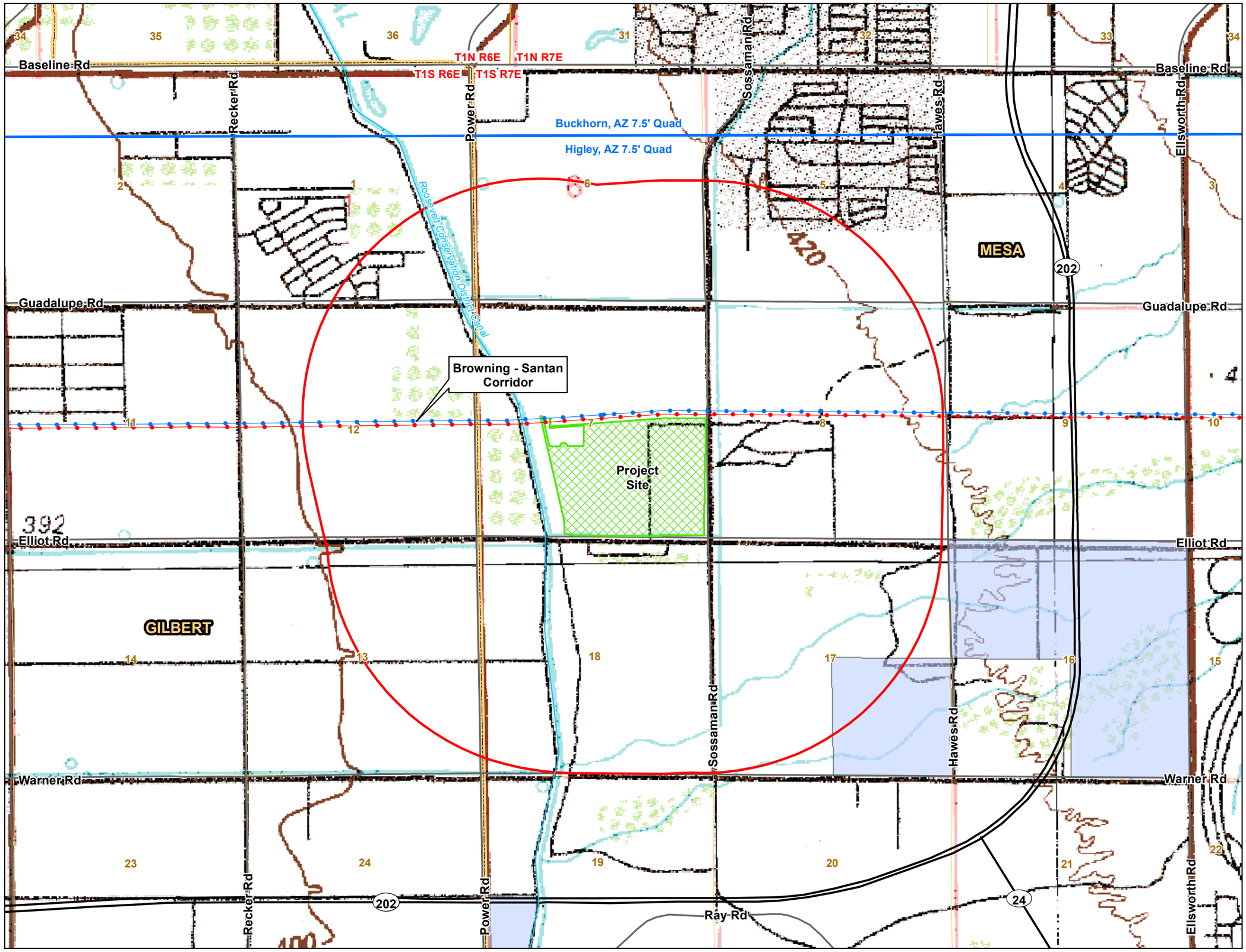


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PROJECT RED HAWK
FIGURE 1 REGIONAL OVERVIEW

Map Extent: Maricopa & Pinal Counties, AZ

Date: 9.03.19		Author: sjw



Legend

- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- State Highway
- Major Road
- Canal
- Municipal Boundary
- USGS 7.5' Quad Boundary
- Township / Range Boundary
- Section Boundary

Project Components

- Project Site
- 1-Mile Buffer of Project Site

Jurisdictional Land Ownership

- State Land

0 0.25 0.5 0.75 1
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

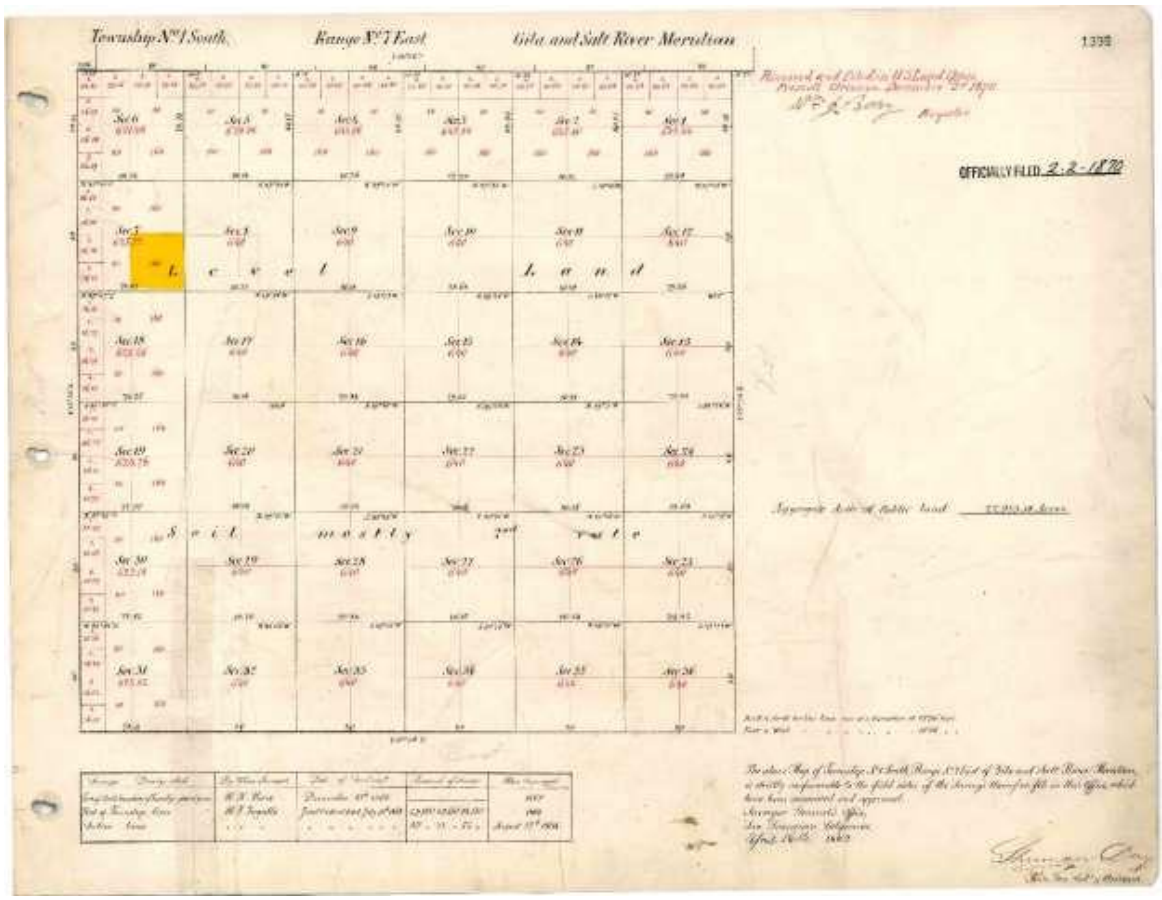
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PROJECT RED HAWK
FIGURE 2 PROJECT LOCATION

Map Extent: Maricopa County, AZ

Date: 9.03.19		Author: sjw

Figure 3: GLO Original Plat Maps



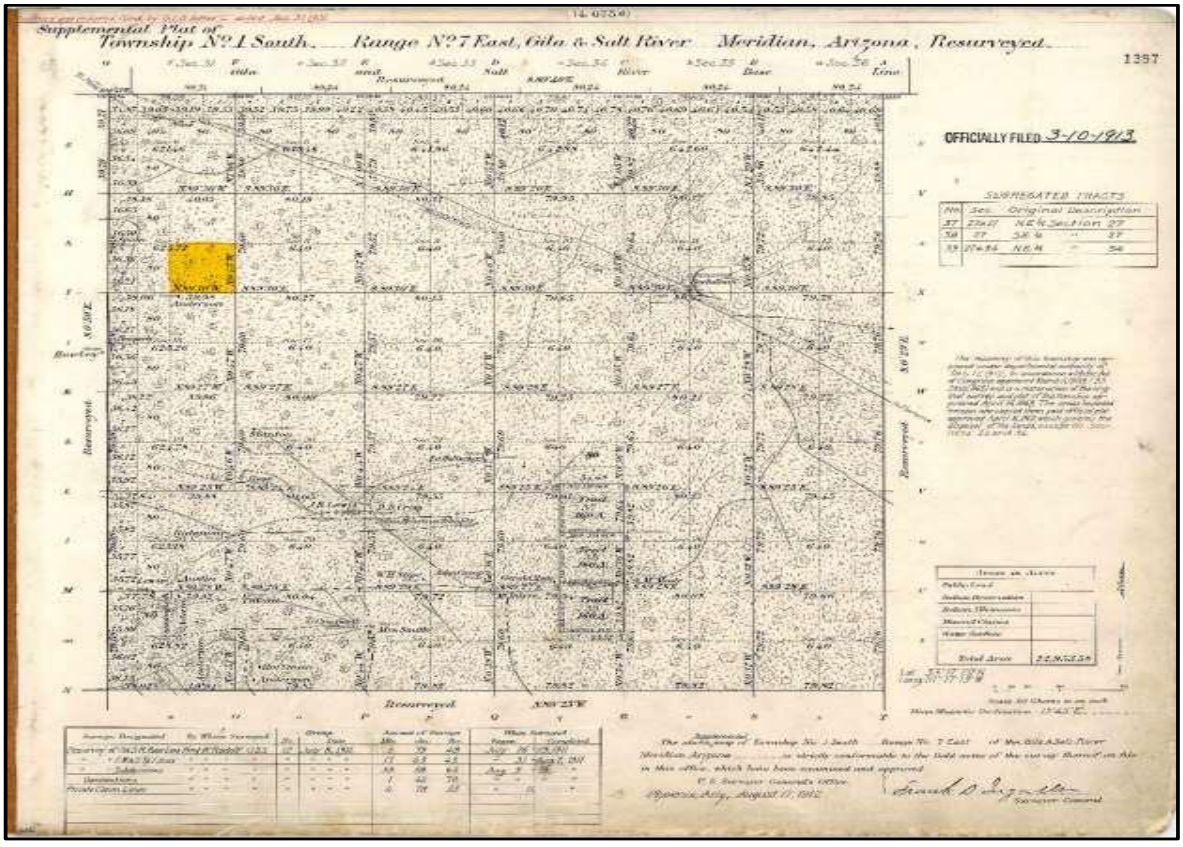


EXHIBIT E-2
TRIBAL CORRESPONDENCE

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September 23, 2019

Mr. Robert Miguel, Chairman,
Ak-Chin Indian Community
42507 W. Peters & Nall Rd
Maricopa, AZ 85138

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Miguel,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

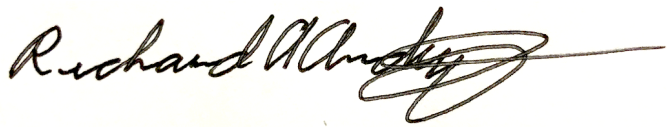
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SRP would greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to my attention with details below:

Richard A. Anduze
Senior Environmental Compliance Scientist
SRP | Biological and Cultural Resource Services | PAB359
P.O. Box 52025, Phoenix, AZ 85072-2025
P: (602) 236-2804 | F: (602) 236-6690 | M: 602-818-2188
rick.anduze@srpnet.com

Your letter will be included as part of the Project record that is filed with the Arizona Corporation Commission. If you have any further questions or would like to discuss this document, please do not hesitate to contact me.

Sincerely,



Richard A. Anduze
Senior Environmental Compliance Scientist

Email copy of the letter, no enclosures included
RMiguel@ak-chin.nsn.us

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September 23, 2019

Ms. Elaine Peters
Director, Him Dak Eco-Museum
Ak-Chin Indian Community
42507 W. Peters & Nall Rd
Maricopa, AZ 85138

RE: Consultation for the Proposed Project Red Hawk

Dear Ms. Peters,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

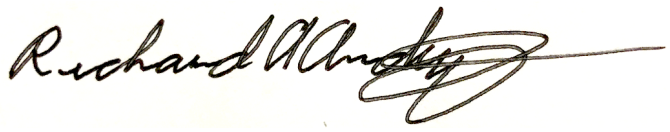
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Sincerely,



Richard A. Anduze
Senior Environmental Compliance Scientist

Enclosures attached

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September 23, 2019

Mr. Jefford Francisco and Mr. Peter Steere
Tohono O'odham Nation
Cultural Affairs Office
P.O. Box 837
Sells, AZ 85634

RE: Consultation for the Proposed Project Red Hawk

Dear Messrs. Steere and Francisco:

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

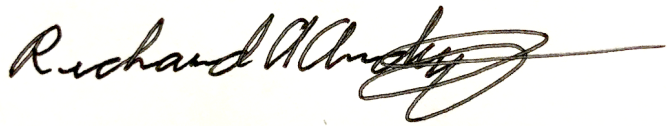
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rick.anduze@srpnet.com

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Sincerely,



Richard A. Anduze
Senior Environmental Compliance Scientist

Enclosures attached

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www.srpnet.com

September 23, 2019

Mr. Val Panteah, Sr.
Governor
Pueblo of Zuni
P.O. Box 339
Zuni, NM 87327

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Panteah,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

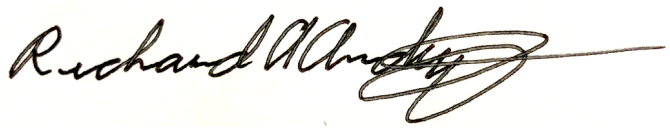
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Senior Environmental Compliance Scientist

No Enclosures Included

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Phoenix, AZ 85072-2025
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September 23, 2019

Mr. Kurt Dongoske
Tribal Historic Preservation Officer
Pueblo of Zuni
P.O. Box 1149
Zuni, NM 87327

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Dongoske,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

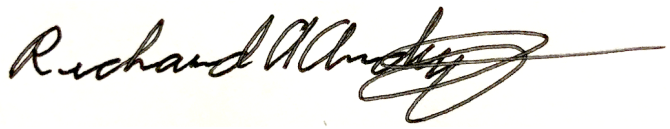
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Enclosures attached

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www.srpnet.com

September 23, 2019

Mrs. Bernadine Burnette
President
c/o Mark Frank
Fort McDowell Yavapai Nation
P.O. Box 17779
Fountain Hills, AZ 85269

RE: Consultation for the Proposed Project Red Hawk

Dear Mrs. Burnette,

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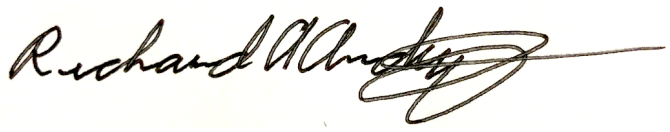
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SRP would greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to my attention with details below:

Richard A. Anduze
Senior Environmental Compliance Scientist
SRP | Biological and Cultural Resource Services | PAB359
P.O. Box 52025, Phoenix, AZ 85072-2025
P: (602) 236-2804 | F: (602) 236-6690 | M: 602-818-2188
rick.anduze@srpnet.com

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Sincerely,



Richard A. Anduze
Senior Environmental Compliance Scientist

Enclosures attached

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Phoenix, AZ 85072-2025
www.srpnet.com

September 23, 2019

Ms. Erika Calvin
Planning and Project Manager
Fort McDowell Yavapai Nation
P.O. Box 17779
Fountain Hills, AZ 85269

RE: Consultation for the Proposed Project Red Hawk

Dear Ms. Calvin,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

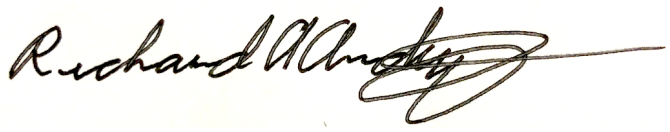
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Enclosures attached

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September 23, 2019

Mr. Albert Nelson
Cultural Coordinator
Fort McDowell Yavapai Nation
P.O. Box 17779
Fountain Hills, AZ 85269

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Frank,

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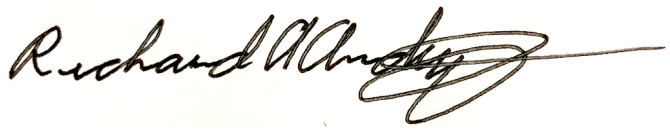
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Enclosures attached

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September 23, 2019

Mr. Stewart Koyiyumptewa
Tribal Historic Preservation Officer
Hopi Tribe Cultural Preservation Office
P.O. Box 123
Kykotsmovi, AZ 86039

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Koyiyumptewa,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

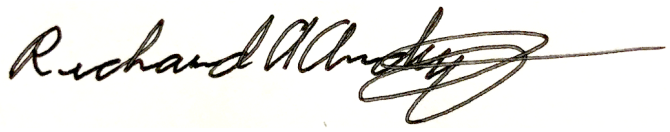
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Enclosures attached

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September 23, 2019

Mr. Robert Valencia
Chairman
Pascua Yaqui Tribe
7474 S. Camino de Oeste
Tucson, AZ 85746

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Valencia,

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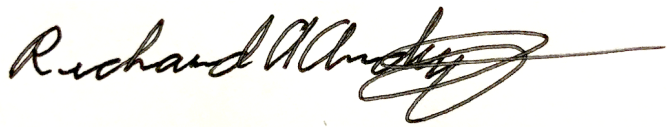
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No Enclosures Included

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Phoenix, AZ 85072-2025
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September 23, 2019

Mr. Karl A. Hoerig, Ph.D.
Tribal Historic Preservation Officer
Pascua Yaqui Tribe
7777 S. Camino Huivisim, Building C
Tucson, AZ 85757

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Hoerig, Ph.D,

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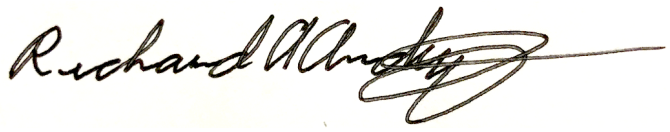
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Enclosures attached

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Phoenix, AZ 85072-2025
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September 23, 2019

Mr. Martin Havier
President
Salt River Pima-Maricopa Indian Community
10004 East Osborn Rd.
Scottsdale, AZ 85256-4019

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Havier,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

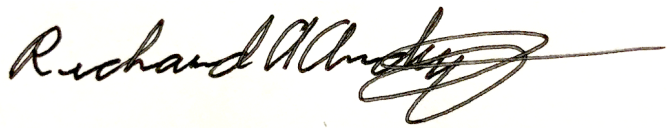
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No Enclosures Included

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September 23, 2019

Ms. Angela Garcia-Lewis and Martha Martinez
Cultural Preservation Compliance Supervisor
Salt River Pima-Maricopa Indian Community
10005 East Osborn Rd.
Scottsdale, AZ 85256-4019

RE: Consultation for the Proposed Project Red Hawk

Dear Ms. Garcia-Lewis,

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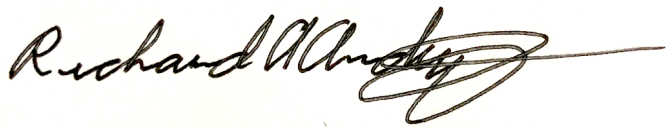
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Richard A. Anduze
Senior Environmental Compliance Scientist

Email cover letter and enclosures:
Angela.Garcia-Lewis@srpmic-nsn.gov and to Martha.Martinez@srpmic-nsn.gov

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Phoenix, AZ 85072-2025
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September 23, 2019

Cultural Resources Department
Cultural Preservation Program
Salt River Pima-Maricopa Indian Community
10005 East Osborn Rd.
Scottsdale, AZ 85256-4019

RE: Consultation for the Proposed Project Red Hawk

Cultural Resources Department,

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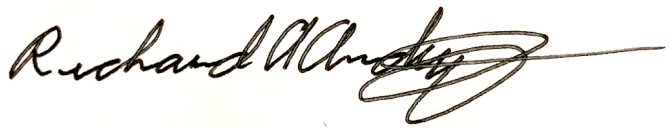
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Enclosures attached

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Phoenix, AZ 85072-2025
www.srpnet.com

September 23, 2019

Mr. Terry Rambler
Chairman
San Carlos Apache Tribe
P.O. Box 0
San Carlos, AZ 85550

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Rambler,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

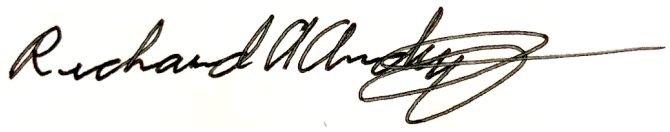
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SRP would greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to my attention with details below:

Richard A. Anduze
Senior Environmental Compliance Scientist
SRP | Biological and Cultural Resource Services | PAB359
P.O. Box 52025, Phoenix, AZ 85072-2025
P: (602) 236-2804 | F: (602) 236-6690 | M: 602-818-2188
rick.anduze@srpnet.com

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Sincerely,



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Senior Environmental Compliance Scientist

No enclosures included

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September 23, 2019

Ms. Vernelda Grant
Tribal Historic Preservation Officer
San Carlos Apache Tribe
P.O. Box 0
San Carlos, AZ 85550

RE: Consultation for the Proposed Project Red Hawk

Dear Ms. Grant,

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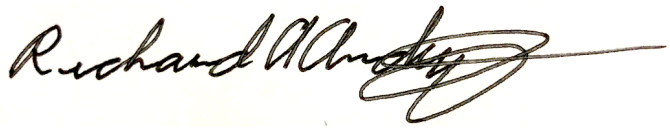
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Enclosures attached

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September 23, 2019

Ms. Jeri De Cola
Chairwoman
Tonto Apache Tribe
Tonto Apache Reservation #30
Payson, AZ 85541

RE: Consultation for the Proposed Project Red Hawk

Dear Ms. De Cola,

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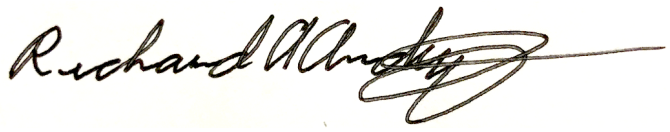
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Enclosures attached

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September 23, 2019

Mr. Wally Davis Jr.
Cultural & NAGPRA Representative
Tonto Apache Tribe
Tonto Apache Reservation #30
Payson, AZ 85541

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Davis Jr.,

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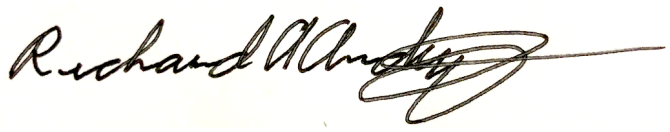
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Enclosures attached

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September 23, 2019

Ms. Gwendena Lee-Gatewood
Chairwoman
White Mountain Apache Tribe
P.O. Box 1150
Whiteriver, AZ 85941

RE: Consultation for the Proposed Project Red Hawk

Dear Ms. Lee-Gatewood,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

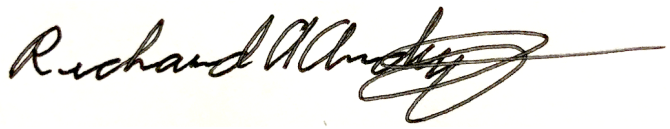
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September 23, 2019

Mr. Mark Altaha
Tribal Historic Preservation Officer
White Mountain Apache Tribe
Historic Preservation Office, P.O. Box 1032
Fort Apache, AZ 85926

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Altaha,

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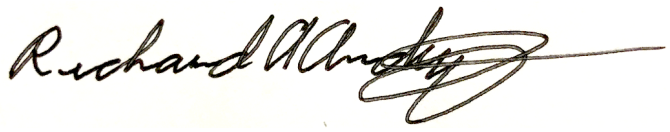
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Enclosures attached

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September 23, 2019

Mr. Chris Coder
Tribal Archaeologist
Yavapai-Apache Tribe
2400 W. Datsi St.
Camp Verde, AZ 86322

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Coder,

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

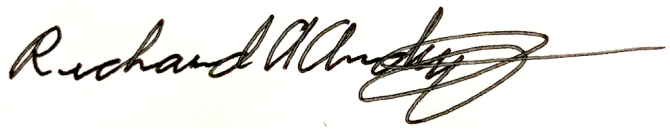
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September 23, 2019

Mr. Stephen Roe Lewis
Governor
Gila River Indian Community
P.O. Box 97
Sacaton, AZ 85147

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Lewis,

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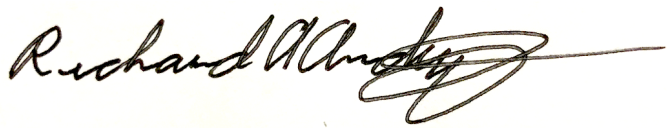
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September 23, 2019

Gila River Indian Community
Tribal Historic Preservation Office
P.O. Box 97
Sacaton, AZ 85147

RE: Consultation for the Proposed Project Red Hawk

GRIC Tribal Historic Preservation Office,

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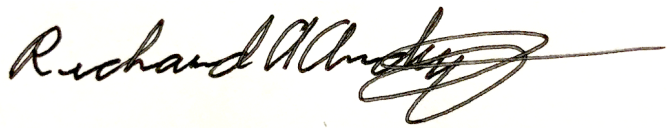
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Senior Environmental Compliance Scientist

Enclosures attached

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P.O. Box 52025 Mail Stop PAB359
Phoenix, AZ 85072-2025
www.srpnet.com

September 23, 2019

Mr. Larry Benallie Jr. and Barnaby Lewis and Kyle Woodson
Gila River Indian Community
P.O. Box 97
Sacaton, AZ 85147

RE: Consultation for the Proposed Project Red Hawk

Dear Mr. Benallie Jr., Mr. Lewis and Mr. Woodson:

Salt River Project (SRP) is proposing construction of Project Red Hawk (Project) which would provide electrical distribution facilities for a new data center. The proposed electrical facilities will interconnect to the existing SRP Browning-Santan 230 kilovolt (kV) circuit. Because the voltage is above 115 kV, a Certificate of Environmental Compatibility (CEC) is required from the Arizona Corporation Committee (ACC) prior to any ground disturbing construction activities associated with this Project. The ACC has requested that SRP conduct cultural resource consultation with the Tribes and the Arizona State Historic Preservation Office to satisfy A.R.S.-2051. The proposed facilities will include a switchyard, several substations with transformers, power poles, and conductor, as needed, throughout the Project Site. The Project will be situated on the northwest corner of South Sossaman Road and East Elliot Road, within the City of Mesa, Maricopa County, Arizona, and all facilities will be constructed on the Project Site, which is solely owned by SRP's customer. I have enclosed a copy of the Class I Cultural Resources Report document prepared by kp environmental, Inc. for your review and comment. The CEC Application that was filed can be accessed on SRP's website at www./srpnet.com/redhawk or I can send you a hard copy upon request.

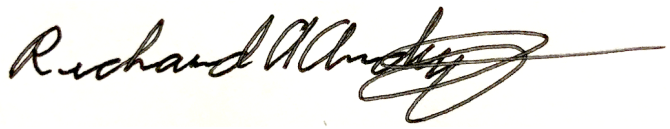
The Project is located on private land and will not cross any tribal lands. No information is presented regarding any cultural resources on tribal lands including traditional cultural places, religious sites, and traditional use areas. All cultural resource locational information, including maps, will be deleted from any copies of the document available to the general public. This document has been sent to the following Native American tribes and communities for review at this time: the Fort McDowell Yavapai Nation, Gila River Indian Community, Hopi Tribe, Pascua Yaqui Tribe, Pueblo of Zuni, Salt River Pima-Maricopa Indian Community, San Carlos Apache Tribe, Tonto Apache Tribe, White Mountain Apache Tribe, Yavapai Apache Nation, Ak-Chin Indian Community, and Tohono O'odham Nation.

SRP would greatly appreciate your comments and will address any issues and concerns that you may have. Please provide your comments in 30 calendar days of receipt of this document to my attention with details below:

Richard A. Anduze
Senior Environmental Compliance Scientist
SRP | Biological and Cultural Resource Services | PAB359
P.O. Box 52025, Phoenix, AZ 85072-2025
P: (602) 236-2804 | F: (602) 236-6690 | M: 602-818-2188
rick.anduze@srpnet.com

Your letter will be included as part of the Project record that is filed with the Arizona Corporation Commission. If you have any further questions or would like to discuss this document, please do not hesitate to contact me.

Sincerely,



Richard A. Anduze
Senior Environmental Compliance Scientist

Email with Enclosures to:
Larry.BenallieJr@gric.nsn.us; Barnaby.Lewis@gric.nsn.us; and Kyle.Woodson@gric.nsn.us

EXHIBIT F
RECREATIONAL PURPOSES AND ASPECTS

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.

Existing Conditions

Regional recreation information near the Project Red Hawk (Project) Site and surrounding areas was gathered from Maricopa County, the City of Mesa, Arizona and the Town of Gilbert, Arizona. Regionally, Maricopa County has a diverse geography, which offers a multitude of recreational opportunities. The terrain within the large county ranges from the broad, sloping alluvial plain south of the Phoenix metropolitan area to rugged mountain formations within areas of the southern portion of the county like the Sonoran Desert National Monument, and also in the eastern portion of the county, within the Tonto National Forest. Within the broad area of Maricopa County, there are also regional and local parks associated with various mountain ranges such as the Estrella Mountains, South Mountains, Phoenix Mountains, McDowell Mountains, Usery Mountains and the Santan Mountains.

The recreational activities more specific to the Project area are limited and include a sports complex (Paloma Soccer Complex, owned by the Paloma Community Church) to the east, Wild West Paintball and Airsoft Park to the southeast, golf courses to the north, sports complexes to the south and west and sports fields to the associated with schools in the area and a few neighborhood parks, greenbelts, and catchment basins (see **Figure F-1**).

As discussed in **Exhibit A** (Project Location and Land Use) and depicted on **Figures A-1** and **A-2,** the Project Site is under the jurisdiction of the City of Mesa.

Proposed Project

The Project Site abuts an existing transmission line corridor to the north, the Roosevelt Water Conservation District (RWCD) Canal and the Maricopa County Flood Control District Channel to the west, Elliot Road to the south, and Sossaman Road to the east. There are no Maricopa County open space lands near the Project Site. The only recreational facilities within 1,000 feet of the Project Site are the Paloma Soccer Complex to the east and Wild West Paintball and Airsoft Park to southeast and a neighborhood open space park/greenbelt to the north. There are additional recreational facilities within the vicinity of the Project Site that include two golf courses: Superstition Springs Golf Club and Sunland Village East Golf Course. There are two sports complexes within one mile of the Project Site to the south and west and sports fields associated with the schools in the area.

Potential Effects

The Project Site will not be available for public recreational purposes, but the Project would not preclude recreational uses in the area around the Project Site. The Project Site would not infringe upon open space and recreational lands. The Project would follow the development plan approved by the City of Mesa during the construction phase.

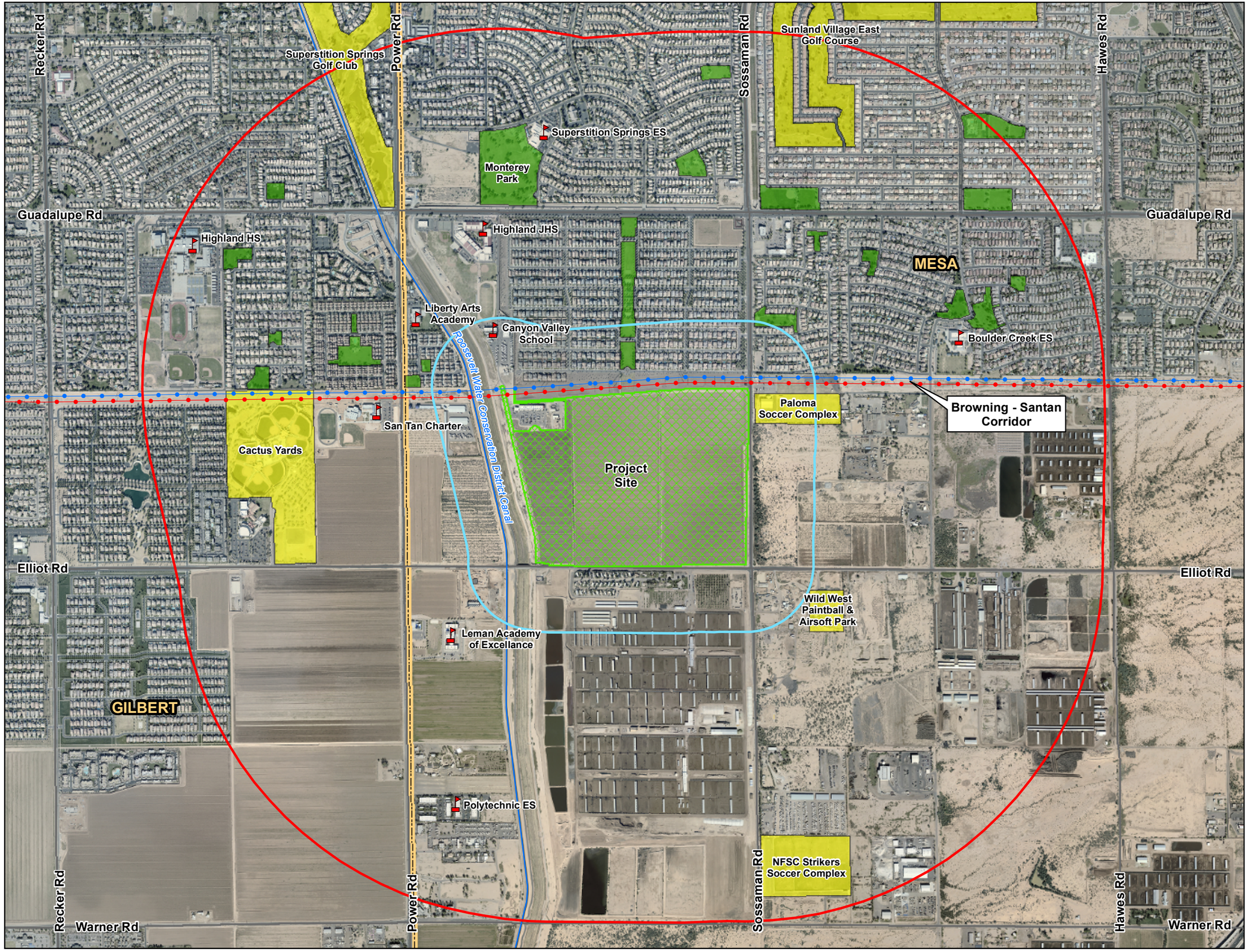
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City of Mesa, 2014. The Mesa 2040 General Plan accessed 8/14/2019. [Online] Located at: http://www.mesaaz.gov/home/showdocument?id=12298

County of Maricopa, 2016. Comprehensive Plan, Vision 2030. Revised August 2002 [Online] Located at: http://www.maricopa.gov/planning/Resources/Plans/ComprehensivePlan

County of Maricopa, 2017. Maricopa County Planning and Development Department GIS Home Page, titled PlanNet. [Online] Located at: https://www.maricopa.gov/507/GIS-Maps



Legend

- School
- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- Major Road
- Canal
- Municipal Boundary

Project Components

- Project Site
- 1,000-Foot Buffer of Project Site
- 1-Mile Buffer of Project Site

Recreation

- Recreational Facility
- Neighborhood Park

0 0.1 0.2 0.3 0.4 0.5
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

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PROJECT RED HAWK
EXHIBIT F-1 RECREATION

Map Extent: Maricopa County, AZ

Date: 9.17.19		Author: sjw

EXHIBIT G
CONCEPTS OF TYPICAL FACILITIES

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

The following drawings are included:

Figure G-1: Double-circuit 230 kilovolt (kV) Single-Pole, Tangent, Vertical Configuration with Braced Post Insulators

Figure G-2: Single-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Braced Post Insulators

Figure G-3: Single-circuit 230kV Single-Pole, Tangent, Delta Configuration with Braced Post Insulators

Figure G-4: Double-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Horizontal Post Insulator

Figure G-5: Single-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Horizontal Post Insulator

Figure G-6: Single-circuit 230 kV Single-Pole, Tangent, Delta Configuration with Horizontal Post Insulator

Figure G-7: Double-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Suspension Insulators

Figure G-8: Single-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Suspension Insulators

Figure G-9: Single-circuit 230kV Single-Pole, Tangent, Delta Configuration with Suspension Insulators

Figure G-10: Double-circuit 230kV Single-Pole, Dead-End, Vertical Configuration on Davit Arms with Strain Insulators

Figure G-11: Single-circuit 230kV Single-Pole, Dead-End, Vertical Configuration on Davit Arms with Strain Insulators

Figure G-12: Single-circuit 230kV Single-Pole, Dead-End, Delta Configuration on Davit Arms with Strain Insulators

Figure G-13: Single-circuit 230kV Single-Pole, Dead-End, Vertical Configuration with Strain Insulators

Figure G-14: Single-circuit 230kV 2-Pole, Tangent, H-frame Horizontal Configuration with Suspension & Vee-String Insulators

Figure G-15: Single-circuit 230kV 3-Pole, Dead-End, Horizontal Configuration with Strain Insulators

Figure G-16: Single-circuit 230kV Single-Pole, Dead-End, Underground to Overhead Riser

Figure G-17: Typical Substation General Arrangement

Figure G-18: Typical Switchyard General Arrangement

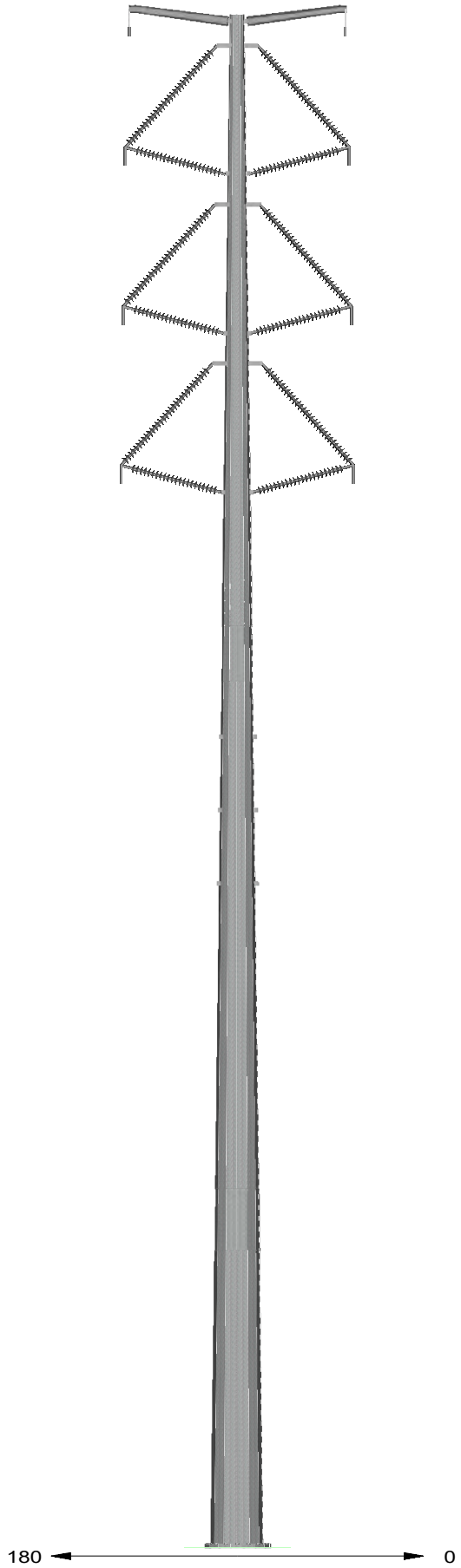
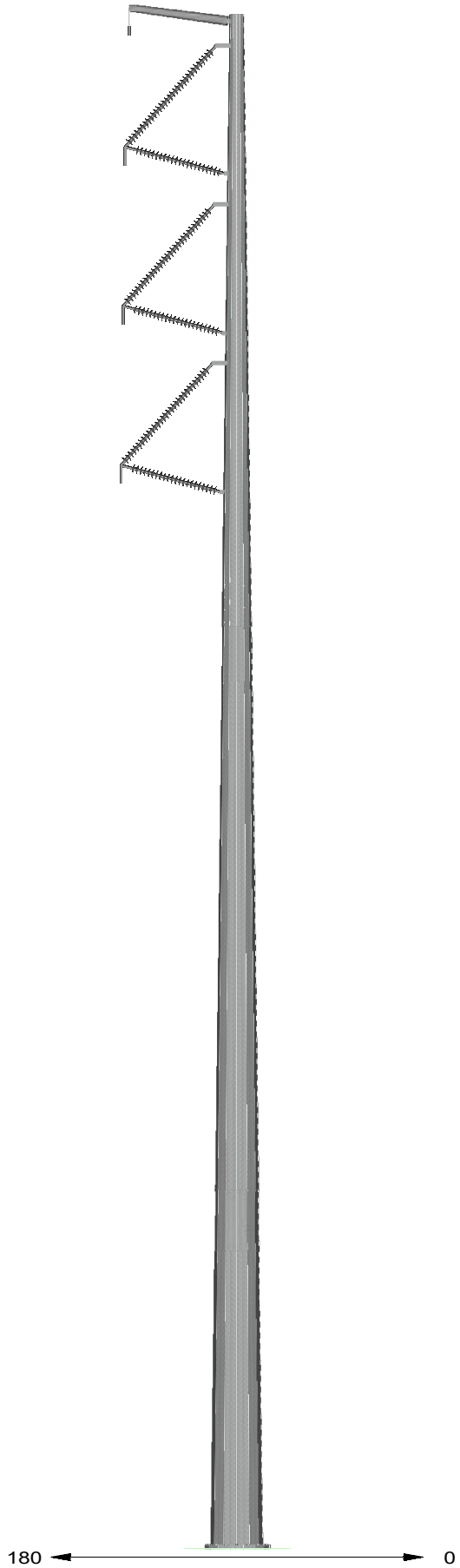


Figure G-1
Double-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Braced Post Insulators

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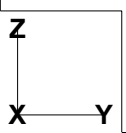


Figure G-2
Single-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Braced Post Insulators

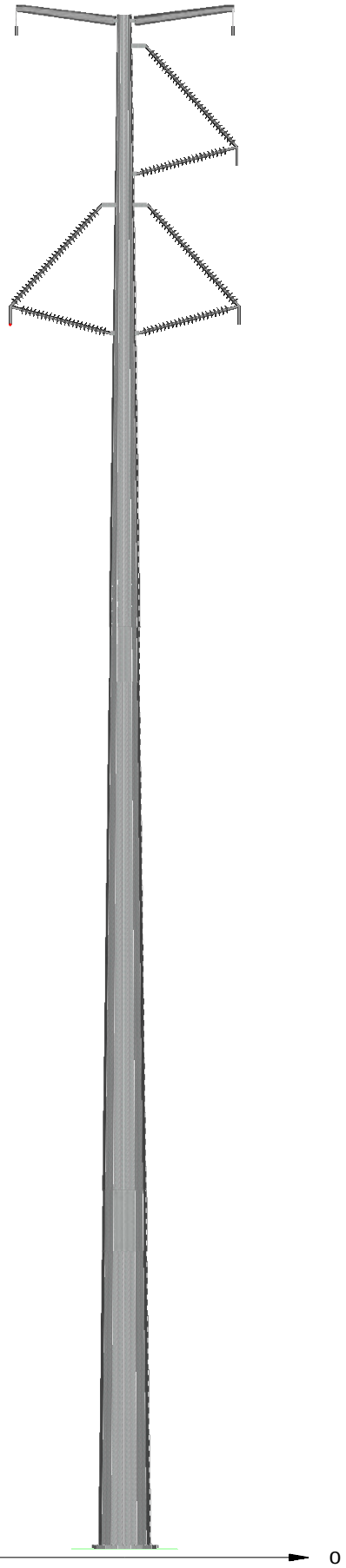


Figure G-3
Single-circuit 230kV Single-Pole, Tangent, Delta Configuration with Braced Post Insulators

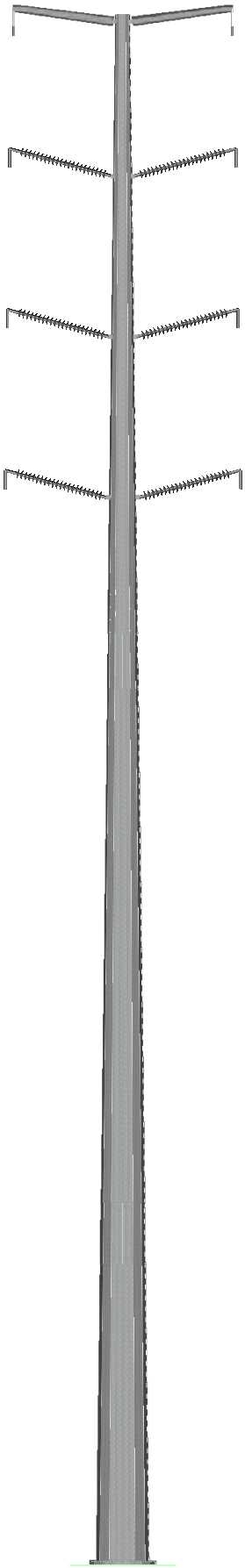


Figure G-4
Double-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Horizontal Post Insulator

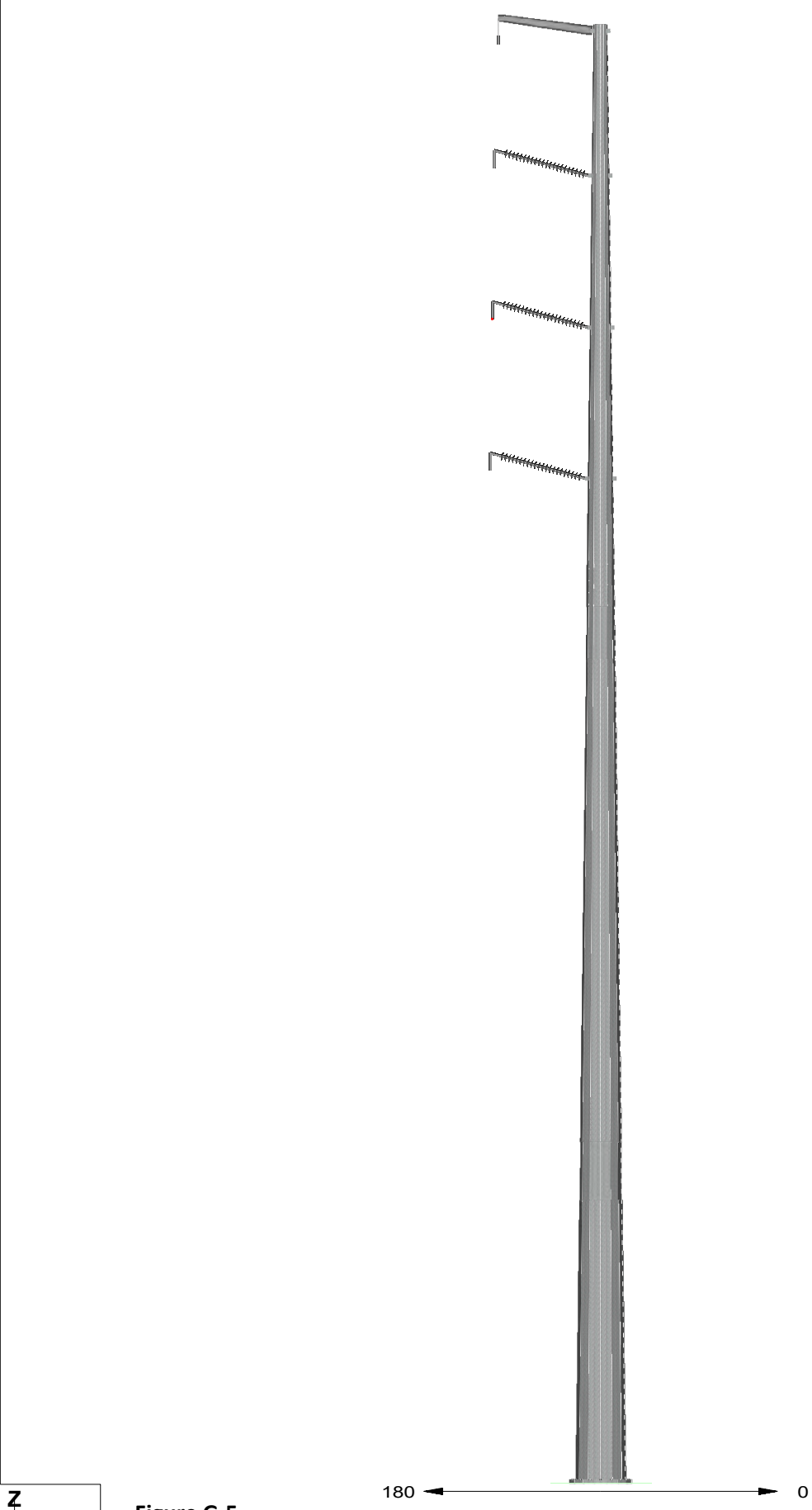


Figure G-5
Single-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Horizontal Post Insulator

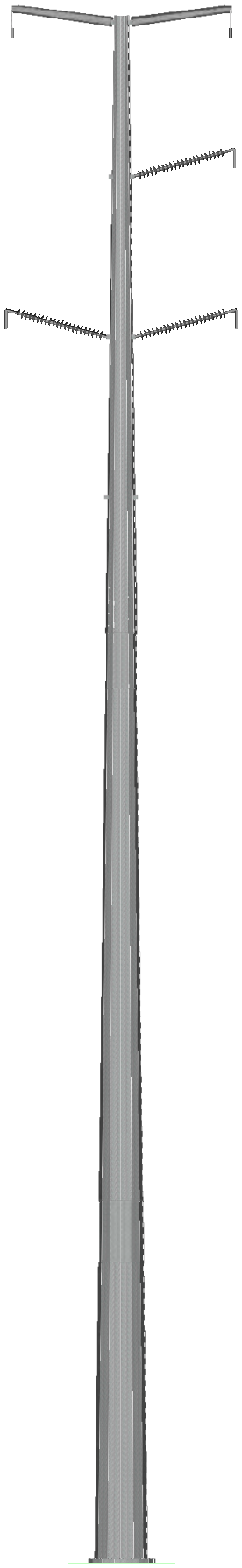


Figure G-6
Single-circuit 230kV Single-Pole, Tangent, Delta Configuration with Horizontal Post Insulator

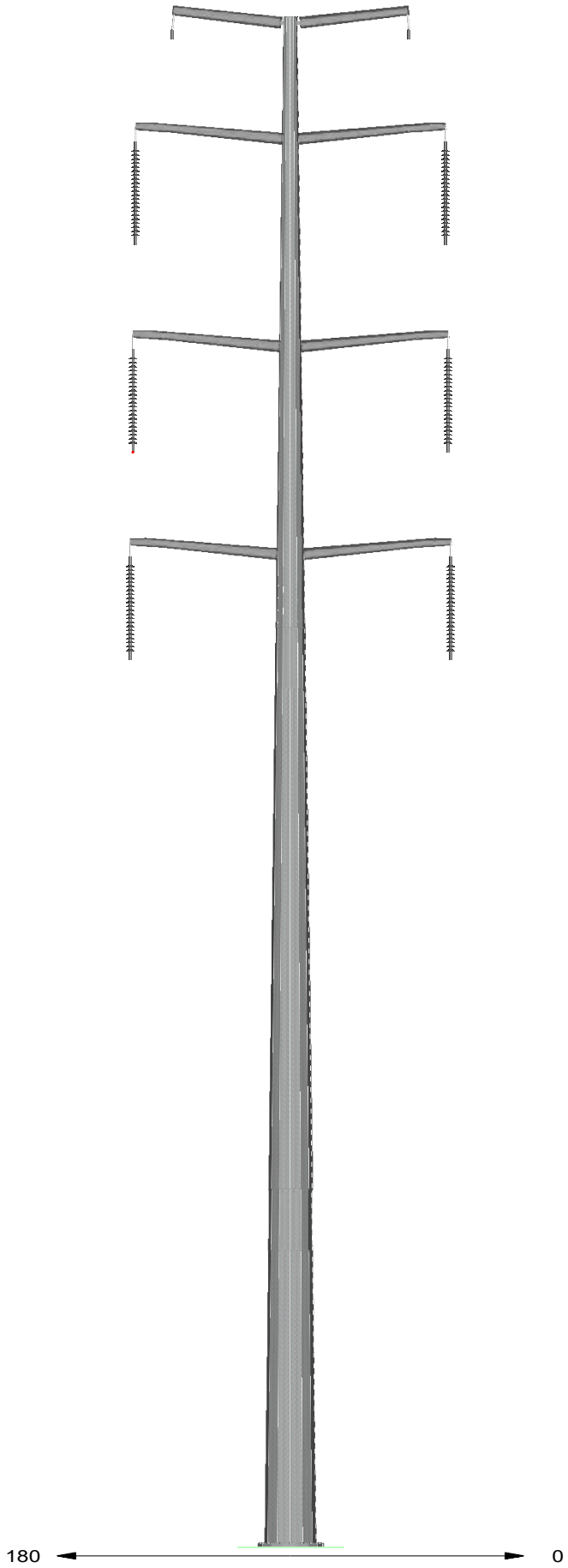
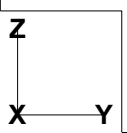


Figure G-7
Double-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Suspension Insulators



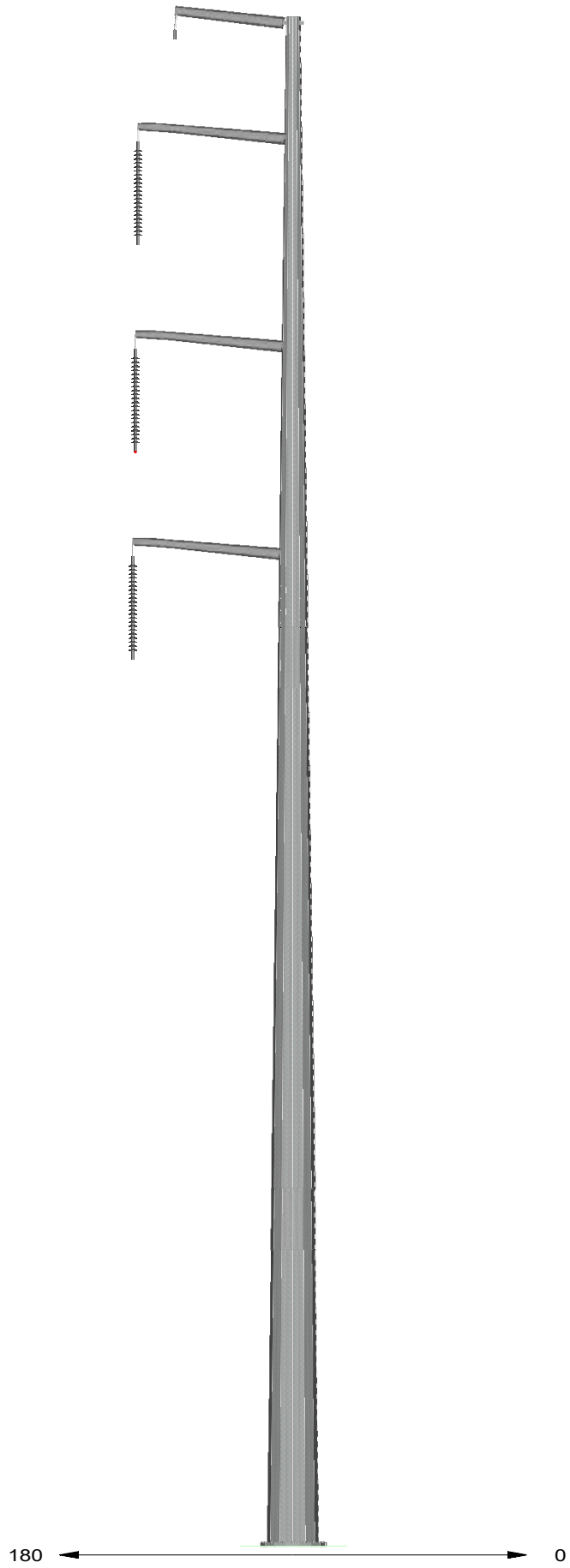
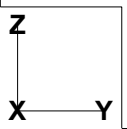


Figure G-8
Single-circuit 230kV Single-Pole, Tangent, Vertical Configuration with Suspension Insulators



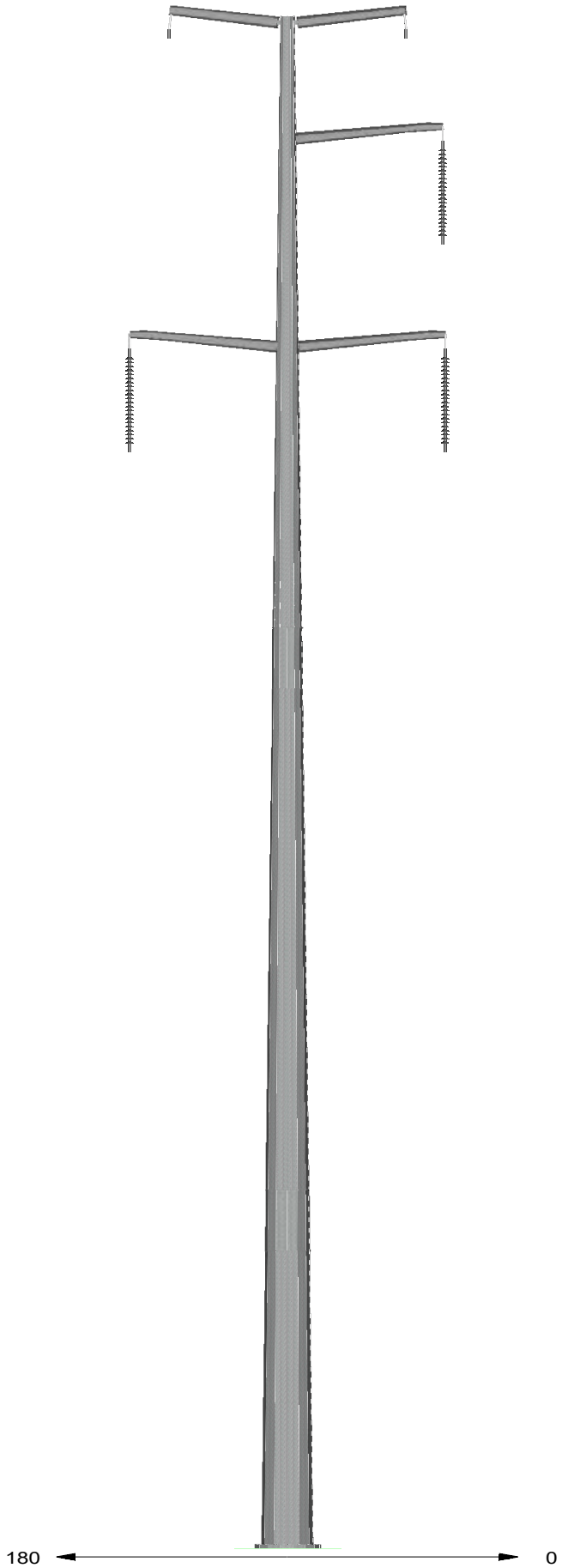


Figure G-9
Single-circuit 230kV Single-Pole, Tangent, Delta Configuration with Suspension Insulators

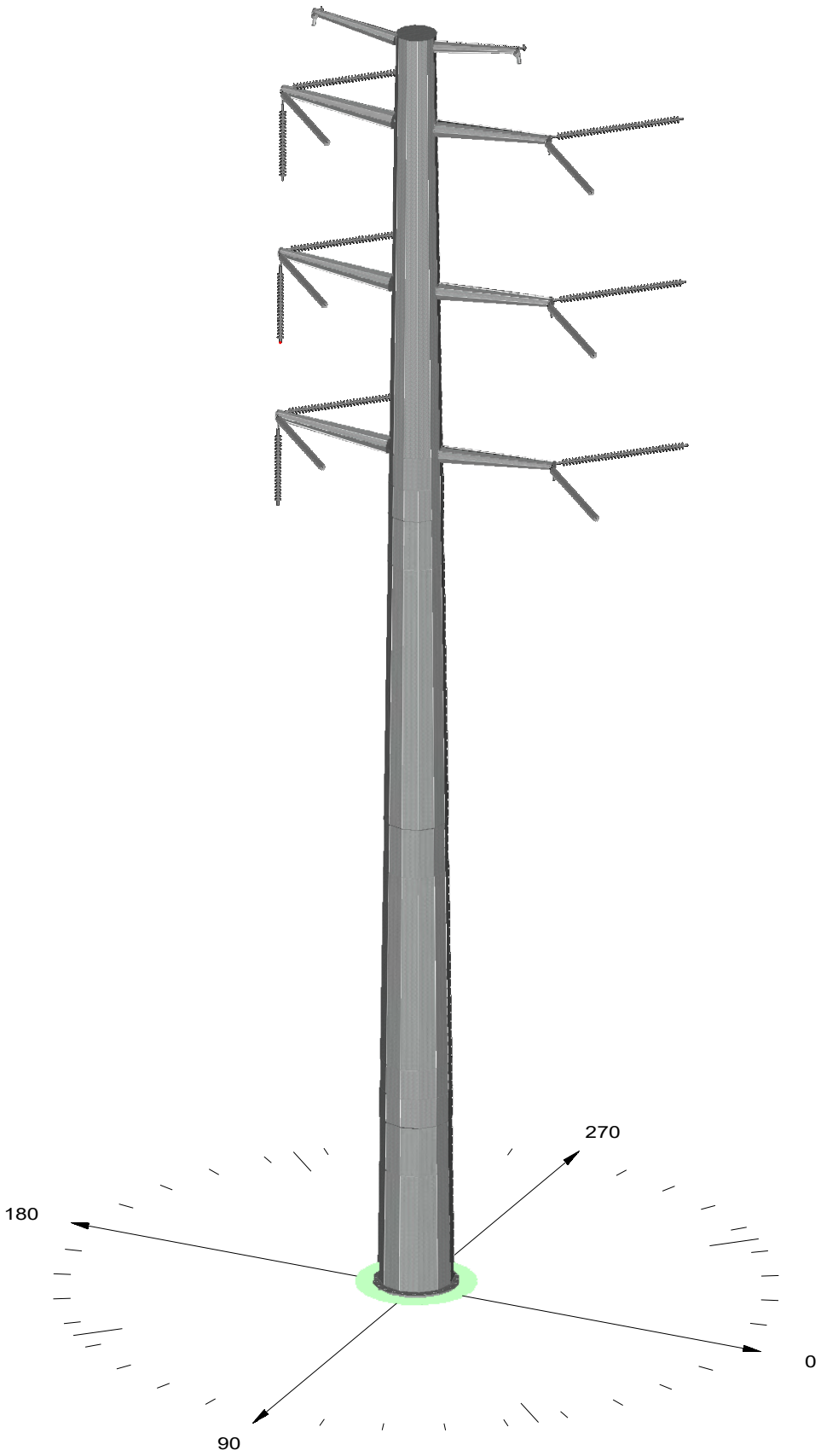


Figure G-10
Double-circuit 230kV Single-Pole, Dead-End, Vertical Configuration on Davit Arms with Strain Insulators

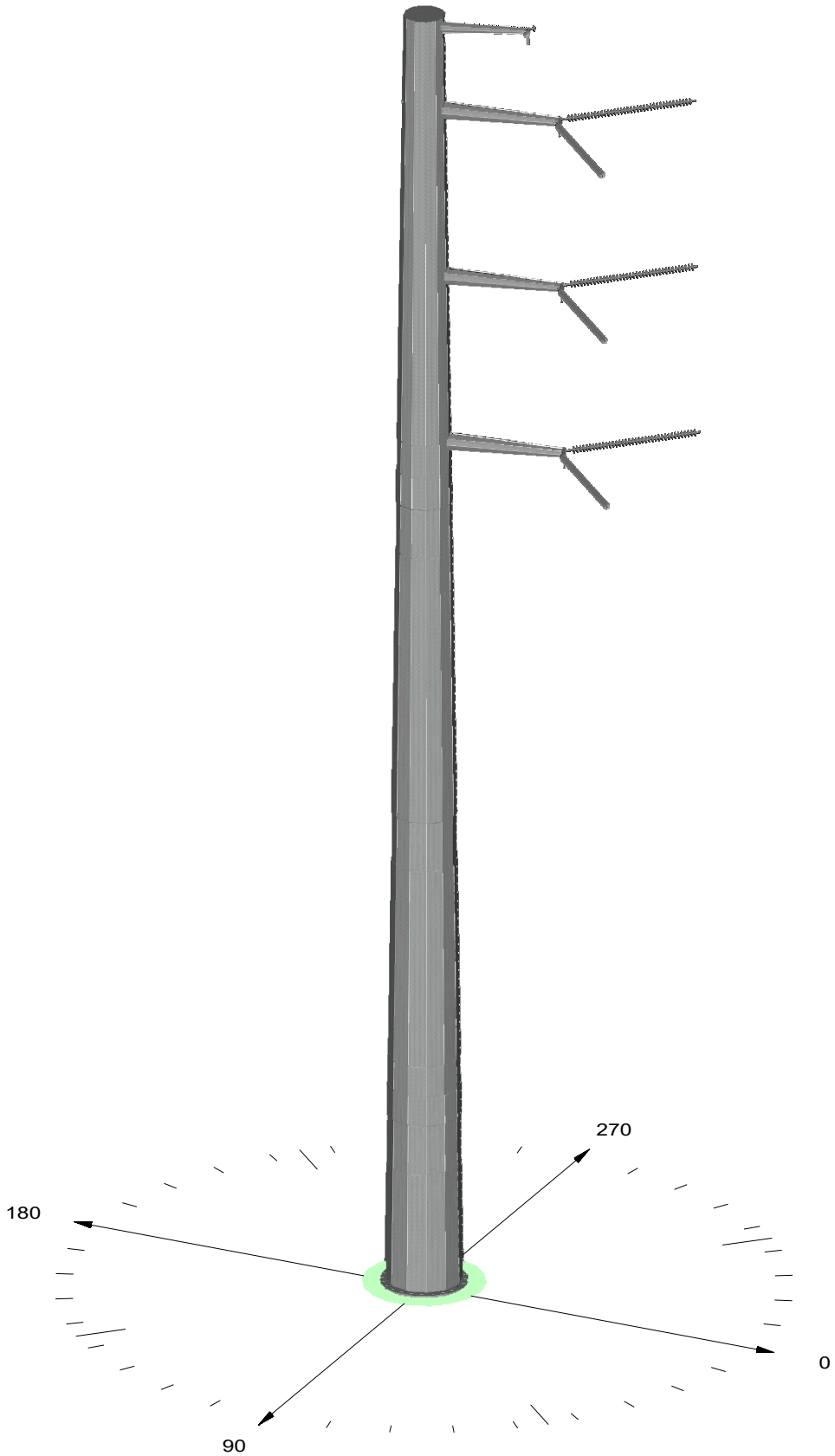
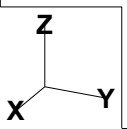


Figure G-11
Single-circuit 230kV Single-Pole, Dead-End, Vertical Configuration on Davit Arms with Strain Insulators



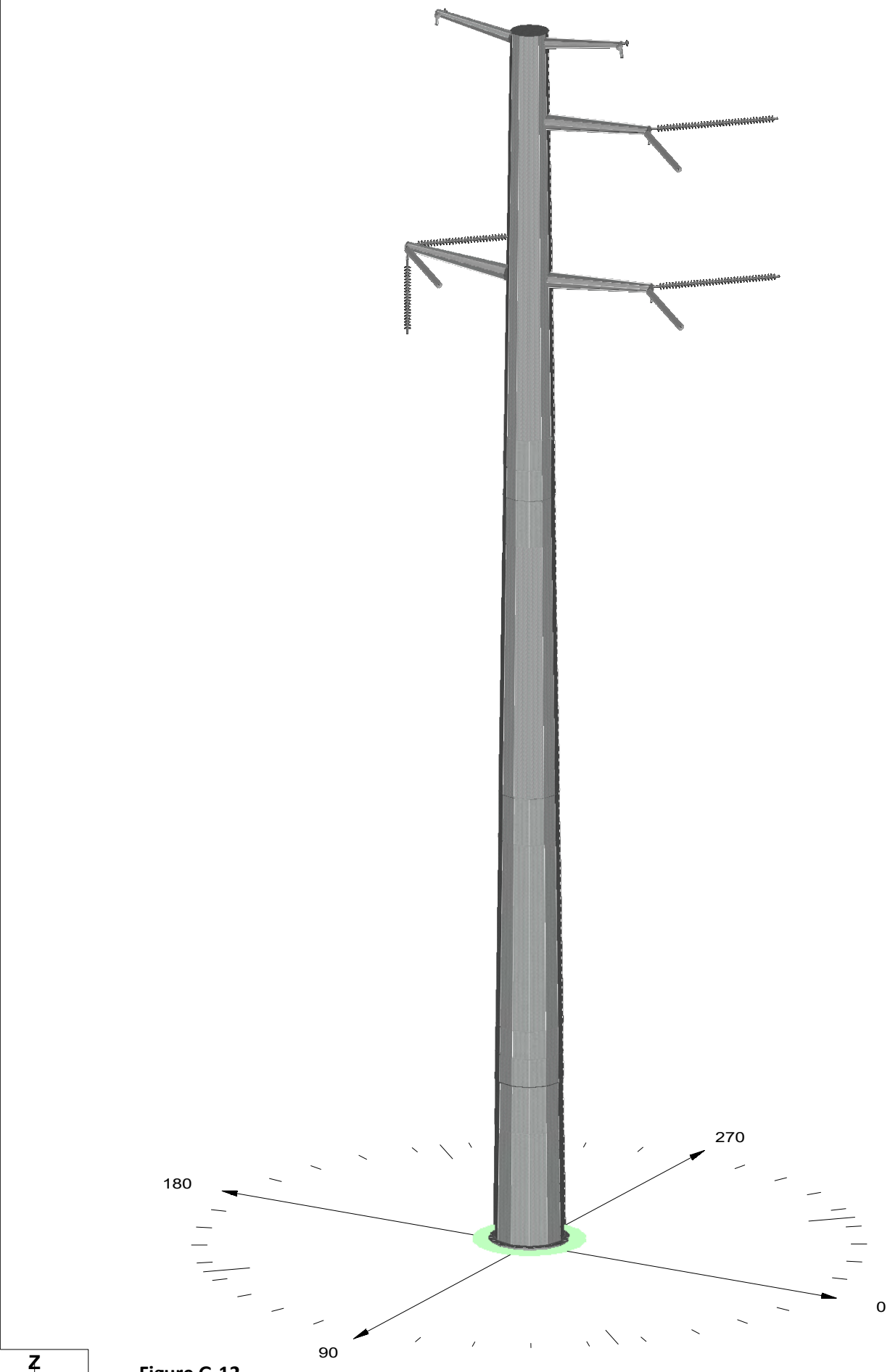


Figure G-12
Single-circuit 230kV Single-Pole, Dead-End, Delta Configuration on Davit Arms with Strain Insulators

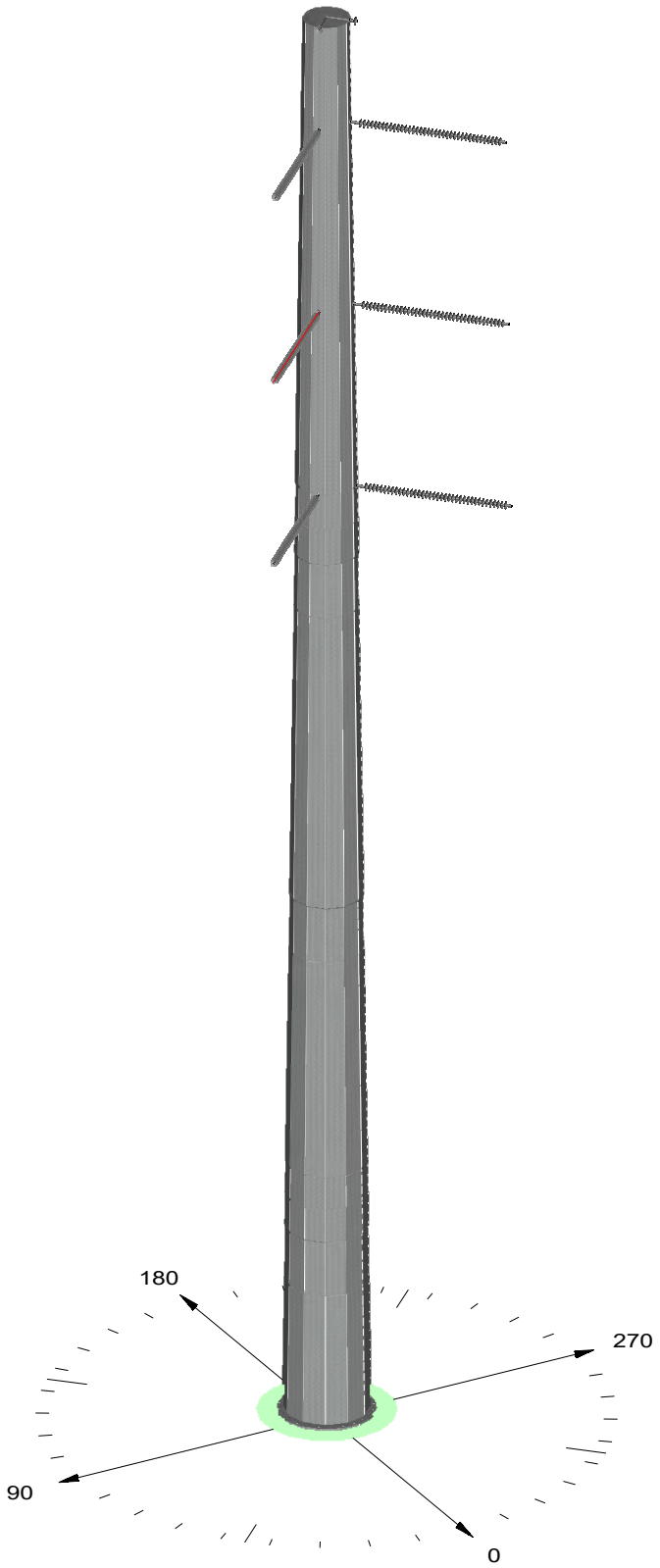
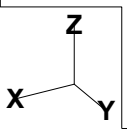


Figure G-13
Single-circuit 230kV Single-Pole, Dead-End, Vertical Configuration with Strain Insulators



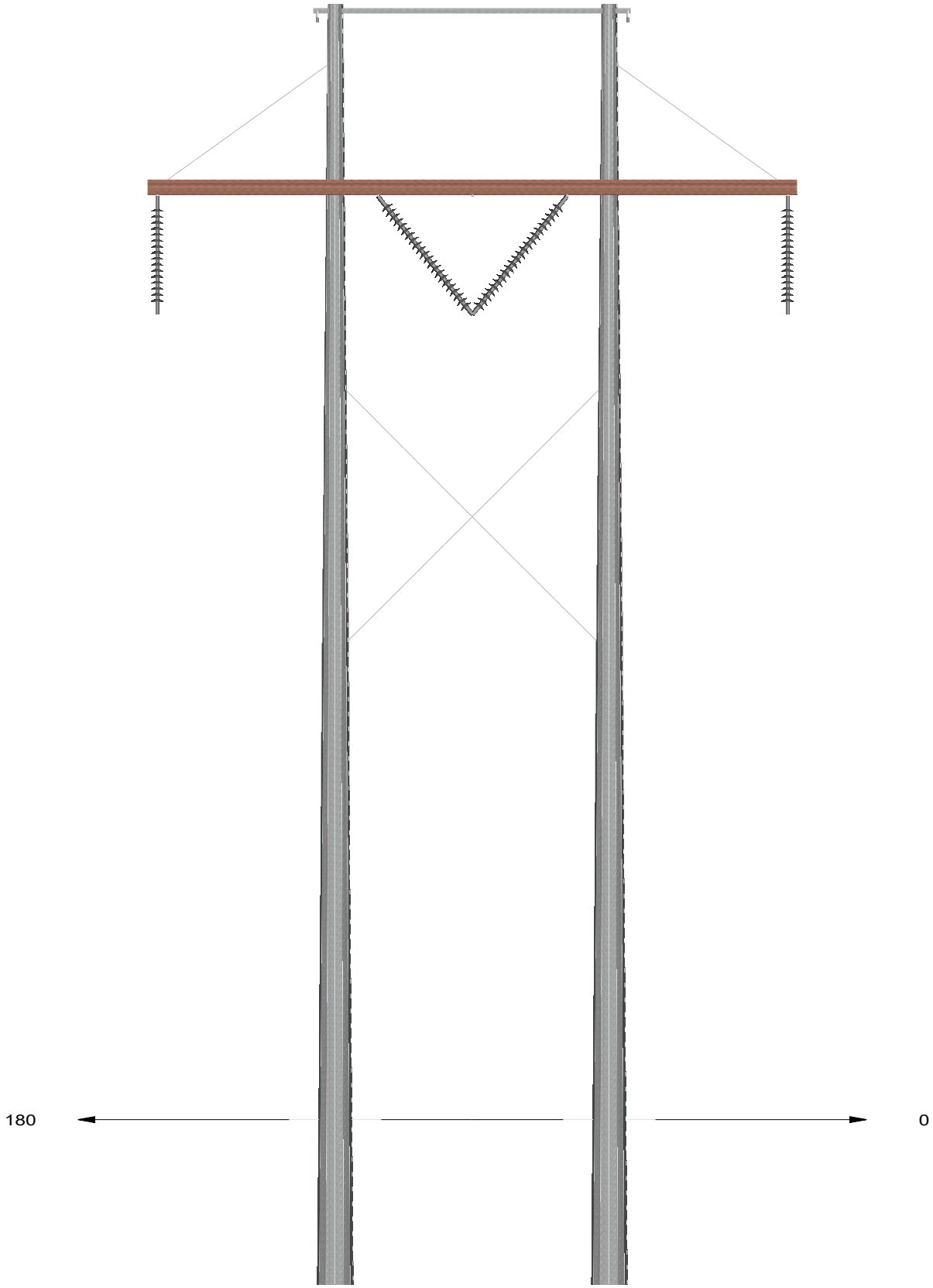


Figure G-14
Single-circuit 230kV 2-Pole, Tangent, H-Frame Horizontal Configuration with Suspension & Vee-String Insulators

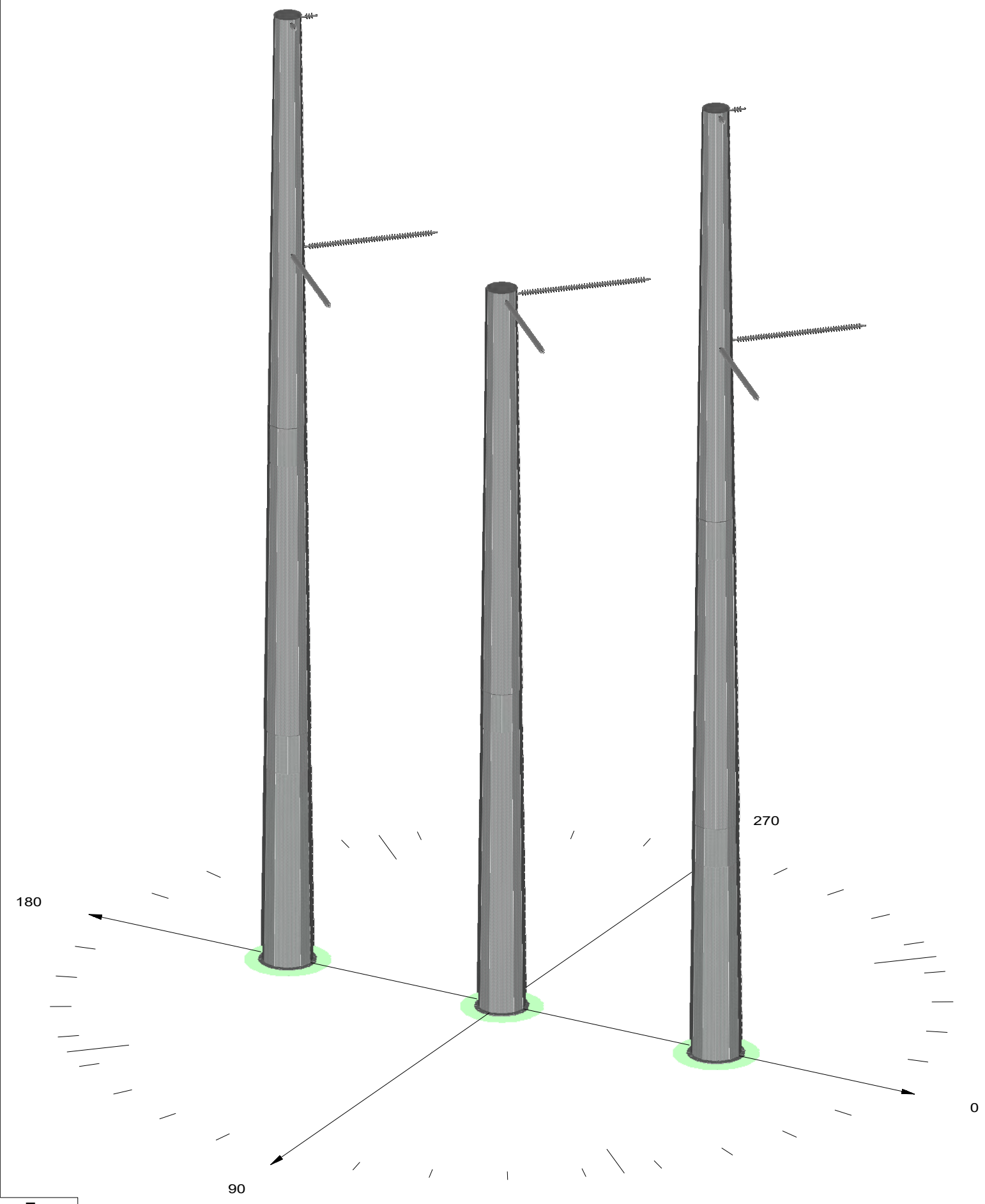


Figure G-15
Single-circuit 230kV 3-Pole, Dead-End, Horizontal Configuration with Strain Insulators



Figure G-16
Single-circuit 230kV Single-Pole, Dead-End, Underground to Overhead Riser

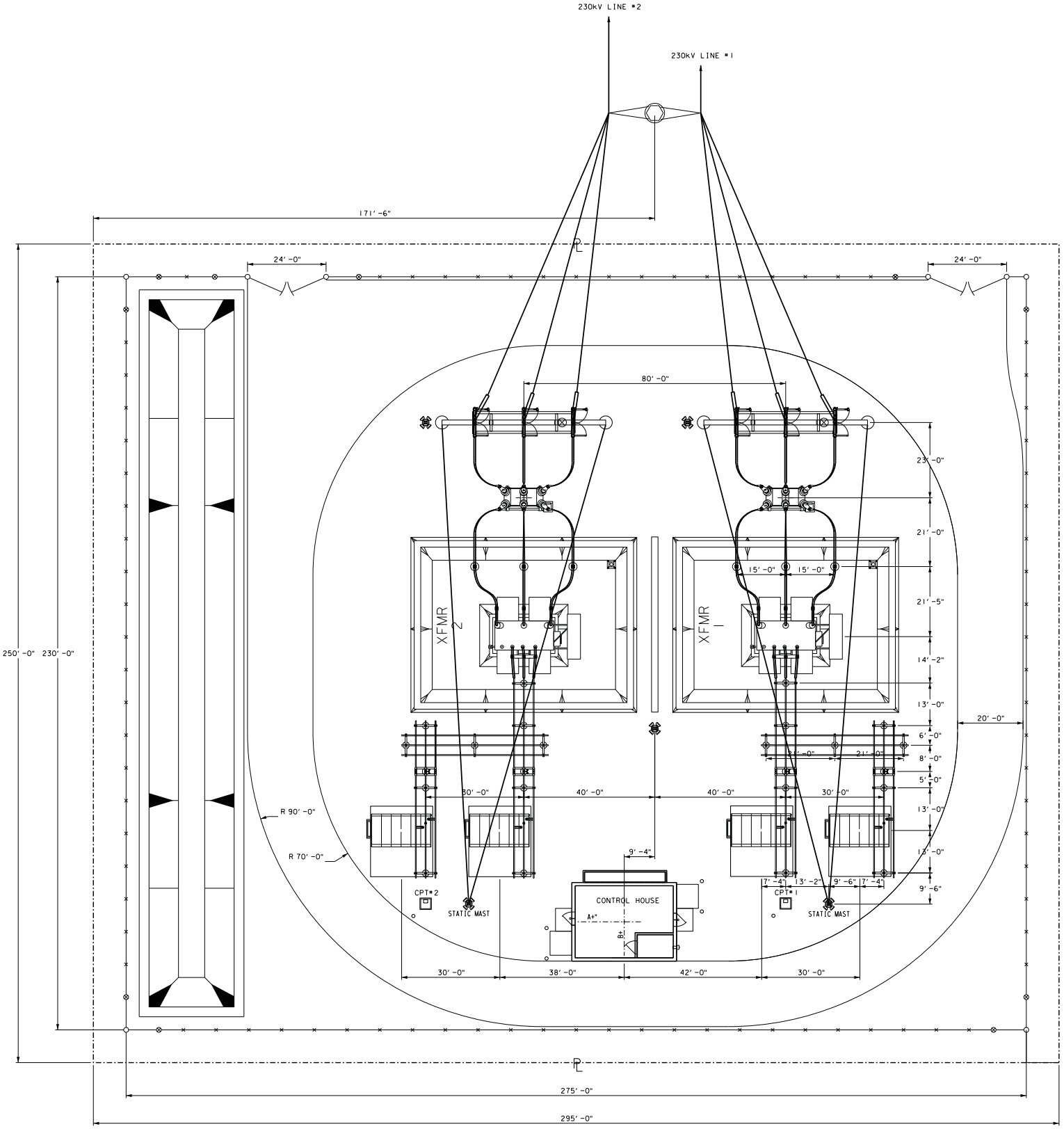


Figure G-17
Typical Substation General Arrangement

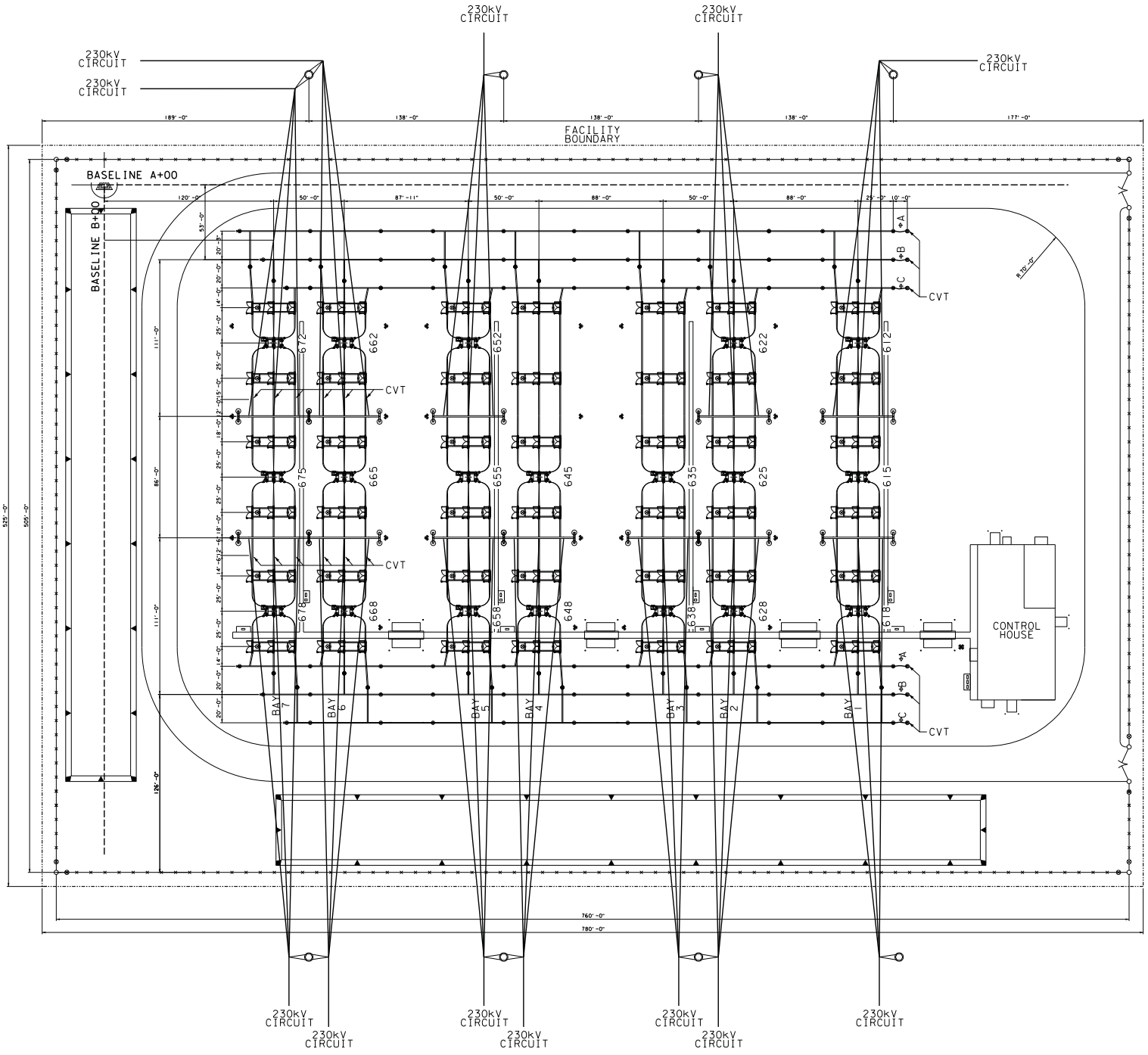


Figure G-18
Typical Switchyard General Arrangement

EXHIBIT H
EXISTING PLANS

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.

Planned Area Developments

Information regarding each existing Planned Area Development (PAD) near the Project Red Hawk (Project) Site was gathered from the City of Mesa, the Town of Gilbert, and Maricopa County. There are currently no permitted or planned PADs within 1,000 feet of the Project Site.

As described in **Exhibit A**, Project Location and Land Use, the Project Site has recently been rezoned to create the Red Hawk Employment Opportunity District and the City of Mesa approved the development plan for the data center associated with the proposed Project. The development plan and associated City of Mesa staff report is included in **Exhibit H-1.**

There are two additional PADs outside the 1,000 foot buffer. These are depicted on **Figure H-1.** The Hayes Crossing PAD is a large mixed use PAD that is located southeast of the Project Site. There is another small construction company located to the east of the Project Site.

Though not within 1,000 feet of the Project Site, the Elliot Road Technology Corridor is a large planned development area with more than 1,000 acres available for development (See **Figure H-1**). The Elliot Road Technology Corridor was created in 2014 to expedite the entitlements process to attract high technology industries to Mesa and to establish site planning design guidelines to ensure compliance with the City of Mesa General Plan and Mesa Gateway Strategic Development Plan. The City of Mesa has expressed a preference for generally non-residential zoning, due to increasing over-flight activities associated with Phoenix-Mesa Gateway Airport operations. The Elliot Road Technology Corridor stretches along Elliot Road from Signal Butte Road to Hawes Road. Projects that might have taken up to six months to go through the entitlement process, can get approval in as little as a few weeks (City of Mesa, 2019). The Elliot Road Technology Corridor, as well as Arizona's data center tax incentives have made the location very desirable for companies to move into the Planned Area Development Zone.

Planned Road Improvements

Road improvements planned by the Arizona Department of Transportation (ADOT), Maricopa County Department of Transportation (MCDOT), City of Mesa, and Town of Gilbert within the vicinity of the Project are described below.

ADOT, in conjunction with the Federal Highway Administration (FHWA), is in the process of designing the interim Phase II section of State Route 24 (SR-24). There will be approximately

five miles of new freeway extending from Ellsworth Road in Maricopa County to Ironwood Drive in Pinal County, approximately two miles from the Project Site. The project is currently in the final design phase with construction anticipated to begin Fall 2020. Phase II includes improvements to connect Ellsworth Road to Ironwood Road with two paved lanes in each direction separated by a graded median within the footprint of the future SR-24. This interim project would help to serve the transportation needs of the southeast valley until funding is available for the ultimate build-out of the SR-24 freeway, which is anticipated between 2027 and 2035.

Maricopa County is partnering with the City of Mesa to improve Elliot Road between the State Route Loop 202 and Signal Butte Road, approximately 1.5 miles from the Project Site. Roadway improvements are anticipated to begin in 2020.

Potential Effects

There are no PADs or developments within 1,000 feet of the Project Site and therefore no developments that would be directly impacted by the Project. The Project Site is consistent with the City of Mesa's vision for future development as demonstrated with its recent approval of the Project Site and the Elliott Road Technology Corridor.

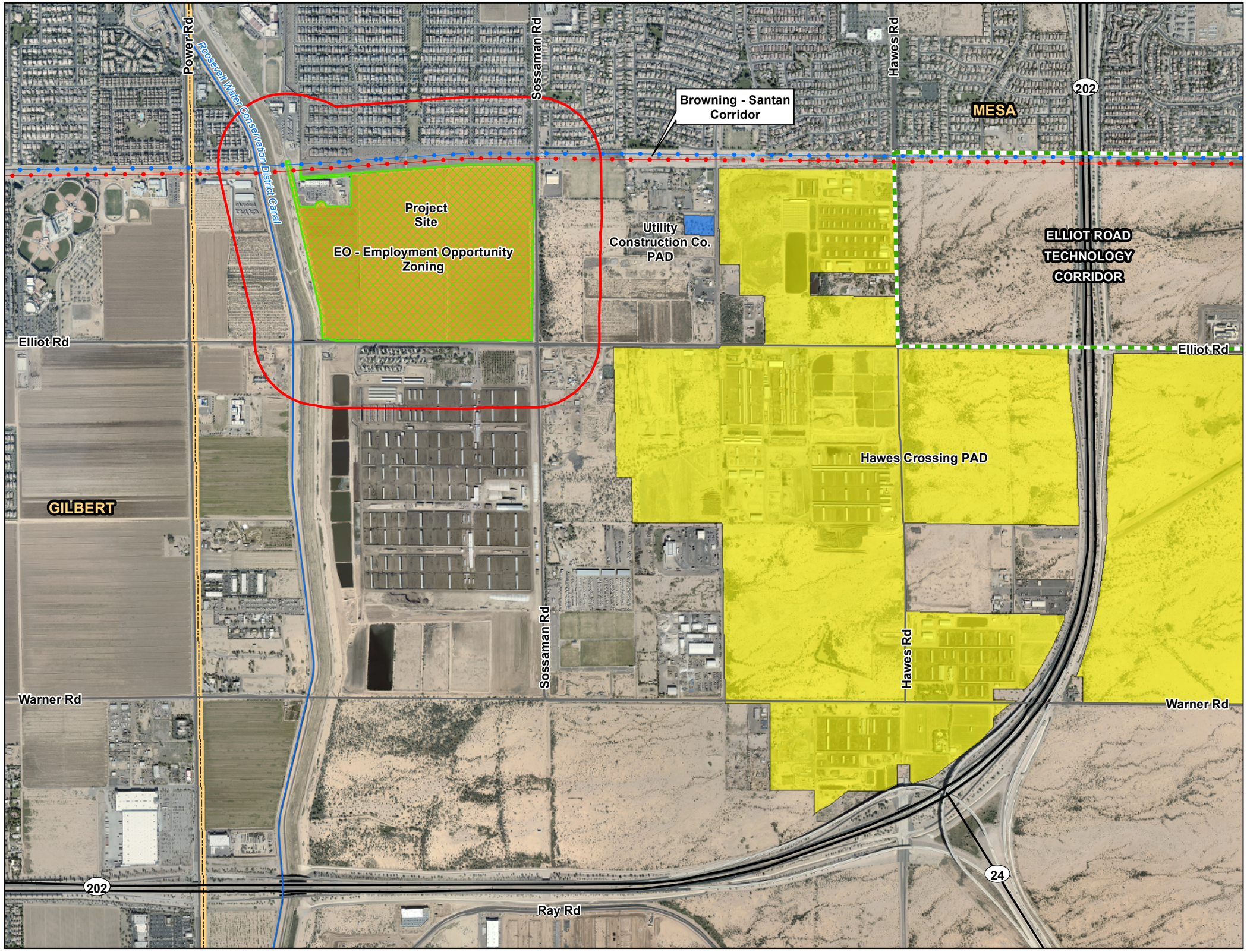
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Arizona Department of Transportation, 2019. State Route 24: Ellsworth Road to Ironwood Drive Interim Phase II accessed 8/15/2019. [Online] Located at: https://azdot.gov/projects/central-district-projects/sr-24-ellsworth-rd-to-ironwood-dr-interim-phase-ii

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City of Mesa, 2014. The Mesa 2040 General Plan accessed 5/3/2018. [Online] Located at: http://www.mesaaz.gov/home/showdocument?id=12298

Maricopa County Department of Transportation, 2019. 8/15/19 [Online] Located at: http://apps.mcdot.maricopa.gov/projects/Project.aspx?ID=2272



Legend

- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- State Highway
- Major Road
- Canal
- Municipal Boundary
- Elliot Road Technology Corridor

Project Components

- Project Site
- 1,000-Foot Buffer of Project Site

Planned Area Developments

- Hawes Crossing PAD
- Utility Construction Company PAD

City of Mesa Zoning

- EO - Employment Opportunity

0 0.1 0.2 0.3 0.4 0.5
Miles

SPCS NAD 83, AZ Central, US Ft.
Data Sources: BLM, City of Mesa, ESRI, Maricopa Co., Pinal Co., SRP, Town of Gilbert, USGS.

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PROJECT RED HAWK
EXHIBIT H-1
PLANNED AREA DEVELOPMENTS

Map Extent: Maricopa County, AZ

Date: 9.17.19		Author: sjw

EXHIBIT H-1
RED HAWK DEVELOPMENT PLAN AND STAFF REPORT

Project Red Hawk

Employment Opportunity District Development Plan

Submitted by:
W. Ralph Pew
Pew & Lake, PLC
1744 South Val Vista Drive, Suite 217
Mesa, AZ 85204

Submitted to:

The City of Mesa Planning Division
Mesa, Arizona

REVISED March 12, 2019

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G. Permanent Sign Regulations 9

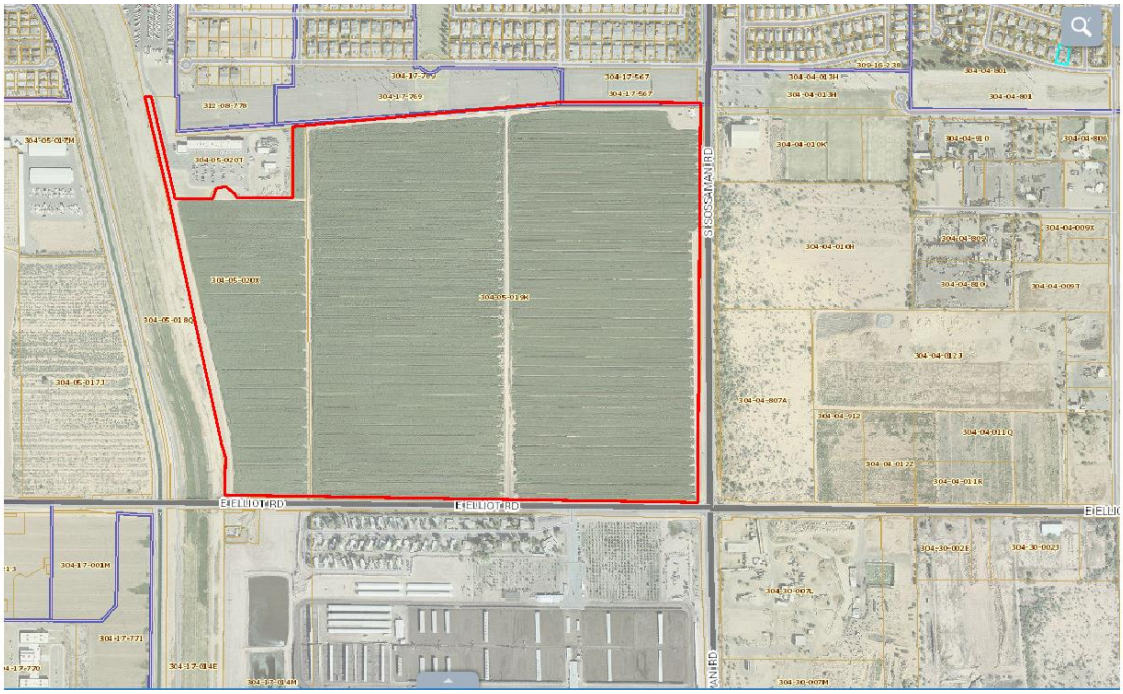
H. Development Processing 9

I. Definitions 9

J. Administrative Procedures 10

A. Project Location/Development Plan Map

The area covered by the Red Hawk Employment Opportunity District (RHEOD) is bound on the east by Sossaman Road, on the South by Elliott Road, on the west by the RWCD canal and on the north by a 250-foot wide electrical transmission line easement corridor, including multiple 69 kV, 230 kV and 500 kV SRP transmission lines. The 187-acre property is identified by Maricopa County Assessor's Parcel numbers: 304-05-018K, 304-05-018L, 304-05-019F, 304-05-019G, 304-05-019K, 304-05-020X, 304-05-022G and 304-05-022K, and is shown in the graphic below, and on the Project Red Hawk Development Plan Map provided as **Exhibit A**.



B. Development Goals

The purpose of the RHEOD is to provide an area where an office park, research and development facility, light manufacturing, data and information processing centers, limited manufacturing and processing, wholesaling, research, and/or warehousing and distributions activities may take place in enclosed buildings with outdoor storage as needed to support the primary uses. The buildings may have a campus-like setting, and areas visible to the public will generally include landscape areas as described herein.

Consistent with the current Industrial and Mixed Use Activity/Employment uses designated in the City of Mesa General Plan, the applicant aims to create an Employment Opportunity District that will allow potential users that seek a campus-like environment with sophisticated security and enhanced utility needs, to move quickly through the entitlement processes in order to establish development that is not only consistent with the City of Mesa's goals for this location, but that enables a nimble response to market and technological factors driving development decisions. This site is envisioned to be developed in phases-- with a range of building square footages and maximum flexibility for the ultimate site plan configuration.

C. Land Use Regulations

The RHEOD is based on the uses allowed in the Light Industrial (LI) zoning District. Accordingly, the allowed uses in the RHEOD are as follows:

Proposed Use		
Public and Semi-Public Use Classifications		
Colleges and Trade Schools, Public or Private	P	
Colleges and Universities	P	
Commercial Trade Schools	P	
Industrial Trade Schools	P	
Day Care Center (as an accessory use)	P	
Government Offices	P	
Hospitals and Clinics		
Hospitals	P (1, 2)	MZO §11-31-15, Hospitals and Clinics
Clinics (as an accessory use)	SUP (1, 2)	
Hospitals	P	
Public Safety Facilities	P	
Public Maintenance Facilities	P	
Commercial Use Classifications		
Conference Centers (as an accessory use)	SUP	
Business Services (including data centers)	P	
Eating and Drinking Establishments; as a service to on-site business or industry		
Bars/Clubs/Lounges	P	MZO §11-31-19, Outdoor Eating Areas
Coffee Shops/Cafes	P	
Restaurants, Bar and Grill	P	
Restaurants, Full-Service	P	
Restaurants, Limited Service	P	
With Drive-Thru Facilities	P	
With Outdoor Seating Areas	P	
Hotels and Motels	P	
Laboratories	P	
Offices		
Business and Professional	P	
Medical and Dental (as an accessory use)	P	
Personal Services (as an accessory use)	P	
Employment and Industrial Use Classifications		
	P	
Handicraft/Custom Manufacturing	P	

Light Assembly/Cabinetry	P	
Manufacturing/Limited	P	
Research and Development	P	
Warehousing and Storage		
Indoor Warehousing and Storage (as an accessory use)	P	
Transportation, Communication and Utilities Use Classifications		
Heliport (as an accessory use)	SUP	
Communication Facilities (as an accessory use)		
Antenna and Transmission Towers (as an accessory use)	P	
Utility Classifications		
Solar Farms (as an accessory use)	SUP	MZO §11-30-15, Solar Panels and Other Energy Production Facilities
Utilities, Major	CUP	
Utilities, Minor (as an accessory use)	P	
Specific Accessory Uses and Facilities		
Outdoor Storage (as an accessory use)	P (3)	
Caretaker's Residences (as an accessory use)	P (1, 2)	
Portable Storage Containers (as an accessory use)	P/SUP	MZO §11-30-16 Portable Storage Containers

P= Permitted, CUP= Council Use Permit, SUP= Special Use Permit

1. Use not permitted when the property is subject to the AOA 1 overflight area, See Section 11-19-2, Runway Protection Zones and Airport Overflight Area.
2. Use not permitted when the property is subject to the AOA 2 overflight area, See Section 11-19-2, Runway Protection Zones and Airport Overflight Areas.
3. Permitted only if all activities pertaining to the manufacturing or processing of the products are conducted entirely within an enclosed building. Accessory outdoor storage permitted only if confined to the rear one-half of the lot

Use classifications describe one or more uses of land having similar characteristics, but do not list every use or activity that may appropriately be within the RHEOD. The Zoning Administrator shall determine whether a specific use shall be deemed to be within one or more use classifications or not within any classification in this District. The Zoning Administrator may determine that a specific use shall not be deemed to be within a classification, whether or not named within the classification, if its characteristics are substantially incompatible with those typical of uses named within the classification.

Uses shown above as requiring a SUP or CUP will be processed per the procedures outlined for Council Use Permits and Special Use Permits in the City of Mesa Zoning Ordinance (MZO).

Pursuant to Section 11-14-4 of the MZO, land uses not listed in this development plan are considered prohibited.

D. Red Hawk Development Standards

Base Zoning District

The default base zoning district for the RHEOD shall be the Light Industrial (LI) zoning district. Any development standard not specified herein will default to the development standard of the Light Industrial (LI) zoning district within the MZO. Bulk and dimensional standards are shown below. Attached to this Development Plan as **Exhibit B** of this Development Plan is a table reflecting general development standards in the RHEOD.

Height

The allowed height of buildings and mechanical equipment within the RHEOD will range from a maximum of 50' to a maximum of 150', as shown in those areas identified on the Red Hawk Height Restriction Map provided as **Exhibit C** of this Development Plan.

Building Setbacks

Building Setbacks		
Front Yard	Sossaman Road	15 feet
Street-facing Side Yard	Elliot Road	15 feet
Interior Side Yard	Northern Boundary	20 feet
Rear Yard	RWCD Canal	15 feet
Interior Side Yard Step back	Northern Boundary	1 foot of setback for each foot of building height with a minimum of 20-feet
Minimum separation between buildings on same lot		Per City of Mesa Fire Code

Landscape Requirements: setbacks and planting requirements

Street-facing setbacks will be landscaped in accordance with Sec. 11-33-3.B.

Parking Requirements; sizes and number of spaces

Parking that is available to the public will meet the standards set forth in Chapter 32 of the City of Mesa Zoning Ordinance. Parking that is internal to a secure portion of the site and not accessible to the public will have no limitations and will be based on the applicant's parking needs based on applicant's similar facilities and/or findings of a traffic/parking study conducted by the applicant and approved by the City of Mesa Planning Director.

Parking lots shall be asphalt paved with concrete curbing unless there are site specific circumstances that require a different pavement type. Landscape islands will be provided and the end of each row of parking spaces.

Loading Spaces

Access to the loading dock areas shall be through a driveway from the site's internal, looped road. Buildings that require loading docks shall use service berths that are concrete curbed/paved.

Trash and recycling areas shall be included in the loading dock area in addition to the loading docks for material delivery. Site wall and landscape design shall screen any dock areas from adjacent properties.

Vehicular Access

The site will have at least one primary entrance and may have one or more secondary site entrances for vehicular access and egress from the site, as deemed necessary by the applicant based on the applicant's access needs based on applicant's similar facilities and/or findings of a traffic study conducted by the applicant and approved by the City of Mesa Planning Director.

E. Architectural Design Guidelines

The provisions of this section seek to create a foundation for design that will ensure the development of industrial style buildings with compatible uses of materials and colors on all elevations.

Architectural design elements for these buildings shall include:

- Building facade modulation.
- Building entrances that are readily identifiable for public safety purposes.

Building Massing

The industrial style building massing will be softened using one or more of the following techniques:

- Provision of a site fence or wall that is setback from property line.
- Setback of building structures from property line.
- Use of landscaping elements to create a sense of scale.
- Modulation of the building wall plane.
- Compliance with the heights established in the Red Hawk Height Restriction Map.

Roofs

Roof parapets may be stepped in concert with the roof slope and will extend a minimum of 42” above the level of the roof surface behind.

Screening

When possible, and when visible from public roads and/or neighboring properties, roof-mounted equipment screening shall be constructed as an encompassing monolithic element, rather than as several individual units and screening elements will be provided. However, due to the size of the RHEOD and proposed building heights, screening of the mechanical and electrical equipment from public view is not always possible. Screening of roof-mounted equipment will not be required for any equipment that cannot be seen from the surrounding public roads and/or neighboring landowners. The height of the perimeter wall(s) and accompanying landscaping will be deemed as appropriate screening elements for roof and ground-mounted mechanical and electrical equipment.

Elevations/Walls

A cohesive design shall be carried through and applied to all sides of buildings. Building elevations shall be designed to be compatible with each other and reflect a consistent design approach throughout the site. The exterior building envelope shall be designed to optimize the building’s energy performance

Building Form Standards

Allowable building materials within the RHEOD include, but are not limited to, precast concrete wall and architectural metal wall panels.

Building designs shall not mix architectural elements or ornamentation from different styles. Buildings shall be required to employ the same materials on all elevations.

Homogeneous wall facades shall be prohibited to the extent that they are visible from a public right-of-way. Design variation on long exterior walls shall be employed in order to create visual interest. Examples of such design variations include, but are not limited to, the use of offsets, recesses and/or projections; banding; reveals; scoring of building facades; color changes; texture or material changes. Design elements and features that are faux in nature and have no operational functionality or relevance to the floor plan or utility of the building for its intended purpose will not be required architectural aesthetic elements.

Primary entrances to buildings shall be made sufficiently prominent that they can easily be identified from a distance for public safety purposes. Canopies at primary employee entrances shall be provided.

Accessory or ancillary buildings, whether attached or detached, shall be of similar design, with compatible materials and construction to the nearest primary structure.

Color Palette

All exterior walls shall be painted, stained, or integrally colored in neutral desert earth tones. Accent colors found in the native desert palette will be encouraged to provide design interest and diversity.

Fencing- materials and location

A property line fence of a maximum 4 feet in height will be allowed along the perimeter of the property and will delineate the site boundary.

A secure perimeter fence 10 feet in height, made of anti-climb material will be allowed along the perimeter of the property between the property line and the building setback line.

Both of the fences described above shall be allowed along the same site boundary. If only one fence is used, the fence must be at least 6 feet in height.

Fence materials may include:

- Opaque wall (i.e. masonry unit)
- Steel anti-climb security fencing
- Iron or Wrought Iron
- Wire mesh
- Pipe-rail or post-and-rail fencing

Temporary chain link fencing may be used until permanent fencing is installed prior to the issuance of the Certificate of Occupancy. In the event the site is developed in phases, chain link fencing or other temporary fencing may be used on interior portions of the site that are not directly visible from public roads or neighbors until the balance of the site is developed and/or permanent fences are installed upon the completion of later phases.

F. Landscaping Design Standards

These landscape guidelines are intended to provide the framework for the development of the overall landscape character of the project. The guidelines shall apply to all external-facing areas of the site including edge treatments, gateways, and any external-facing vehicular circulation routes, pedestrian paths, open spaces and/or parking areas. The objective of these guidelines is to unify the external-facing views of the project.

Edge Treatments

The perimeter of the site shall incorporate the use of flowering desert shrubs and groundcovers. The edge treatments shall incorporate landscaping that will be sensitive to species selection that is compatible with the environmental conditions of the area. Drought tolerant shade trees, architecturally themed perimeter screen walls and landscape mounds and contours shall be incorporated along all site edges. Although the northern boundary of the property is adjacent to land that is zoned residential, this land is subject to a power line easement that is owned by the Desert Place at Morrison Ranch Homeowners Association. The edge treatment on this northern boundary will be sensitive to the residential properties located north of the easement and will incorporate enhanced landscaping to create a buffer.

The proposed land uses in the RHEOD are compatible with the land use designations of the properties to the east, south and west of the development site, therefore no enhanced buffering is necessary on these boundaries.

Main Site Entrance

The main entrance to the site shall be clearly identified with a monument sign and enhanced landscaping. The landscaping shall offer a formal, year-round color of the foliage selected and formal planting patterns will be used. These landscapes typically use color planted in mass or in hedgerows usually as shrubs or groundcover. Plants shall provide height and a sense of enclosure, and can include tall palms and/or desert appropriate pines, complemented by indigenous desert trees. Additional garden landscape accents will include sculptural forms such as agave, prickly pear or other succulents planted in mass, in rows or as clustered accents.

Open Space

The applicant may use open space on the site to help define pedestrian circulation routes, provide stormwater retention, or for general site design or aesthetic purposes at applicant's discretion. Interior open spaces between perimeter screening and development structures with little pedestrian activity shall be desert shrub landscaping using low water use vegetation. Native seed mixes and plants may be used in these areas to provide visual openness and low maintenance. The open spaces shall be bound by defined planting edges to provide a cohesive landscape character for the development.

Plant Palette

The plant palette shall be water conscious and will include species that promote sensitivity to the environment. The palette shall relate and complement the surrounding areas with similar species and layout. Most of the plant material will be low water use and drought tolerant. Lawns shall only be proposed for athletic fields which may be used on an interim basis.

G. Permanent Sign Regulations

The standards set forth in MZO Section 11-41-6(E) regarding signage in the LI Zoning District shall be used for all permanent signage in the RHEOD.

H. Development Processing

Site Plan, Elevations and Landscape Plan must be approved by the Planning Director prior to issuance of a building permit, pursuant to the procedures outlined in Sections 11-14-7 and 11-14-10 of the City of Mesa Zoning Ordinance. When possible, the Planning Director will consider Site Plans and building design concurrently.

I. Definitions

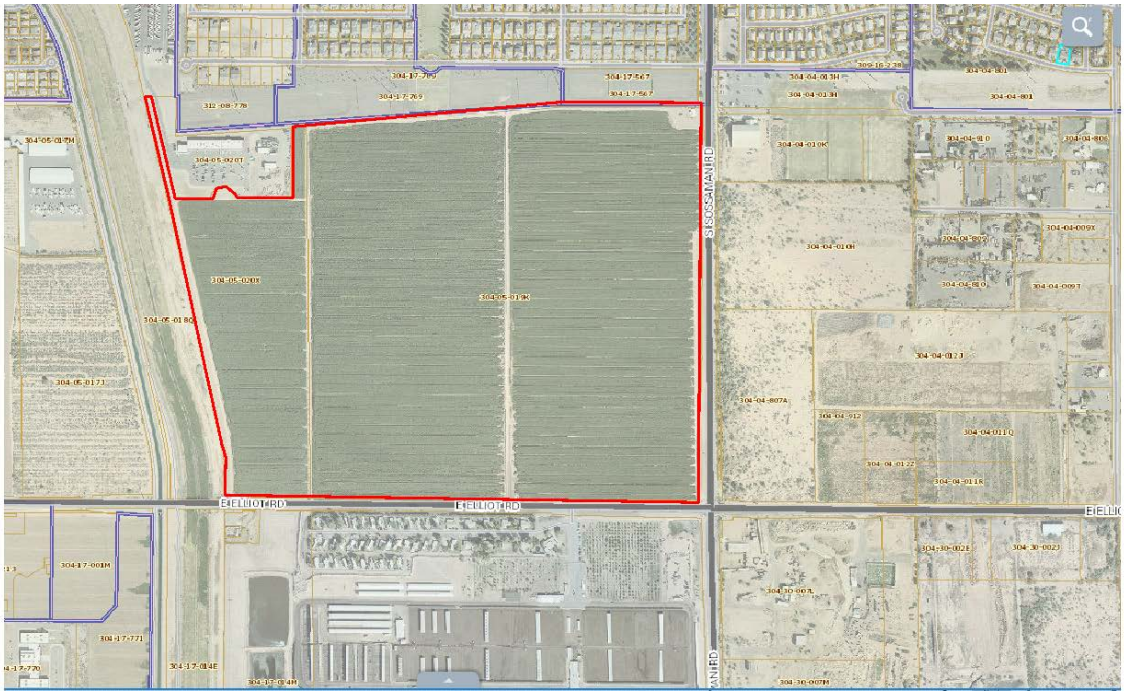
Terms used within this Development Plan are consistent with those found in Chapters 86 and 87 of the MZO with the addition of the following:

Data Center: A facility whose primary service is data processing and is used to house computer systems and associated components, such as telecommunications and storage systems, including but not limited to web hosting organizations and internet service organizations. A server farm, telecom hotel, Telehouse co-location center or any other term applicable to facilities which are used for these specified purposes shall be deemed to be a data center.

Project Red Hawk

Development Plan Map

The area covered by the Red Hawk Employment Opportunity District (RHEOD) is bound on the east by Sossaman Road, on the South by Elliott Road, on the west by the RWCD canal and on the north by a 250-foot wide electrical transmission line easement corridor, including multiple 69 kV, 230 kV and 500 kV SRP transmission lines. The property is identified by Maricopa County Assessor's Parcel numbers: 304-05-018K, 304-05-018L, 304-05-019F, 304-05-019G, 304-05-019K, 304-05-020X, 304-05-022G and 304-05-022K, and is shown in the graphic below. Ownership of the various parcels rests with four different entities as shown in the table on the following page.



Project Red Hawk Ownership Table		
MBR Land I, an Arizona General Partnership	304-05-019K	6,561,278
	304-05-019F	26,996
	304-05-019G	17,324
MBR Land I, LLP	304-05-020X	1,523,527
	304-05-018K	4,326
	304-05-018L	6,098
B&K Land Investment Co., et al	304-05-02K	17,539
Morrison Ranch Inc.	304-05-022G	435
Total		8,139,549
Acres		186.85

Mechanical and Electrical Equipment: Cooling towers, water tanks, substations, transformers, generators, future cell areas, antennae, equipment cabinets and other electrical, structural, mechanical and electrical appurtenances whether roof or ground mounted.

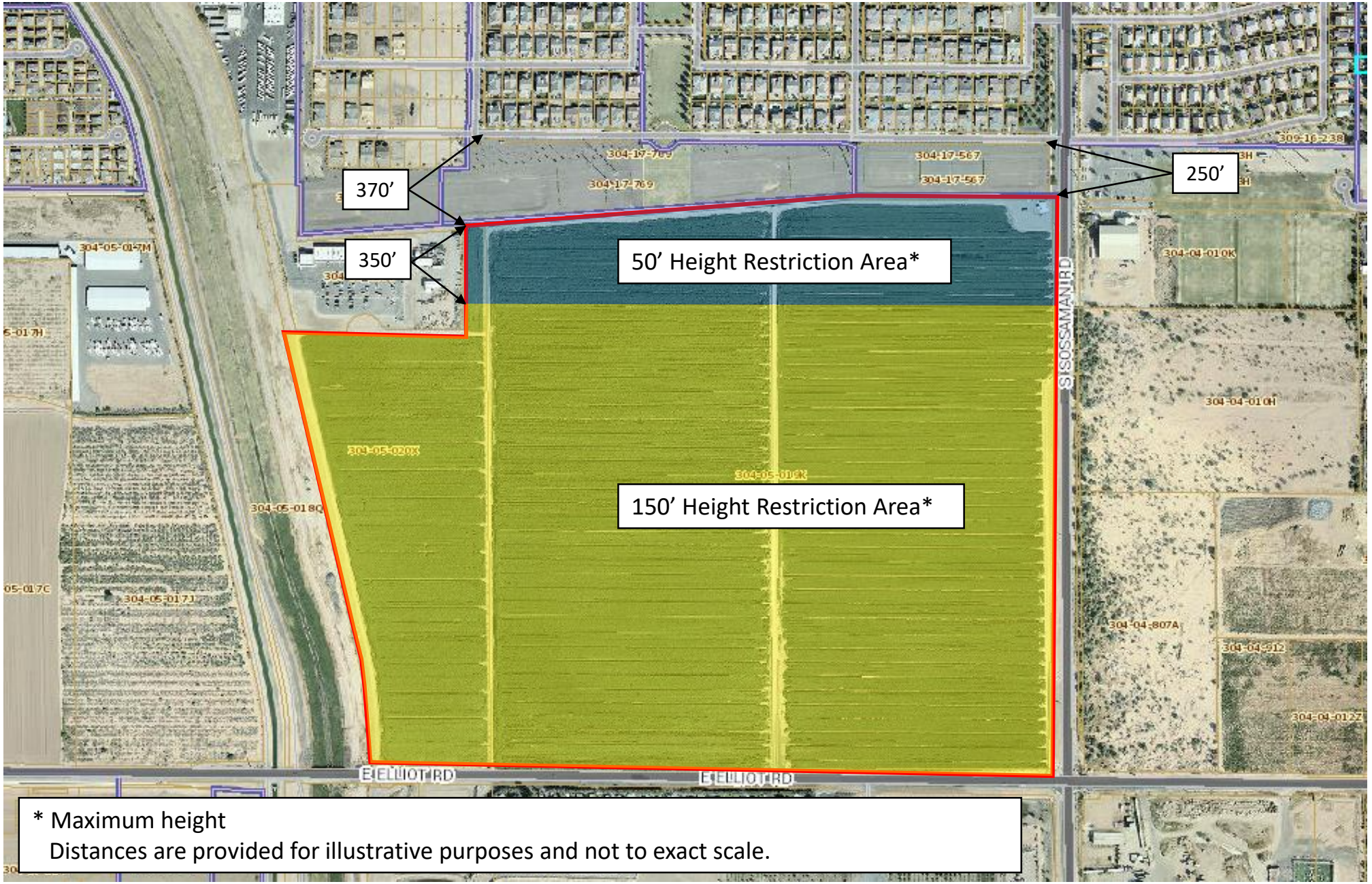
J. Administrative Procedures

Procedural matters regarding the RHEOD will follow those outlined in Chapter 14 of the MZO, specifically those contained in Sections 11-14-9 and 11-14-10 relating to amendments, administrative actions and appeals.

Exhibit B: General Development Standards

Standard	**Proposed**
Building Height	Height identified in "RHEOD Height Restriction Map"; ranges from a maximum of 50 feet to a maximum of 150 feet
Setbacks	West boundary: 15 feet; north boundary: 20 feet.
Fences/Walls	4' and 10' around entire site; Materials may include CMU's, steel anti-climb fencing; iron and may include wire mesh where not visible to the public (unless wire mesh is temporary during construction)
Parking	Parking per site plan review
Landscape Islands	Parking per site plan review
Screening:	
- of Mechanical Equipment	The height of the perimeter wall(s) and accompanying landscaping will be deemed as appropriate screening elements for roof and ground-mounted mechanical and electrical equipment. Definition created to define equipment.
- of loading docks	Site wall and landscape design shall screen any dock areas from adjacent properties.
- of trash and recycling areas	Trash and recycling areas shall be included in the loading dock area in addition to the loading docks for material delivery.
- on common property line with residential district	4' and 10' wall around entire site per description in the Project Narrative; Materials may include CMU's, steel anti-climb fencing; iron and wire mesh not visible from public view.

Red Hawk Employment Opportunity District: Height Restriction Map



* Maximum height
Distances are provided for illustrative purposes and not to exact scale.

mesa·az

Planning and Zoning Board

Staff Report

CASE NUMBER:	**ZON19-00016**
LOCATION/ADDRESS:	Within the 7100 to 7600 blocks of East Elliot Road (north side) and the 3100 to 3500 blocks of South Sossaman Road (west side).
GENERAL VICINITY:	Located north of Elliot Road and west of Sossaman Road
REQUEST:	Rezone from Limited Industrial- Planned Area Development-Planned Area Development and Planned Employment Park- Planned Area Development – Planned Area Development (LI-PAD-PAD and PEP-PAD-PAD) to Employment Opportunity (EO) to create the Red Hawk Employment Opportunity District.
PURPOSE:	This request will establish zoning to guide future development of employment and industrial uses on the property.
COUNCIL DISTRICT:	District 6
OWNER(S):	MBR Land I, an Arizona General Partnership, MBR Land I, LLP B&K Land Investment Co., et al Morrison Ranch, Inc.
APPLICANT:	W. Ralph Pew, Pew & Lake, PLC
STAFF PLANNER:	Lesley Davis, Senior Planner

SITE DATA

PARCEL NO.:	304-05-018K, 304-05-018L, 304-05-019F, 304-05-019G, 304-05-019K, 304-05-020X, 304-05-022G, and 304-05-022K
PARCEL SIZE:	187± acres
EXISTING ZONING:	PEP-PAD-PAD and LI-PAD-PAD
GENERAL PLAN CHARACTER:	Mixed Use Activity/Employment
CURRENT LAND USE:	Vacant

SITE CONTEXT

NORTH:	Existing residential – zoned RS-9-PAD-PAD and an existing Gilbert Public Schools Maintenance and Operations yard – zoned PEP-PAD-PAD
EAST:	(across Sossaman Road) Existing Church with sports fields, zoned AG and vacant land – zoned LI and LC
SOUTH:	(across Elliot Road) Existing dairy farm, zoned in Maricopa County
WEST:	(across East Maricopa Floodway and RWCD Canal) Vacant – zoned RS-43 and existing self-storage facility, zoned LI

STAFF RECOMMENDATION: Approval with conditions
P&Z BOARD RECOMMENDATION: ☒ Approval with conditions. ☐ Denial
PROPOSITION 207 WAIVER SIGNED: ☒ Yes ☐ No

HISTORY/RELATED CASES

February 22, 1990: Annexed to City of Mesa (Ord. #2842)
April 2, 1990: Rezoned from County Rural-43 to City AG (Case #Z90-009, Ord. #2511)
October 16, 2006: (adjacent to the north) City Council approval of a rezoning from AG to R1-6-PAD-DMP, R1-7-PAD-DMP, R1-9-PAD-DMP and C-1-PAD-DMP and the establishment of the Desert Place at Morrison Ranch (Residential) Development Master Plan. (Case #Z06-066, Ord. #4602)
November 20, 2006: City Council approval of a rezoning from AG to PEP-PAD-DMP and LI-PAD-DMP and the establishment of the Desert Place at Morrison Ranch (Industrial) Development Master Plan. (Case #Z06-083, Ord. #4633)

PROJECT DESCRIPTION / REQUEST

Project Red Hawk is a request for the establishment of an Employment Opportunity (EO) Zoning District within the Gateway Area, to be deemed the Red Hawk Employment Opportunity Zone (RHEOD). This area is comprised of 8 parcels, which total approximately 187 contiguous acres of land. The parcels are bounded by Elliot Road on the south, Sossaman Road on the east, the East Maricopa Floodway and RWCD Canal on the west and the existing Desert Place at Morrison Ranch residential development to the north, which is separated by a 250-foot SRP Transmission easement. This transmission easement is owned and maintained by the Desert Place at Morrison Ranch homeowner's association. Additionally, there is a Gilbert Public Schools Operations and Maintenance yard located adjacent to the northwest corner of the site.

Per Section 11-14-1 of the MZO, the purpose of the EO district is to provide an opportunity for large scale, unified and planned employment development that encourage and promote innovative and sustainable land uses.

NEIGHBORHOOD PARTICIPATION:

The applicant has completed a Citizen Participation Process, which included mailed letters to property owners within 1,000' of the site, as well as HOAs and registered neighborhoods within a mile of the site. The applicant also held a neighborhood meeting on February 27, 2019 at Paloma Community Church located adjacent (east) to the site and across Sossaman Road.

As of writing this report, staff has not been contacted by any residents or property owners in the area to express support or opposition to the request. The applicant will be providing an updated Citizen Participation Report prior to the March 19, 2019 Study Session. Staff will provide an update of the citizen participation plan during the scheduled study session.

STAFF ANALYSIS

MESA 2040 GENERAL PLAN:

Staff reviewed the request and determined it is consistent with the criteria for review as outlined in Chapter 15 (pg. 15-1) of the Mesa 2040 General Plan. The request also conforms to the General Plan character area designation of Mixed Use Activity District/Employment. Per chapter seven of the General Plan, the purpose of the Employment character area designation is to provide for a wide range of employment opportunities and viable centers of commercial activity that attract people to unique shopping and employment experiences. Rezoning the subject property to allow large scale, unified and

planned employment opportunities conforms to the goals of the Mixed Use Activity/Employment character area type. According to the applicant, the intended development and users will consist of advanced manufacturing companies with an integrated platform of ancillary land uses that support the main and primary employment uses on the property.

Gateway Strategic Development Plan:
The property is also located in the Inner Loop District of the Gateway Strategic Development Plan. Per this plan, the focus of the Inner Loop District is to provide a wide variety of uses that are generally non-residential, due to the increasing over-flight activities associated with Phoenix-Mesa Gateway Airport operations. It is also a goal of the sub area plan to create a regional employment center with a variety of jobs. The subject request is consistent with the Gateway Strategic Development Plan.

ZONING:
Chapter 14 of the Mesa Zoning Ordinance (MZO) outlines the establishment of the EO zoning designation, as well as the process and criteria creating such a district. Per Section 11-14-1 of the MZO, each EO district is unique allowing for development regulations tailored to the specific economic development objectives of a given area. As part of the requirement for creating an EO district, the request must include an EO development plan with a development plan map, development goals, specified land uses and regulations and development standards. In addition, the proposed land uses, and regulations must be based in whole or in part on the City's zoning districts, or the land uses could be new categories expressly created by the proposed EO district's development plan. In the case of the subject request, the proposed land use district is selected to be similar to the City's LI zoning district. Below is a summary of required documents associated with the required development plan to create an EO district:

1. Development Plan Map. This establishes the area covered by the zoning designation and properties that can opt in to the EO zoning designation.
2. Development Goals. This section outlines the goals and objectives of the district, as well as explanation of the goals
3. Land Use Regulations. This section provides the specific list of land uses allowed in the district as compared to general land uses allowed in the LI District.
4. Development Standards. As part of the request, the applicant is establishing the development standard, specifically relating to height, setbacks, fencing/walls, parking and screening requirements. The table below shows those proposed standards:

Table 1

Standard	Proposed
Building Height	Height identified in "RHEOD Height Restriction Map"; ranges from a maximum of 50 feet to a maximum of 150 feet
Setbacks	West boundary: 15 feet; north boundary: 20 feet.
Fences/Walls	4' and 10' around entire site; Materials may include CMU's, steel anti-climb fencing; iron and may include wire mesh where not visible to the public (unless wire mesh is temporary during construction)
Parking	Parking per site plan review

Landscape Islands	Parking per site plan review
Screening:	
- of Mechanical Equipment	The height of the perimeter wall(s) and accompanying landscaping will be deemed as appropriate screening elements for roof and ground-mounted mechanical and electrical equipment. Definition created to define equipment.
- of loading docks	Site wall and landscape design shall screen any dock areas from adjacent properties.
- of trash and recycling areas	Trash and recycling areas shall be included in the loading dock area in addition to the loading docks for material delivery.
- on common property line with residential district	4' and 10' wall around entire site per description in the Project Narrative; Materials may include CMU's, steel anti-climb fencing; iron and wire mesh not visible from public view.

5. Architectural Design Guidelines. This section goes beyond the standards contained in the Zoning Ordinance for the industrial buildings and provides guidelines for architectural design, building massing, roofs, screening, elevations/walls, building form standards, color palette and fencing materials and location.
6. Landscape Design Standards. This section provides detailed design expectations on edge treatments, gateways and major site entrances, open space, and plant palette.
7. Permanent Sign Regulations. The proposed signage on the property are the same as in the LI district.
8. Development Processing. Site Plan, Elevations and Landscape Plan must be approved by the Planning Director prior to issuance of a building permit, pursuant to the procedures outlined in Sections 11-14-7 and 11-14-10 of the MZO.
9. Definitions. This section includes a definition for Data Center. Currently, there is no such definition in the MZO. Data Centers are an allowable use under Business Services within the LI Zoning District but are not defined in the code.
10. Administrative Procedures. This section establishes procedures for amendments, administrative actions and appeals in accordance with Chapter 14 of the MZO.

As discussed, the goal of the EO district is to offer the opportunity for property owners and prospective employers the flexibility in development standards that accommodate market changes while providing incentives for high quality development that is consistent with the goals of the City's General Plan and applicable sub area plans. The subject request and associated development plan and standards conform to the criteria for creating an EO district outlined in Chapter 14 of the MZO. The proposed request includes adoption of design guidelines, a list of prohibited uses, and building height allowance to create the desired employment and advanced manufacturing corridor.

CONCLUSION:
The subject request is consistent with the Mesa 2040 General Plan, the Mesa Gateway Strategic Development Plan, and conforms with the criteria outlined Chapter 14 of the Zoning Ordinance. Staff recommends approval with the following conditions:

CONDITIONS OF APPROVAL:

1. Compliance with the EO development plan dated March 12, 2019.
2. Compliance with all City development codes and regulations, except as modified by the Development Plan.
3. Compliance with all requirements of the Subdivision Regulations.
4. Compliance with all requirements of the Design Review.
5. Due to the proximity to Phoenix-Mesa Gateway Airport, any proposed permanent or temporary structure is subject to an FAA filing for review in conformance with CFR Title 14 Part 77 (Form 7460) to determine any effect to navigable airspace and air navigation facilities. If required, an FAA determination notice of no hazard to air navigation shall be provided prior to building permit issuance.

EXHIBIT I
NOISE EMISSIONS AND COMMUNICATION INTERFERENCE

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

Background and Existing Conditions

Corona discharge from electrical transmission lines generates audible noise, and radio and television interference. Corona is a luminous discharge that emanates from an energized conductor due to ionization of the surrounding air 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, conductor diameter, conductor bundle, height of conductors above ground, line 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 discharge increases. This corona activity contributes to a small increase in power loss and is the source of transmission line audible noise, and radio and television interference. For the Project Red Hawk (Project) Site, it is anticipated the maximum calculated voltage gradient at the conductor surface is lower than corona inception and extinction levels. Successful operation of 230 kilovolt (kV) transmission lines and associated facilities with similar gradients indicates that the Project would only create modest corona effects.

Noise

Noise is defined as unwanted sound. Sound travels in waves from a specific source and exerts a sound pressure level (referred to as sound level), which is measured in decibels (dB). Zero dB corresponds roughly to the threshold of average human hearing and 120 to 140 dB corresponds to the threshold of pain. Human response to noise is subjective and can vary from person to person. Factors that can influence individual response include intensity, frequency, and time pattern of the noise; the amount of background noise prior to the intruding noise; and the nature of work or human activity that is exposed to the noise. **Table I-1** depicts average decibel levels for everyday sounds.

Table I-1. Common Noise Levels

Type	Description	Decibel Level
Painful	Firearms, air raid siren, jet engine	140 dB
	Jet take-off, amplified rock music at 4-6 feet, car stereo, band practice	120 dB
Extremely Loud	Snowmobile, chain saw, pneumatic drill	100 dB
	Lawnmower, shop tools, truck traffic, subway	90 dB

Table I-1. Common Noise Levels		
Type	**Description**	**Decibel Level**
Very Loud	Alarm clock, busy street	80 dB
	Conversation, dishwasher	60 dB
Moderate	Moderate rainfall	50 dB
	Quiet room	40 dB
Faint	Whisper, quiet library	30 dB
Source: American Speech-Language-Hearing Association 2017		

Audible noise associated with transmission lines as a result of corona discharge is a function of line voltage. The amount of audible noise is directly related to the level of corona activity, which in turn is affected by the conductors' physical condition, contamination and meteorological conditions, most notably rain. Transmission line audible noise is characterized by crackling, frying, sputtering, and low frequency tones, which are best described as humming sounds. Audible noise from transmission lines primarily occurs during foul weather conditions. Audible noise increases with rain or during dust storms, although it is generally masked by the background noise of rain and wind. In dry or fair weather conditions, the conductors operate below the corona-inception level and noise is typically only slightly audible at the edge of the transmission line right-of-way (ROW).

For the new switchyard and substations, the transformers are expected to be the major source of audible noise. The predominant noise from a transformer is a hum, comprised of sound in the frequency range of 75 hertz (Hz) to 1200 Hz, within the frequency range of the human ear. The transformer sound level is specified at the time of purchase and the specified sound level is controlled by the design and manufacturing of the transformer. The specifications for a transformer require a design that is in compliance with the sound level limits specified by industry standards, governing regulations, or local ordinances. Disconnect switches and circuit breaker operations create momentary, but very infrequent noise.

Environmental noise is usually measured in A-weighted decibels (dBA). Environmental noise typically varies over time, and different types of noise descriptors are used to account for this variability. The noise descriptor most commonly used to establish noise exposure guidelines for specific land uses is the day/night average noise level, commonly referred to as DNL. The noise level experienced at a particular site or area depends on the distance between the source and a specific receptor (humans, wildlife, etc.), presence or absence of noise barriers and other shielding features, and the amount of noise reduction provided by the intervening terrain. Some land uses are considered more sensitive to noise levels than others due to the amount of noise exposure and the types of activities typically involved.

Sources of noise around the Project Site primarily relate to standard noise from nearby agricultural, industrial, commercial and residential land uses and transportation sources and would include nearby Sossaman Road, Elliot Road, and local access traffic. The Project Site is also located in the

Phoenix-Mesa Gateway Airport, Airport Overflight 3 Area**.** This area, which is considered to be influenced by aircraft operations, requires Public Disclosure of Potential Noise Impacts.

The Project Site can be categorized as being largely vacant, with some surrounding agricultural, industrial, residential, commercial and vacant lands. Typical ambient noise levels for residential range from 50 to 60 dBA and the other land uses like industrial and agricultural would vary from 50 to 80 dBA depending on timing and use.

Sensitive receptors in the immediate area of the Project Site include a residential subdivision to the north and a few residences to the south associated with a dairy farming operation. However, there is an existing high voltage transmission line corridor between the Project Site and the residences to the north. The non-residential receptors within 1,000 feet of the Project Site include Canyon Valley School, northwest of the Project Site, and Paloma Church located to the east of the Project Site. There are no other sensitive noise receptors located within 1,000 feet of the Project.

Noise impacts from the Project would result from construction, operation, and maintenance activities. During construction, equipment used for clearing and grading, assembly and erection of the components, and rehabilitation activities would generate noise. This heavy equipment would include cranes, backhoes, trucks, and tractor graders. **Table I-2** identifies typical construction equipment noise levels.

Table I-2. Typical Construction Equipment Noise Levels

Equipment Type	**Noise Level at 50 Feet**
Backhoe	85 dB
Cranes	85 dB
Front-end loader	85 dB
Concrete truck/mixer	85 dB
Auger Drill Rig	85 dB
Water truck	81 dB
Tractor grader	80 dB
Flat-bed trucks	84 dB
Source: Federal Highway Administration Noise Handbook. August 2006	

Noise from construction activities may be audible, particularly to the closest residents in the subdivisions north of the Project Site, as well as a small residential area south of Project Site. This construction noise, however, would not be considered to be a major impact, because construction would occur during daytime hours when tolerance to noise is higher and likely to be considered only a nuisance.

During high-voltage transmission line operation, generated noise from transmission lines can best be described as a crackling or hissing sound and would be similar to the noise generated from the existing transmission lines north of the Project Site. Generally, noise is not noticeable on a 230kV transmission line, but may occur during wet-weather conditions such as rain, and possibly during the summer for brief periods after wind storms deposit dust on the line conductors. During maintenance activities, noise could be generated from a vehicle driving to and around the Project Site or equipment and crew conducting maintenance or repairs.

Noise generated by the construction of the Project would be consistent with other agricultural, industrial, residential and commercial development that exists around the Project Site. In the case that night-time construction is necessary, the Project would comply with noise ordinances in the City of Mesa.

Due to the predominately agricultural, industrial, residential, commercial and vacant nature of the Project Site and vicinity, operational noise impacts to residents and other land uses will be minimal.

Communication Interference

High voltage transmission line radio frequency noise is not expected to be noticeable outside the immediate vicinity of the transmission lines. Radio interference is most likely to affect the amplitude modulation (AM) broadcast band; frequency modulation (FM) radio is rarely affected by transmission lines. Only AM receivers located immediately adjacent to the transmission line have the potential to be affected by radio interference, and the effect may only be significant during rainy weather.

The radiated noise field intensity diminishes with increasing frequency. At frequencies above 30 megahertz, the radiated noise field intensity is so low it is difficult to detect. Therefore, FM radio reception and cellular telephone communication are above the frequency range where radio interference has been experienced with previous projects, and no objectionable interference is expected with any of the Project components. At the frequency range of FM radio or above, any rare instance of interference would generally be due to microsparks, which can be identified and corrected.

Salt River Project Agricultural Improvement and Power District (SRP) utilizes field intensity instrumentation capable of measuring radiated noise and interference from 150 kilohertz up to 1 gigahertz. These instruments are used for investigating reports of unusual relatively high transmission line noise, as well as for compiling ambient noise level data.

Radio interference is expected to be minimal due to the surrounding land uses in the area which are agricultural, industrial, residential, commercial and vacant lands. Furthermore, SRP is ready to address radio interference resulting from construction and operation of the proposed Project with corrective measures such as smoothing nicks on the conductor surface or tightening hardware, which can be applied to mitigate radio interference complaints. In addition to any repairs, relevant corrective actions may include adjusting or modifying receivers; adjusting, repairing, replacing or

adding antennas; antenna signal amplifiers; filters or lead-in cables; or other corrective actions. Based on the design parameters and physical configuration of the proposed facilities for the Project, no objectionable noise and interference with radio signals is anticipated.

References

American Speech-Language-Hearing Association, Noise, 2017, accessed 8/16/2019. [Online] Located at: http://www.asha.org/uploadedFiles/AIS-Noise.pdf

Occupational Safety and Health Administration, Occupational Noise Exposure. Accessed 8/16/19. [Online] Located at: https://www.osha.gov/SLTC/noisehearingconservation/

Federal Highway Administration Noise Handbook. August 2006 [Online], accessed 8/6/2019. Located at: http://www. nrc.gov/docs.pdf

EXHIBIT J
SPECIAL FACTORS

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

Summary of Routing and Public Process for the Project Red Hawk

As described earlier in this Application, Salt River Project Agricultural Improvement and Power District (SRP) initiated the Project Red Hawk (Project) as a result of a single customer request for energy at its proposed data center. This Project includes only the infrastructure associated with this data center with all infrastructure sited in SRP's right-of-way or on the customer's property. Typically this kind of request and project would not include a formal public process. However, SRP conducted a process to inform stakeholders and the public about this Project. Applicable information associated with this process is included below:

- Briefings with public officials representing the region and jurisdictional agencies: 19 (see **Table J-1**);
- Outreach to Stakeholders and Organizations: 19 (see **Table J-2**);
- Mailings: Post cards mailed through the U.S. Post Office announcing the Project and the filing of the CEC Application; and
- E-blast: Electronic communication sent notifying of the CEC Application filing.

Table J-1. Contacts with Jurisdictions and Stakeholders

Contact Date	Affiliation
8/20/2019	Mesa Mayor John Giles
8/21/2019	Mesa Councilmember Kevin Thompson
8/20/2019	Maricopa County Supervisor Steve Chucri
8/21/2019	Senator Eddie Farnsworth
8/21/2019	Representative Warren Peterson
8/21/2019	Representative Travis Grantham
8/20/2019	Senator David Farnsworth
8/20/2019	Representative Kelly Townsend
8/20/2019	Representative John Filmore
8/20/2019	Arizona Governor's Staff, Hunter Moore
Week of 8/19/19	Arizona Corporation Commission
9/3/2019	Town of Gilbert Staff, Rene Guillen and Amy Arguilez
9/5/2019	Maricopa County Supervisor, Jack Sellers

Table J-2. Outreach to Stakeholders and Organizations	
Contact Date	**Affiation**
9/5/2019	Dahlia Point Subdivision
9/5/2019	Morrison Ranch Subdivision
9/5/2019	Sonoran Springs Subdivision
9/5/2019	Boulder Creek Subdivision
9/5/2019	Gilbert Unified School District
9/5/2019	SJJ Land Investments LLC
9/5/2019	B & K Land & Investment Company
9/5/2019	Paloma Soccer Complex (Church)
9/5/2019	Morrison Ranch (Developer Office)
9/5/2019	Flood Control District of Maricopa County
9/5/2019	Wild West Paintball & Airsoft
9/5/2019	Leman Academy of Excellance
9/5/2019	The Liberty Arts Academy
9/5/2019	The Groves Apartments
9/5/2019	Eastpoint
9/11/2019	San Tan Charter
9/11/2019	Dodds Elliot & Sossaman Trust
9/13/2019	SLPR LLC
9/13/2019	LaAldea

The mailer notice was sent to property owners within ½ mile of the Project Site and collateral material are included in **Exhibit J-1**. The notice identified the Project name as Allium but that name has changed to Project Red Hawk.

In addition to the public process included above, SRP provided a variety of opportunities for members of the public to participate during the siting process. These opportunities included:

- Project web site and comment form: SRP maintains a Project website, *www.srpnet.com/redhawk* and *www.srpnet.com/allium*. Both website URLs direct the public to the proper site. Members of the core Project team reviewed and replied to every comment; and
- Toll-free telephone Project information line: 833.310.6345

EXHIBIT J-1
PUBLIC PROCESS MATERIALS

SRP ALLIUM PROJECT

NEW PROJECT ADDRESSES FUTURE ENERGY NEEDS

You are receiving this notice from SRP as part of our efforts to inform property owners about an upcoming project to provide energy services and infrastructure to a large commercial customer near Elliot and Sossaman roads. This property is located on land that is in an area designated for industrial, employment and mixed-use development. The area is actively marketing to high-tech customers south of the existing SRP Browning to Santan high-voltage power line corridor.

SRP has received a request to provide energy to Allium Energy LLC on its new 187-acre parcel for a data center located in east Mesa, Arizona (see map on the back). As a public power provider, SRP is responsible for ensuring all customers are served with affordable and reliable electrical services. As a first step in providing service, SRP is preparing a permit application to be filed through the Arizona Corporation Commission (ACC). The application, if granted, would permit the high-voltage facilities needed to support this customer's property.

For more than 100 years, SRP has focused on long-range planning and collaboration efforts that support economic development by providing reliable energy supplies that enable growth and high-tech development in the communities we serve.

We are notifying property owners and stakeholders within a half-mile of the proposed data center. The project will connect a new 230 kV switchyard to the existing Browning to Santan power line located in SRP's transmission corridor immediately north of the project site. The switchyard will serve 230 kV transformers connected by up to 22 double-circuit structures with an average height of 130 feet. Each of these transformers will be strategically placed throughout the customer's property to serve a portion of the customer load. All electrical facilities will be located on the 187-acre customer-owned parcel.

More information about the project can be found on SRP's website at **srpnet.com/allium**. You can also call **(833) 310-6345**.

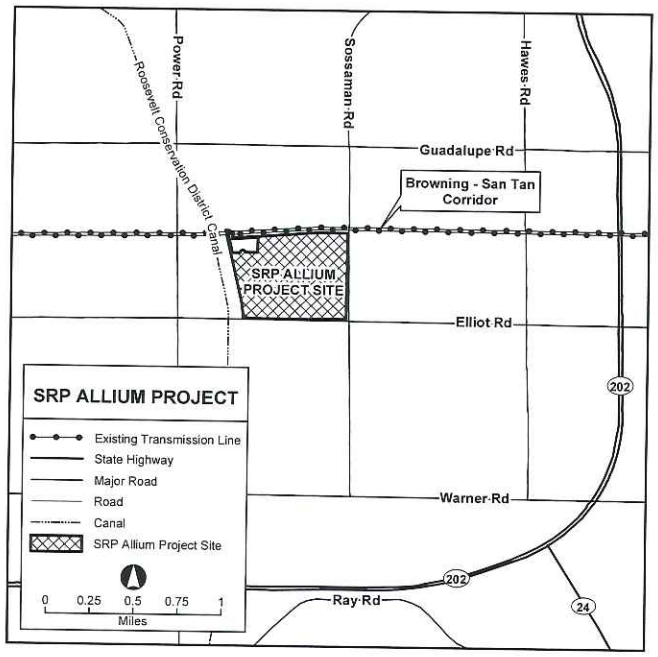
SRP will submit an application for a Certificate of Environmental Compatibility (CEC) to the ACC. It is estimated that hearings before the Arizona Power Plant and Transmission Line Siting Committee will occur in late 2019.

Delivering water and power®

For complete project information, visit **srpnet.com/allium** or call the toll-free project line at: **(833) 310-6345**.

P.O. Box 52025
Phoenix, AZ 85072-2025

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PROJECT RED HAWK

Formerly the Allium Project. See how new electric infrastructure will support the growing technology industry in Mesa.

HOME | PROJECT MAP AND DETAILS | HEARING SCHEDULE | CONTACT SRP



ABOUT THE PROJECT

SRP has received a request to provide energy to a commercial customer on its new 187-acre parcel for a data center located in east Mesa, Arizona. As a public power provider, SRP is responsible for ensuring that all customers are served with affordable and reliable electrical services.

SRP is preparing a permit application to be filed through the Arizona Corporation Commission (ACC). The application, if granted, would permit the high-voltage facilities needed to support this customer's property.

See project map and details

CONTACT US

If you have questions or comments for SRP about the project, please complete our contact form or call **(833) 310-6345**.

PROJECT RED HAWK

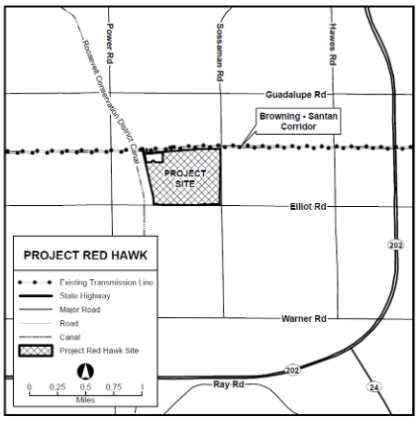
Formerly the Allium Project. See how new electric infrastructure will support the growing technology industry in Mesa.



NEW PROJECT ADDRESSES FUTURE ENERGY NEEDS

On Aug. 21, 2019, SRP began a process to inform the public about an upcoming project to provide energy services and infrastructure to a commercial customer on its new 187-acre parcel for a data center located near Elliot and Sossaman roads in east Mesa, Arizona.

The property is located on land that is in an area designated for industrial, employment and mixed-use development. The area is actively marketing to high-tech customers south of the existing SRP Browning to Santan high-voltage power line corridor.



Click on map to open larger version.

The proposed Project Red Hawk will connect a new 230 kV switchyard to the existing Browning to Santan power line located in SRP's transmission corridor immediately north of the project site. The switchyard will serve 230 kV transformers connected by up to 22 double-circuit structures with an average height of 130 feet. Each of these transformers will be strategically placed throughout the customer's property to serve a portion of the customer load. All electrical facilities will be located on the 187-acre customer-owned parcel.

PUBLIC OUTREACH

As a public power provider, SRP is responsible for ensuring that all customers are served with affordable and reliable electrical services. As a first step in providing service, SRP is notifying property owners and stakeholders within a half mile of the proposed data center.

SRP will prepare a permit application for a Certificate of Environmental Compatibility (CEC) to be filed through the Arizona Corporation Commission (ACC). It is estimated that hearings before the Arizona Power Plant and Transmission Line Siting Committee will occur in late 2019. The application, if granted, would permit the high-voltage facilities needed to support this customer's property.

For more than 100 years, SRP has focused on long-range planning and collaboration that supports economic development by providing reliable energy supplies that enable growth and high-tech development in the communities we serve.

Leave a comment

If you have questions or comments for SRP about the project, please use our contact form or call **(833) 310-6345**.

PROJECT RED HAWK

Formerly the Allium Project. See how new electric infrastructure will support the growing technology industry in Mesa.



HEARING SCHEDULE

There are no public hearings scheduled at this time for Project Red Hawk. Hearing dates, times and locations will be made available here once announced.

SRP is preparing a permit application to be filed through the Arizona Corporation Commission (ACC) for Project Red Hawk. Once filed, it is estimated that hearings before the Arizona Power Plant and Transmission Line Siting Committee will occur in late 2019. The application, if granted, would permit the high-voltage facilities needed for the project.

CONTACT SRP

If you have questions or comments for SRP about the project, please complete our contact form or call **(833) 310-6345**.

PROJECT RED HAWK

Formerly the Allium Project. See how new electric infrastructure will support the growing technology industry in Mesa.

HOME | PROJECT MAP AND DETAILS | HEARING SCHEDULE | CONTACT SRP



CONTACT SRP ABOUT PROJECT RED HAWK

Please use the contact form or call **(833) 310-6345** to submit your questions or comments.

For more information about the Certificate of Environmental Compatibility process, please visit the Arizona Corporation Commission (ACC) website.

First Name **M.I.** ***(Optional)*** **Last Name**

Address

ZIP: **City:** **State:**

Email address

Phone number ***(Optional)***

Questions: ***(Optional)***

Submit

PROJECT RED HAWK OUTREACH REPORT			
Interaction Date	Contact ID	Contact Type (Contact ID) (Contact)	Comments
8/19/19	Elijah Abinah	ACC	Introduction to the project
8/19/19	Sandra Kennedy	ACC	Introduction to the project
8/19/19	Justin Olson	ACC	Introduction to the project
8/19/19	Lea Marquez-Peterson	ACC	Introduction to the project
8/19/19	Boyd Dunn	ACC	Introduction to the project
8/19/19	Bob Burns	ACC	Introduction to the project
8/20/19	David Farnsworth	Elected Official	Introduction to the project
8/20/19	Kelly Townsend	Elected Official	Introduction to the project
8/20/19	John Fillmore	Elected Official	Introduction to the project
8/20/19	John Giles	Elected Official	Introduction to the project
8/20/19	Steve Chucri	Elected Official	Introduction to the project
8/20/19	Hunter Moore	Elected Official	Introduction to the project
8/21/19	Kevin Thompson	Councilmember	Introduction to the project
8/21/19	Eddie Farnsworth	Elected Official	Introduction to the project
8/21/19	Warren Petersen	Elected Official	Introduction to the project
8/21/19	Travis Grantham	Elected Official	Introduction to project
8/25/19	Holly Sitzler	Property Owner	Project concerns
8/25/19	Blanca Loera	Property Owner	Requested project information
9/3/19	Rene Guillen	City	Project update
9/3/19	Amy Arguilez	City	Provided Project Information
9/4/19	Cynthia Franklin	Property Owner	Customer inquired about the project
9/4/19	Simone Rodgers	Property Owner	Requested project information
9/5/19	Jack Sellers	Elected Official	Project update
9/5/19	Janeen Watson	HOA Manager	Outreach to provide project information
9/5/19	Albert Dutchover	School Administrator	Outreach to provide project information
9/5/19	Kendra Gray	HOA Manager	Outreach to provide project information
9/5/19	Charles Stewart	Developer	Outreach to provide project information
9/5/19	Morrison Ranch	Business	Outreach to provide project information
9/5/19	Joseline Castaneda	Business	Outreach to provide project information
9/5/19	Jake Lau	Business	Outreach to provide project information
9/5/19	Dennis O'Reilly	School Administrator	Outreach to provide project information
9/5/19	Jayne Bostow	School Administrator	Outreach to provide project information
9/5/19	Brady Wald	Principal	Outreach to provide project information
9/5/19	Mary Thompson	Business	Outreach to provide project information
9/5/19	Amanda Reding	Business	Outreach to provide project information
9/5/19	James Ball	Civic Organization	Outreach to provide project information
9/5/19	James Ball	Civic Organization	Outreach to provide project information
9/5/19	Millie Laughten	Property Manager	Outreach to provide project information
9/5/19	Emily Ottens	HOA Manager	Outreach to provide project information
9/6/19	Theresa Mao	Landowner	Requested project information
9/9/19	Kevin Thompson	Councilmember	Project update
9/9/19	John Giles	Elected Official	Project update
9/10/19	Albert Dutchover	School Administrator	Provided project information
9/11/19	Marlene Armstrong	Principal	Left a message to provide project information
9/11/19	Robert Dodds	Business	Left a message to provide project information
9/13/19	Karen Mealha	Business	Provided project information
9/13/19	Chris Reynolds	HOA Manager	Provided project information
9/13/19	Marlene Armstrong	Principal	Provided project information