Cochise County

Development Services
Planning Division

Public Programs...Personal Service
www.cochise.az.gov

APPLICATION FOR A SPECIAL USE

Applicant's Name: Silicone Ranch

Name of All Property Owner(s): Sulphur Springs Valley Electric Cooperative, Inc.

Applicant Mailing Address:

222 Second Ave., Ste 1900, Nashville, TN 37201

Street # Town State Zip code

Subject Property Address (if different than mailing address):

Intersection of North Central Highway and West Bagby Road, Cochise County, AZ

Street # Town State Zip code

Email Address: Adrian.Markocic

Phone Number: 412.297.1671 / 615.577.4604

Tax Parcel Number: 40411070 and 40505502

Current Zoning Designation: Rural-4 (R-4)

Comprehensive Plan Land Use Category/Growth Area: Category D (Rural)

Comprehensive Plan Land Use Designation: NA

Area Plan Designation (if applicable): NA

Size of Property (in acreage or square feet): 158.7 acres

How many acres will be cleared and developed? 158.7 acres

Describe your relationship to this application. (Select one)

☐ I am the property owner

☑ I am an authorized agent for the property owner

Bisbee Office
1415 Melody Lane, Building F
Bisbee, Arizona 85603
520-432-9300
520-432-9278 fax
planningandzoning@cochise.az.gov

If the applicant is not the property owner, please attach a notarized letter of authorization to this application.

The Purpose of a Special Use

Special Uses include uses or activities with a greater potential for impacts on neighboring properties than the permitted uses in a Zoning District. Examples of Special Uses are manufacturing, RV Parks, guest ranches, hospitals and schools. These more intense uses must be carefully reviewed to decide if they could make good neighbors to the existing uses. For this reason, a Special Use Permit requires a public hearing and approval by the Planning and Zoning Commission before it is allowed.

What is the Process?

1. Pre-application meeting with County planning staff.
2. Citizen Review Process – the applicant must send notice to all property owners within a radius of no less than 300 feet of the subject parcel(s), as shown on the most recent available records of the last property tax assessment. The County Zoning Inspector may expand the mailed notification area to greater than a 300-foot radius at time of application acceptance if there are compatibility concerns associated with the request.
3. Application Submittal
4. Technical review by relevant internal staff and external agencies
5. Public Hearing – Planning and Zoning Commission (Approval/Denial)

Appeals

The Commission action can be appealed to the Board of Supervisors by anyone who disagrees with the outcome. Appeals must be filed within fifteen (15) calendar days of the Commission action.
The applications are available online "Appeal: Board of Supervisors."

Required Submittals

1. This application
2. Citizen Review Report
3. Site plan -drawn to scale showing the existing and proposed District boundaries and an accurate legal description of the area being petitioned for amendment. See "concept plan instructions for special uses" (included in this application). Please see our website for an example plan: https://www.cochise.az.gov/development-services/special-uses
4. Letter of Authorization (for authorized agents, if applicable)
5. Hazardous or polluting materials attachment (only if hazardous materials are proposed, if applicable)
6. Deed restrictions (if applicable)
7. Outdoor lighting, manufacturers specifications (if applicable)
8. Processing Fee

Concept Plan Instructions for Special Uses

Sometimes, an applicant will seek approval for a particular special use or uses on a piece of property well ahead of actual construction or operation of that use. Often the exact dimensions of structures or configuration of uses on the property are not known yet until the uses have been approved and the applicant has invested resources into site planning. The Zoning Regulations allow for the submittal of a "Concept Plan" in lieu of a site plan in the case of phased special uses on one property or a special use where construction is not anticipated within one year. However, if the use(s) are approved by the Planning and Zoning Commission, then a detailed site plan meeting the requirements of the Zoning Regulations will be required for each use or phase and shall be in substantial conformance with the approved special use. If the site plan is not within substantial conformance with the approved use and concept plan, then the special use will need to be reviewed, in a public hearing, by the Commission once again to modify the original proposal. **Note: any**

anticipated waivers of site development standards such as setbacks, screening, landscaping or parking spaces must be requested, justified, and approved by the Commission prior to the issuance of a building permit.

In order to adequately review the proposed special use(s) on a piece of property, a Concept Plan must include at a minimum the following information:

- Parcel boundaries and adjacent roads;
- The general location, size and height of all structures and uses (existing and proposed), including minimum setbacks from parcel boundaries, washes and roads;
- The general location and minimum number of parking spaces to be provided, including proposed surface and width of driveways;
- Proposed screening and landscaping;
- Any significant topographical features (washes, hills, rock outcroppings, wetlands) and cultural features of the property and adjacent parcels;
- If applicable, project phasing (approximate schedule of uses and construction) and any other information deemed necessary to effectively review the Special Use.

Please state the reason for this request and why it should be supported.

The purpose of the SUP is to change the current Project site zoning from Rural-4 (R-4) to Light Industrial (LI) to would allow for the development and operation of the proposed Project and provide power import to assist Sulfur Springs Valley Electric Cooperative (SSVEC) in meeting their current and projected electrical demands of southeast Arizona. The regional grid has been operating at near capacity, and additional infrastructure is needed to accommodate future electrical demand. The Project will generate 20 megawatts (MW) of electricity, or enough electricity to power over 4,000 homes, along with a BESS to provide energy when the sun isn't shining.

Identify the utility company/service provider for each of the following services and state if additional provisions or future connections are required in the space below.

Service Provider	**Service Provider**	**Additional Provisions Required**
Water/Well	NA	NA
Sewer/Septic	NA	NA
Electricity	Sulfur Springs Valley Electric Cooperative	NA
Natural Gas	NA	NA
Telephone	Valley Telecom Group	NA
Fire Protection	Elfreda Fire District	NA
Waste Disposal	NA	NA

Is this request consistent with all deed restrictions or private covenants in effect for this property? If applicable, please include a copy of these restrictions/covenants with this application.

☑ Yes ☐ No ☐ Not applicable (no deed restrictions or covenants)

Describe all **existing** structures/uses present on the subject parcel. Note: the size and location of existing structures must be shown on the accompanying site plan.

Please see added SUP Narrative

Describe all **proposed** structures/uses on the parcel that to be placed on the parcel. Note: the size and location of proposed structures must be shown on the accompanying site plan.

Please see added SUP Narrative

Is the proposed special use consistent with stated purpose of the current zoning district? Explain.

Please see added SUP Narrative

Describe all intermediate and final products/services that will be produced/offered/sold, if applicable.

Please see added SUP Narrative

What materials will be used to construct the new building(s)? (Note, for an existing building(s), please also list the construction type(s), i.e., factory-built building, wood, block, metal).

Please see added SUP Narrative

Will the project be constructed/completed within one year or phased?

☑ One year

☐ Phased

If this is a phased project, describe the phases here and physically depict them on the site plan.
No, the project will be developed in one phase.

What are the days and hours of operation (if applicable)?

Days of the week: NA

____ AM to ____PM

Number of employees (if applicable):

Initially 150 Future: 1

Total average daily traffic generated (non-residential uses):

How many vehicles will be entering and leaving the site (per day)? See attached

Total trucks (e.g., by type, number of wheels, or weight)? See attached

Estimate which direction(s) and on which road(s) the traffic will travel from the site.

See attached Project Narrative

If more than one direction, estimate the percentage that travel in each direction.

See attached Project Narrative

At what time of day, day of week and season (if applicable) is traffic the heaviest?

See attached Project Narrative

Water Use:

Estimate the total gallons of water needed for the proposed use: per day _____ per year _____

Please indicate your water source See attached Project Narrative

If your property is served by a private well, show the existing or proposed location on the site plan.

List any strategies you will employ, on site, to minimize water use, recycle water, and/or enhance onsite natural recharge.

See attached Project Narrative

Will your property be served by a septic system? ☐ Yes ☑ No

If yes, show the septic tank, leach field and 100% expansion area on the site plan, and indicate whether the system is existing or proposed.

Does your parcel have permanent legal access*? If no, what steps are you taking to obtain such access? (*Our Zoning Regulations state that no building permit for a nonresidential use shall be issued unless a site has permanent and direct access to a publicly maintained street or street where a private maintenance agreement is in place. Said access shall be not less than twenty (20) feet wide throughout its entire length and shall adjoin the site for a minimum distance of twenty (20) feet. If access is from a private road or easement provide documentation of your right to use this road or easement and a private maintenance agreement.)

See attached Project Narrative

Which streets or easements will be used for traffic entering or exiting the property? (Please label on the accompanying plan)

See attached Project Narrative

What impact will this have on the traffic volume of roads serving this subject property?

See attached Project Narrative

How many driveway cuts are proposed along streets or easements to allow site access? State whether this is an increase/decrease and whether any existing cuts will need relocation.

See attached Project Narrative

Does the subject parcel have site access onto a major road?

☑ Yes ☐ No

Are you requesting any modifications or waivers from site development standards? If yes, explain.

See attached Project Narrative

Is the subject property within Sierra Vista Sub-Watershed Overlay Zone? If so, please indicate this, and that you understand that it may be subject to additional plan reviews and inspections whenever a building permit is required.

☐ Yes, and I understand the permitting requirements ☑ No, it's outside the boundaries

Please describe your citizen review process (if applicable). Specifically, state whether you received any responses to your mailed notice or public meeting. Explain how your special use application has incorporated the feedback you received.

See attached Project Narrative

Describe any outdoor activity associated with your special use proposal, if applicable.

See attached Project Narrative

Will outdoor storage of equipment, materials or products be needed? If yes, show the location on the site plan. Describe any measures to be taken to screen this storage from neighboring properties.

See attached Project Narrative

Will any noise or vibrations be produced that can be heard or felt on neighboring properties on a regular basis? if yes; describe the level and duration of this noise. What measures are you proposing to prevent this noise from being heard on neighboring properties?

See attached Project Narrative

Will odors be created? If yes, what measures will be taken to prevent these odors from escaping onto neighboring properties?

See attached Project Narrative

Will any on-site activities attract pests, such as flies or mice? If yes, what measures will be taken to prevent a nuisance on neighboring properties?

No

Will additional dust be created on a regular basis? If yes, what measures will be taken to prevent this dust from escaping onto neighboring properties or roadways?

No

Is outdoor lighting proposed? If yes, show the location(s) on the site plan. Indicate how neighboring properties and roadways will be shielded from light spillover. Please submit manufacturer's specifications for all light fixtures.

☑ Yes ☐ No

Will you be performing any off-site construction (e.g., access aprons, driveways, and culverts)? If yes, show details on the site plan. Note: The County may require off-site improvements reasonably related to the impacts of the use such as road or drainage improvements.

☐ Yes ☑ No

Show on-site drainage flow on the site plan. Will drainage patterns on site be changed? If so, please indicate on the site plan and describe below.

See attached Project Narrative

If more than one acre is to be cleared, describe the proposed dust and erosion control measures to be used and show on site plan, if appropriate.

The Project will be constructed in accordance with its Stormwater Pollution Prevention Plan (SWPPP) and Dust Control Plan issued by Cochise County.

Do you anticipate the use of any hazardous or dangerous materials? If yes, please complete a "Hazardous or Polluting Materials Attachment" and attach it to this application.

☐ Yes ☑ No

I hereby certify that I am the owner or duly authorized owner's agent and all information in this questionnaire, in the Joint Permit Application and on the site plan is accurate. I understand that if any information is false, it may be grounds for revocation of the Commercial Use/ Building/ Special Use Permit. In addition, I hereby request all inspections necessary to process this application, and if the permit is issued, I request all inspections necessary to monitor progress, and document completion, at all stages of the work related to this permit. Failure to obtain permits may result in fines or other penalties.

Adrian Markocic 4/26/22

Applicant Signature Date

Special Use Permit Narrative

McNeal Solar, Cochise County, AZ

April 29, 2022

Submitted to:
Cochise County Development Services, Planning Division
1415 Melody Lane, Bldg F
Bisbee, AZ 85603

Prepared for

SILICON RANCH

222 Second Avenue, Suite 1900
Nashville, TN 37201

Prepared by

TETRA TECH

350 Indiana Street, Ste 500
Golden, CO 90401

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Acronyms and Abbreviations

AADT	Average Annual Daily Traffic
ADOT	Arizona Department of Transportation
APN	Assessor's Parcel Number
Applicant	SR McNeal, LLC
ARS	Arizona Revised Statute
ASM	Arizona State Museum
AZGFD	Arizona Game and Fish Department
AZGS	Arizona Geological Survey
BESS	battery energy storage system
dBA	A-weighted decibel
ESA	Endangered Species Act
IPaC	Information for Planning and Consultation
msl	mean sea level
MW	megawatt
NRHP	National Register of Historic Places
Project	McNeal Solar Power and Battery Energy Storage System Project
PV	photovoltaic
R-4	Rural-4
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Office
SSVEC	Sulphur Springs Valley Electric Cooperative
SUP	Special Use Permit
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

SR McNeal, LLC (Applicant), a wholly owned subsidiary of Silicon Ranch Corporation, is requesting a Cochise County Special Use Permit (SUP) in order to construct, operate, maintain, and decommission the proposed McNeal Solar Power and Battery Energy Storage System (BESS) Project (Project), a photovoltaic (PV) solar facility comprising two parcels (Figure 1). Table 1 below lists the Project parcels, including the Assessor's Parcel Numbers (APNs), individual and total parcel acreage, and location. Parcel reports downloaded from Cochise County are provided in Appendix A.

Table 1. Proposed SUP Parcels

APN	Acreage	Location
40411070	80.0	Section 33, T21, R26
40505002	76.29	Section 4, T21, R26
Total Acreage	156.29	-

Source: Cochise County 2022a

The Project would include a PV solar facility with an output of up to approximately 20 megawatts (MW) of electricity. A BESS will also be developed as part of the Project.

The Applicant is requesting a SUP to construct and operate the proposed Project on approximately 160 acres of undeveloped, privately owned land located approximately 3 miles southwest of McNeal and 16 miles northwest of Douglas in Cochise County, Arizona (Figure 1).

The site is generally level and located at the intersection of North Central Highway and West Bagby Road.

2.0 PURPOSE OF SPECIAL USE PERMIT

The purpose of the SUP is to change the current Project site's land use designation to allow for the development and operation of the proposed Project and provide power to assist Sulphur Springs Valley Electric Cooperative (SSVEC) in meeting their current and projected electrical demands of southeast Arizona. In a letter of support (SSVEC 2022) stated that "This is a very important project of mission at SSVEC and much-needed addition to our power supply portfolio" (Appendix B). The regional grid has been operating at near capacity, and additional infrastructure is needed to accommodate future electrical demand. The Project will generate 20 MW of electricity, or enough electricity to power over 4,000 homes, along with a BESS to provide energy when the sun is not shining.

Both the Project site and the region are well suited for the proposed changes to the current land use designation. The primary criteria for determining the location of the power generation facilities include the existence of compatible adjacent and nearby land uses, minimal topographic variability, and the proximity to existing electrical infrastructure, major transportation corridors, utility corridors, and electrical load centers.

3.0 PROJECT DESCRIPTION

The Project would include a PV solar facility with an output of up to 20 MW. The PV panels will consist of single-tilt panels, which will track the sun throughout the day; an 80 MW per hour BESS; a Project substation; and associated electrical equipment. The facility will be surrounded by a wildlife-friendly chain-link fence (Figure 2 and Appendix A).

Paved and unpaved rural roads provide access to the Project site and adjacent properties. These roads include North Central Highway that bounds the Project to the east, and West Bagby Road that bisects the northern and southern sections of the Project (Appendix C).

4.0 SPECIAL USE PERMIT CRITERIA

4.1 Consistency with Comprehensive Plan Current Zoning District

4.1.1 Comprehensive Plan

The Project parcels are designated as Category D (Rural) in the Cochise County Comprehensive Plan. The Plan defines Category D (Rural) land as having one or more of the following characteristics: "sparsely populated; larger lot sizes, agricultural production or grazing, availability of sites large enough for intensive industrial uses that cannot be accommodated in other growth areas, large expanses of private and public lands, and/or have developed and undeveloped recreational resources" (Cochise County 2015). The Project would be consistent with the Comprehensive Plan.

4.1.2 Zoning District

The Project is located in an R-4 zoning district (Figure 3). Solar facilities are allowed as a permitted use in the R-4 zoning district through issuance of an SUP (Cochise County 2021).

4.2 Traffic

During the peak commuting hours each morning and evening at the peak of construction, there would be an average of approximately 100 commuter vehicles arriving at or departing from the Project. During intermittent periods of the construction process of the Project when the racking and solar panels are being delivered, there would be an average range of 22 to 32 materials delivery truck trips per day. The construction process is estimated to take 5-6 months to complete, during which time there would be some variability in the number of workers each day. There is usually about 1 month of initiation and site preparation with fewer workers and during the following months there would be a ramp up to a higher maximum number of workers. Upon the completion of construction, testing of the installed equipment for operational reliability and safety will occur lasting 3 to 4 months. This phase will not require the use of any heavy machinery and will involve a minimal number of workers.

The Arizona Department of Transportation (ADOT) Traffic Data Management System was accessed to obtain Average Annual Daily Traffic (AADT) counts along the Project access route, which represents traffic on a typical day of the year. The AADT for North Central Highway at two separate locations close to the Project was 390 and 531, respectively, for 2021. The Project would represent an approximately

22 percent maximum increase in AADT along North Central Highway, assuming all traffic from the Project ingressed/egressed along North Central Highway.

During operation, the Applicant anticipates that a total of up to 2 trips per day would occur along primary access roadways. The trip generation during operation of the Project would occur for the operational phase of the Project, which is expected to be 40 years, but may be extended if facility components are upgraded or replaced. During operation, the Applicant anticipates that a total of 2 trips per day would occur along primary access roadways. Therefore, the transportation and traffic impacts associated with the Project operation are anticipated to be minimal.

ADOT has classified North Central Highway as a Collector Road, which means the road functions to collect traffic from all other streets and discharges the traffic onto other collectors, arterials, or highways. Collector Roads are also wide but not more than arterials, and they allow for a relatively higher speed limit. Collector Roads usually have a low flow rate (ADOT 2022).

The Applicant will develop the ingress/egress locations along West Bagby Road with potential temporary access from North Central Highway for substation delivery.

There are expected to be up to two oversized/overweight load deliveries associated with the Project for the transport of new substation equipment. The remaining heavy vehicle traffic would be standard size five-axle tractor trailers—some of these would be enclosed, and some would be in the form of flatbed trucks or smaller vehicles. Smaller heavy vehicles are likely to include water trucks, concrete trucks, and aggregate trucks. The Applicant or their contractor would obtain the necessary oversize/overweight permit from ADOT prior to delivery of these oversize/overweight loads.

resources either within the Project or offsite and would be transported to the site as needed.

4.3 Water Use

The Project would use no water resources to generate electricity. Water use during construction would occur over the 10 months needed to construct the Project. Estimated water use during construction would range from 100,000 gallons per month to 200,000 gallons per month (or up to 7.4 acre-feet per year). Much of this water would be used for dust control during construction. The Applicant would obtain water from legally permitted water resources either within the Project or offsite, which would be transported to the site as needed.

During operations, water use would be limited to solar panel washing and operation needs. Although solar panel manufacturers currently do not recommend routine washing of panels, periodic washing could be needed to optimize performance. If needed during operations, the solar modules could be washed several times per year. If panels at the Project are washed, it is anticipated that, on average, 0.5 gallon would be required per module with two washes per module per year assumed. Water would be sourced from legally permitted water resources either within the Project or offsite and would be transported to the site as needed.

4.4 Access

As discussed in Section 4.2, the Applicant will develop the ingress/egress locations along West Bagby Road and North Central Highway (Appendix C).

4.5 Clearing Permit, Dust Control, and Erosion Control

4.5.1 Clearing Permit

Since the Project would disturb more than 1 acre of land, the Applicant will obtain a Clearing Permit from Cochise County.

4.5.2 Dust Control

During clearing, and until revegetation or stabilization has taken place, dust shall be minimized through the application of generally acceptable dust suppressants (Cochise County 2022b).

4.5.3 Erosion Control

During land clearing, and until revegetation or stabilization has taken place, the Applicant will minimize erosion through the application of acceptable best management practices. Unacceptable clearing practices and erosion control measures are those that alter existing drainage patterns and/or cause property damage offsite (Cochise County 2022b).

4.6 Floodplain Regulations and Diversions

Arizona Revised Statutes (ARS) §48-3615A prohibits any activity that will divert, retard, or obstruct the flow of waters in a watercourse if it creates a hazard to life or property, without securing written approval from the County Highway and Floodplain Department, as required by ARS §48-3613. Nothing in this Ordinance alters the Flood Control District laws and regulations. The development of the Project would not require a Floodplain Use Permit from Cochise County.

4.7 Building Permits

Once the Project is near construction, the Applicant would obtain the necessary building permits from Cochise County (Cochise County 2022c).

4.8 Noise and Vibration

Noise issues associated with renewable energy facilities include construction noise and operations noise. Construction noise is temporary (short-term) and consists of increased noise levels associated with construction activities and increased traffic on area roadways. Generally, noise generated from construction of renewable energy facilities has maximum noise levels of 80 to 90 A-weighted decibels (dBA) at a distance of 50 feet. Corona (an electrical discharge) from transmission lines can create buzzing, humming, or crackling. Corona effects are expected to be low enough that no objectionable audible noise would result outside the potential right-of-way. Cochise County has potentially applicable noise regulations for the Project and are described below.

Cochise County has noise regulations based on zoning district; however, no specific noise regulations are provided for the current zoning of the Project site (RU-4). As part of the SUP process, the Applicant

will demonstrate the control of noise by adhering to the noise regulations prescribed for the other zones (all other zones adhere to the same noise regulations), which state:

> *No noise or vibration (other than normal vehicular traffic) shall be permitted which is discernible on neighboring residential sites, to the unaided human senses for 3-minutes or more duration in any one-hour of the day between the hours of 7:00 a.m. to 7:00 p.m. or of 30-seconds or more duration in any one-hour during the hours of 7:00 p.m. and 7:00 a.m.* (Cochise County 2021).

5.0 PHYSICAL SETTING AND NATURAL RESOURCES

The Project is located in the Basin and Range Physiographic Province at elevations ranging from 4,098 feet above mean sea level (msl) to 4,101 feet above msl.

5.1 Biological Resources

A Biological Resource Assessment was prepared for the Project in April 2022 (Tetra Tech 2022a; Appendix D). The Project is undeveloped land composed of intact, native semi-desert grasslands. In the surrounding area, semi-desert grasslands still predominate the landscape, but there are also scattered residences, agricultural land in the form of cultivated crops and rangelands, and the Whitewater Draw Wildlife Area.

Vegetation in the Project is composed of semi-desert grasslands with loamy/clayey soils. The residences directly south of the Project have large trees, including pine and eucalyptus. These trees are large enough for raptor nests; however, none were observed during the on-site habitat assessment. A northern harrier and red-tailed hawk were observed soaring/perching within the trees. The presence of large trees nearby, and on-site prey sources (small mammal holes, rabbits), make the Project Area potentially suitable foraging habitat for wintering bald eagles and other raptors.

Additionally, the Whitewater Draw Wildlife Area is situated directly west of the Project and hosts a wide variety of waterbird, waterfowl, and shorebird species. The Whitewater Draw has an intermittent stream and ponds that could provide habitat for a variety of birds and mammals that could pass through the Project to access the area. The Applicant had submitted a Project Evaluation Request to the Arizona Game and Fish Department (AZGFD) due to the Project's proximity to the Whitewater Draw Wildlife Area, and the AZGFD has provided comments and recommendations as seen in Appendix E. The Applicant intends to comply with the recommendations and the Applicant's comments to the Project Evaluation Request are also included.

Wildlife and plant species observed during the on-site habitat assessment are listed in Table 2.

Table 2. Species Observed During the On-Site Habitat Assessment

Species	Scientific Name
Wildlife	
Birds	
American kestrel	*Falco sparverius*
Abert's towhee	*Melozone aberti*
Cactus wren	*Campylorhynchus brunneicapillus*

Species	Scientific Name
Common raven	*Corvus corax*
Curve-billed thrasher	*Taxostoma curvirostre*
Gambel's quail	*Callipepla gambelii*
Lark bunting	*Calamospiza melanocorys*
Mourning dove	*Zenaida macroura*
Northern harrier	*Circus hudsonius*
Pyrrhuloxia	*Cardinalis sinuatus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Vesper sparrow	*Pooecetes gramineus*
Western burrowing owl / Burrowing owl	*Athene cunicularia hypuaea / Athene cunicularia*
White-crowned sparrow	*Zonotrichia leucophrys*
White-winged dove	*Zenaida asiatica*
Mammals	
Black-tailed jackrabbit	*Lepus californicus*
Coyote	*Canis latrans*
Desert cottontail	*Sylvilagus audubonii*
Javelina	*Tayassu tajacu*
Kangaroo rat	*Dypodomys* sp.
Mule deer	*Odocoileus hemionus*
Plants	
Trees	
Honey mesquite	*Prosopis glandulosa*
Velvet mesquite	*Prosopis velutina*
Shrubs	
Desert saltbush	*Atriplex polycarpa*
Goodding's willow	*Salix gooddingii*
Grasses	
Alkali sacaton	*Sporobolus airoides*
Grama sp.	*Bouteloua*
Tobosa	*Hilaria mutica*
Cactus	
Soaptree yucca	*Yucca elata*
Starvation prickly pear	*Solanum elaeagnifoli*
Other Plants	
Alkali goldenbush	*Isocoma acradenia*
Johnsongrass	*Sorghum halepense*
Longleaf ephedra	*Ephedra trifurca*
Russian thistle	*Salsola tragus*
Silverleaf nightshade	*Solanum elaeagnifoli*

5.1.1 Special-Status Plants and Other Plant Species of Concern

According to the Information for Planning and Consultation (IPaC) output for the Project Area, there are no federally listed plants potentially occurring within the Project. One species, Wright's marsh thistle, is proposed for listing as a Threatened Species; however, there is no Endangered Species Act (ESA) protection for this species because it is not listed. A review of potential species presence within the Project Area based on habitat associations for the species is listed in Table 3.

5.1.2 Special-Status Wildlife and Other Species of Concern

According to the U.S. Fish and Wildlife Service (USFWS) IPaC resources list for the Project (Appendix D), two endangered species, four threatened species, one candidate species, one proposed threatened species, and one species listed as having a non-essential experimental population have the potential to occur within the Project (Table 3). There is no USFWS-designated Critical Habitat for any federally listed species within the Project.

Arizona's Online Environmental Review Tool Report provides a list of USFWS federally listed species and Species of Concern, U.S. Forest Service Sensitive Species, AZGFD Species of Greatest Conservation Need (SGCN), AZGFD Species of Economic and Recreational Importance, and Bureau of Land Management Sensitive Species that have been documented or predicted to occur within 5 miles of the Project based on range models (Tetra Tech 2022a).

Table 3 includes a summary of all federally listed species and SGCN that were evaluated for presence and the likelihood of occurrence within and near the Project Area. For the purposes of this analysis, this list only includes federally listed endangered or threatened species, species that are proposed or are a candidate species for listing under the ESA, species protected under the Bald and Golden Eagle Protection Act, and Tier 1A and 1B fish and wildlife SGCN as identified by AZGFD.

Table 3. Federally and State Listed Species Potentially Occurring within the Project

Common Name	Scientific Name	Federal/ State Status[1/]	Habitat Associations	Likelihood of Occurrence within the Project Area[2/]
Mammals				
Jaguar	*Panthera onca*	FE / SGCN 1A	Desert grasslands to montane-conifer forest. Found in a variety of upland habitats that connect some of the isolated, rugged mountains, foothills, and ridges in Arizona. Rarely documented in Arizona, which represents the very far northern extent of their range.	Unlikely
Lesser long-nosed bat	*Leptonycteris yerbabuenae*	- / SGCN 1A	Occurs in Sonoran desert scrub and semi-desert grasslands. Roosts in caves and mines, rock crevices, or trees.	Moderate – Foraging only
Birds				
Bald eagle	*Haliaeetus leucocephalus*	BGEPA / SGCN 1A	Large rivers, lakes, and reservoirs with an abundance of fish. Nesting is typically in large trees close to water.	Moderate – Foraging only

Common Name	Scientific Name	Federal/ State Status[1/]	Habitat Associations	Likelihood of Occurrence within the Project Area[2/]
Golden eagle	*Aquila chrysaetos*	BGEPA / SGCN 1B	Occurs in open and semi-open habitats such as shrublands, grasslands, woodland-brushlands, and coniferous forests, as well as in farmland and riparian habitats. Nests on cliff faces or in large trees in mountainous canyon land, and rimrock terrains.	Moderate – Foraging only
Northern Aplomado falcon	*Falco femoralis septentrionalis*	EXPN / SGCN 1A	Desert grasslands and savannas with scattered trees and shrubs. Nesting occurs on cliffs, trees, or shrubs. The species nests in nests built by other raptors.	Low
Yellow-billed cuckoo	*Coccyzus americanus*	FT / -SGCN 1A	Riparian obligate species that requires dense cottonwood-willow forested tracts. In Arizona, the species also nests in stands of mesquite. The Project is located approximately 1 mile from Whitewater Draw, which could provide potentially suitable habitat for the species. Based on distance from Whitewater Draw, there is a low potential for the species to forage in the vicinity of the Project Area.	Low – Foraging only
Reptiles				
Northern Mexican garter snake	*Thamnophis eques megalops*	FT / SGCN 1A	Riparian habitats along large river systems. Most commonly found in cienegas (mid-elevation wetlands with highly organic, reducing characteristics).	Unlikely
Desert massasuaga	*Sistrurus tergeminus edwardsii*	- / SGCN 1A	Occurs in desert grassland and shrubland habitats, including shortgrass prairie, sandsage grasslands, shinnery oak, Chihuahuan desert, and occasionally sand dune habitat. In Arizona, known populations are associated with Tabosa grasslands in Sulphur Springs Valley. Species hibernates in rodent borrows.	Moderate
Desert box turtle	*Terrapene ornata luteola*	- / SGCN 1A	Semi-desert grasslands, and Chihuahuan desert scrub, Madrean evergreen woodlands, and Sonoran desert scrub up to 7,100 feet. Requires loose soils for burrowing.	Moderate
Amphibians				
Chiricahua leopard frog	*Rana chiricahuensis*	FT / SGCN 1A	Temperate forests, rivers, swamps, freshwater lakes and marshes, springs, and ponds, from 3,400 to 8,000 feet elevation.	Unlikely
Plains leopard frog	*Lithobates blairi*	- / SGCN 1A	Perennial rivers, streams, pools, beaver ponds, wetlands, springs, stock ponds, and irrigation sloughs.	Unlikely
Fish				
Yaqui catfish	*Ictalurus pricei*	FT / SGCN 1A	Quiet, clear pools of large rivers or streams, known from Upper Rio Yaqui River system.	Unlikely
Yaqui chub	*Gila purpurea*	FE / SGCN 1A	Clean, clear, deep pools of small streams and springs, with aquatic vegetation. Known from the Upper Rio Yaqui drainage.	Unlikely
Insects				
Monarch butterfly	*Danaus plexippus*	FC / -	Migrant through Arizona, breeding in milkweed.	Low

Common Name	Scientific Name	Federal/ State Status[1/]	Habitat Associations	Likelihood of Occurrence within the Project Area[2/]
Plants				
Wright's marsh thistle	*Cirsium wrightii*	PT / -	Occurs in alkaline soils of spring seeps and marshy edges of streams and ponds, in otherwise arid or semi-arid areas. Elevation ranging 3,450 to 8,500 feet.	Unlikely

1/ FC = Federal Candidate, FE = Federally Endangered, FT = Federally Threatened, PT = Proposed Threatened, EXPN = Experimental Population, SGCN = Species of Greatest Conservation Need.

2/ Likelihood of Occurrence: Unlikely–unsuitable habitat in Project and vicinity; Low–marginally suitable habitat in Project and vicinity; Moderate–suitable habitat present in Project, or species known to occur in habitat similar to Project.

5.2 Arizona Native Plant Survey

The Applicant conducted a survey of native plants at the Project site in April 2022 (Tetra Tech 2022b; Appendix F). The survey consisted of the identification of plants listed under the Arizona Department of Agriculture's Native Plant Law (ARS § 3-903(B)(2)). The biotic community at the site is Chihuahuan Desert scrub as defined in Brown and Lowe (1994).

Two species at the site are considered salvage restricted native plants as prescribed in ARS § 3-903(B)(2) and require a permit for removal:

- Soaptree yucca (*Yucca elata*), 886 individuals
- Cane cholla (*Cylindropuntia imbricata*), 3 individuals

Per the Arizona Department of Agriculture, private landowners have the right to destroy or remove plants growing on their land, but written notice 60 days prior to the destruction of any protected native plants (for sites greater than 40 acres) is required by the Department. The landowner also has the right to sell or give away any plant growing on the land. However, protected native plants may not be legally possessed, taken or transported from the growing site without a permit from the Arizona Department of Agriculture.

The Applicant will consult with the Arizona Department of Agriculture to legally the permit the take of the listed plant species.

5.3 Wetlands and Other Waters of the United States

Wetlands (swamps, marshes, bogs, and similar areas) and other aquatic habitats play a major role in the survival of many birds, insects, amphibians, reptiles, mammals, and plants. National Hydrographic Dataset (USGS 2022) and USFWS National Wetlands Inventory (USFWS 2021) data were reviewed, and there are no wetland or water features mapped within the Project. Additionally, no wetland or water features were identified during the March 2022 habitat assessment. Whitewater Draw, an intermittent stream, is located approximately 1 mile west of the Project. An ephemeral lake and several small ponds occur in the vicinity of Whitewater Draw situated within the Whitewater Draw State Wildlife Area (Tetra Tech 2022a).

5.4 Cultural Resources

A cultural resources desktop study prepared for the Project indicates that four cultural resources investigations were undertaken between 2003 and 2019 within a one-mile radius of the Project (Tetra Tech 2022c; Appendix G). None of the four investigations overlapped with the Project site (Table 4).

Table 4. Previous Investigations within a One-Mile Radius of the Project Site

Report Number	Author(s)	Report Title	Year
2003-77.ASM	Jones, Jeffrey T., and Allen Dart	*Cultural Resources Survey of Proposed Construction and Improvement Areas at the Whitewater Draw Wildlife Area South of McNeal in Cochise County, Arizona*. Old Pueblo Archaeology Center Letter Report No. 2003.001. Tucson, Arizona.	2003
2006-29.ASM	McKee, Brian R.	*Cultural Resources Survey of 154.1 Acres Proposed for Fencing Improvements, Moist Soil Areas, and Water Pipeline in the Whitewater Wildlife Area South of McNeal in Cochise County, Arizona.* Old Pueblo Archaeology Center Letter Report No. 20052006.005. Old Pueblo Archaeology Center, Tucson.	2006
2019-34.ASM	Wolfe, Allison	*A Class III Cultural Resources Survey of 11 Acres at the Whitewater Draw Wildlife Area, near McNeal, Cochise County.* LSD Technical Report No. 185694. Logan Simpson Design, Inc., Tucson, Arizona.	2019
2016-43.ASM	Myers, Jordan, and Andrew M Vorsanger	*A Class III Cultural Resources Survey of 360 Acres at Whitewater Draw Wildlife Area in Cochise County, Arizona*. EPG Cultural Resource Services Technical Paper No. 2016-05. Environmental Planning Group, Phoenix, Arizona.	2016

The AZSITE database shows that five cultural resources have been previously recorded within a one-mile radius of the Project (Table 5); all are archaeological sites. Of the five sites, one is a historic well, pump, and cistern likely representing the remains of a historic homestead. This site has been recommended not eligible for listing in the National Register of Historic Places (NRHP), but this recommendation has not received concurrence by the Arizona State Historic Preservation Office (SHPO). The remaining four sites have advanced Arizona State Museum (ASM) site numbers, indicating that they do not yet have formal documentation. These site numbers were assigned during the 2016 Whitewater Draw Survey conducted by Environmental Planning Group, but no other data are available in AZSITE concerning these four sites.

Table 5. Previously Documented Cultural Resources within a One-Mile Radius of the Project

Site Number	Time Period	Site Type	NRHP Eligibility
AZ FF:6:33(ASM)	Historic	Well, Pump, and Cistern	Recommended Not Eligible
AZ FF:6:40(ASM)*	No Data Available	No Data Available	No Data Available
AZ FF:6:41(ASM) *	No Data Available	No Data Available	No Data Available
AZ FF:6:42(ASM) *	No Data Available	No Data Available	No Data Available
AZ FF:6:49(ASM) *	No Data Available	No Data Available	No Data Available

* Advanced ASM site

Sites that are determined or recommended as eligible, or that lack NRHP eligibility recommendations, must be avoided during all ground-disturbing activities. Sites that are determined not eligible do not require additional management.

5.4.1 Geology

There are no documented active faults, earth fissures, earthquakes, wildfires, or landslides within the Project Area (Arizona Geological Survey [AZGS] 2022a and 2022b). The Applicant has conducted a geotechnical investigation to confirm site-specific conditions for design and construction of Project infrastructure and no geologic issues were identified that would negatively impact the Project's development.

According to the AZGS Active Mines in Arizona, there are no active mines in the Project Area (AZGS 2022c). The Arizona Oil and Gas Conservation Commission provides information related to known oil and gas infrastructure in the state (AOGCC 2021). No oil and gas wells were identified in the Project Area.

5.4.2 Visual Resources

The visual setting of the Project is primarily undeveloped with agricultural development occurring to the immediate north and east. Vacant desert is present to the south, and the Whitewater Draw Wildlife Area is located to the west.

There are no state-designated scenic roads (including scenic roads, historic roads, and parkways designations) or federally designated scenic roads (including national scenic byways and All-American road designations) in the Project Area or vicinity (ADOT 2021). Additionally, the Cochise County Comprehensive Plan ("Comprehensive Plan") did not identify any scenic roads (Cochise County 2015).

A review of sensitive receptors within the Project vicinity indicated that drivers on North Central Highway and West Bagby Road, as well as visitors to the Whitewater Draw Wildlife Area, would be sensitive receptors for the Project. Additional coordination with the community may be required to minimize impacts to these sensitive receptors.

Potential aesthetic impacts are among the most commonly expressed concerns about the development of renewable projects. Solar panels may be visible from sensitive receptors due to the relatively flat terrain, and their presence will introduce visual contrast that will change the character of the relatively undeveloped landscape. The potential for aesthetic impacts from a solar facility is based on the type of solar technology, the scenic quality of the existing landscape, the degree to which the solar project would change scenic quality, and the viewer response to the change. Visual sensitivity, a key component of viewer response, is dependent on viewer attitudes and the types of activities in which people are engaged when viewing the site. Overall, higher degrees of visual sensitivity are correlated with areas where people live, are engaged in recreational outdoor pursuits, or participate in scenic or pleasure driving. Conversely, visual sensitivity is considered low to moderate in industrial or commercial areas where the scenic quality of the environment does not affect the value of the activity.

There are no state regulations identified that are based specifically on the aesthetic characteristics of a project. In the Project Area Land Use Category (Category D [Rural]), the Cochise County Zoning Regulations state that "whenever a non-residential use abuts an area designated as Rural Residential (RR), the developed area of the non-residential site shall be screened with a 6-foot high solid screen;

otherwise, screening is not required" (Cochise County 2021). There are no designated Rural Residential Areas abutting the Target Area.

6.0 CITIZEN REVIEW PROCESS

The Applicant mailed out Project informational letters to nearby property owners on April 15, 2022 (Appendix H). As of April 26, no responses have been received from the property owners.

7.0 DECOMMISSIONING PLAN

The Applicant has reprepared a Decommissioning Plan for the Project. Please see Appendix I for a copy of the complete Plan.

8.0 REFERENCES

ADOT (Arizona Department of Transportation. 2022. Cochise County Functionally Classified Roads. Available at: https://www.apps.azdot.gov/files/maps/functional-classification/counties/cochise-county-fc-map.pdf

AOGCC (Arizona Oil and Gas Conservation Commission). 2022. Oil and Gas wells. Available online at: https://www.arcgis.com/apps/webappviewer/index.html?id=4d53e4cd05b6404f9b1ee5f067f55c04. Accessed April 2022.

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SSVEC (Sulphur Springs Valley Electric Cooperative, Inc). 2022. McNeal Solar Project Letter of Support.

Tetra Tech, Inc. 2022a. Biological Resources Assessment, McNeal Solar Project, Cochise County, AZ.

Tetra Tech, Inc. 2022b. Technical Memorandum, McNeal Solar Facility Native Plant Survey.

Tetra Tech, Inc. 2022c. Cultural Resources Due Diligence Desktop Study – SR McNeal Solar Power Project, Cochise County, Arizona.

USFWS (U.S. Fish and Wildlife Service). 2021. National Wetland Inventory. Available online at: https://www.fws.gov/wetlands/index.html. Accessed April 2022.

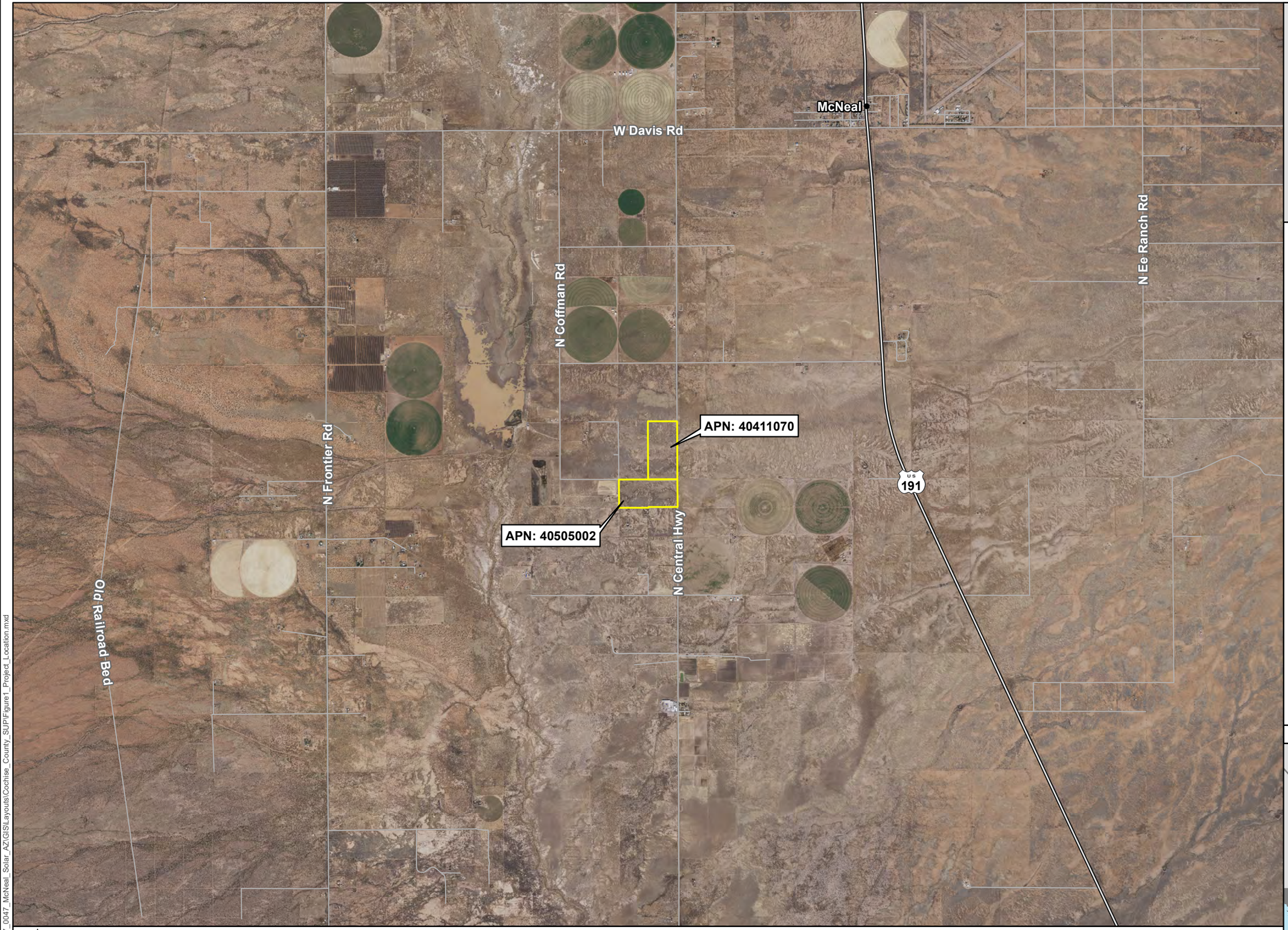
USGS (U.S. Geological Survey). 2022c. National Hydrography Dataset. National Hydrography Dataset, Texas. Available online at: http://nhd.usgs.gov/data.html. Accessed April 2022.

FIGURES

Silicon Ranch Corporation
McNeal Solar Project

Figure 1
Project Location

Cochise County, AZ



Project Features
- Project Area

Transportation
- US Highway
- Local Road

TETRA TECH

NOT FOR CONSTRUCTION

Reference Map

1:50,000 NAD 1983 StatePlane Arizona East FIPS 0201 Feet

0 0.5 1 2 Miles

Source: ESRI, USDA NAIP, BTS, US CENSUS

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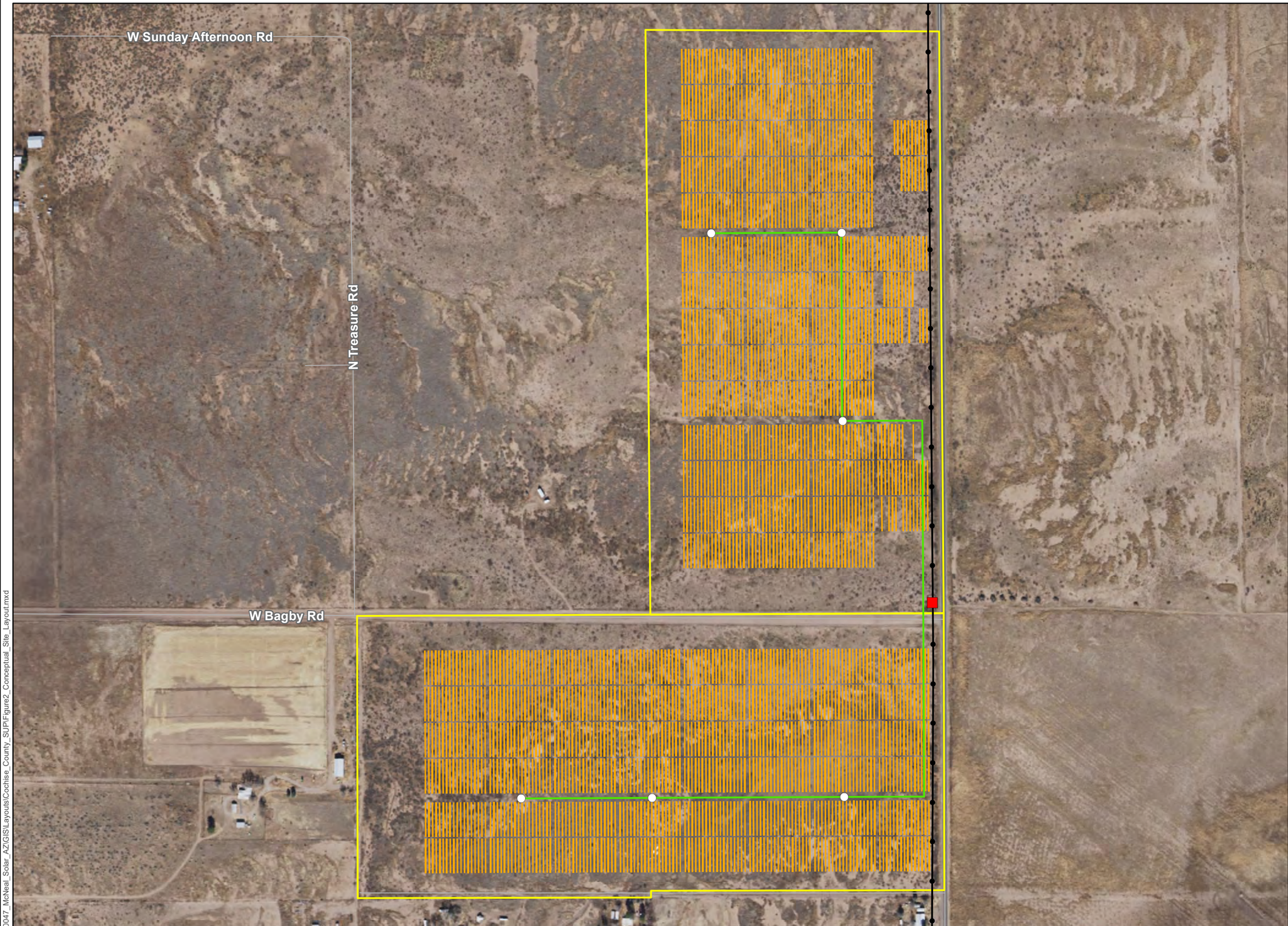

Silicon Ranch Corporation
McNeal Solar Project

Figure 2
Conceptual Site Layout

Cochise County, AZ

Project Features

- Proposed Point of Interconnection
- Pad-mounted Transformer
- Collection Line
- McNeal to Webb 115kV Transmission Line
- Solar Panel Array
- Project Area

Transportation

- Local Road

TETRA TECH

NOT FOR CONSTRUCTION

Reference Map

1:5,000 NAD 1983 StatePlane Arizona East FIPS 0201 Feet

0 250 500 1,000 Feet

Source: ESRI, USDA NAIP, BTS, US CENSUS, SRC

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Silicon Ranch Corporation
McNeal Solar Project

Figure 3
Cochise County
Current Zoning

Cochise County, AZ

Project Features
- Project Area

Transportation
- Local Road

Zoning District
- Residential (R-36)
- Rural (RU-4)

TETRA TECH

NOT FOR CONSTRUCTION

Reference Map

1:6,000 NAD 1983 StatePlane Arizona East FIPS 0201 Feet

0 250 500 1,000 Feet

Source: ESRI, USDA NAIP, BTS, US CENSUS, COCHISE COUNTY GIS

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APPENDIX A: PARCEL DATA

Property Records Inquiry

Revise Search

Print This Page

General Information

2022

Property Address

Owner Name & Address

Primary Owner
SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE INC
350 N HASKELL AVE
WILLCOX, AZ 85643-1718
100.00%

Legal Description

Subdivision: **Lot:** **Block:**

Section: 33, **Township:** 21, **Range:** 26

Extended Legal: E2 SE SEC 33 21 26 80AC

Property Information

Parcel Number: 40411070

Account Number: R000105161

Tax District: 5500

Current Mill Levy: 0

Square Feet: 3,484,800.00

Total Acres: 80.00

Sales Information

Reception #	Sale Price	Deed Type	SaleDate	Grantor	Grantee
2020-24244	$40,000	WARRANTY DEED	11/02/2020	SCHAFFER JOHN F	SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE INC
2012-19575	$0	WARRANTY DEED	09/04/2012	SCHAFFER STEPHEN ROBERT	SCHAFFER JOHN F

Value Information Approach: Market

Abstract Code/Description	Value Type	Appraised Value	Assessed Value	Taxable Value
02RL Ag/Vacant Land/Non-Profit	Land	$47,520	$7,128	$7,128
	Totals:	**$47,520**	**$7,128**	**$7,128**

Limited Property Value (LPV)

Abstract Code/Description	Value Type	LPV Actual	LPV Assessed	LPV Taxable Value
02RL Ag/Vacant Land/Non-Profit	Land	$41,004	$6,151	$6,151
	Totals:	**$41,004**	**$6,151**	**$6,151**

Account Flags

Flag Type	Flag Description	Unit Count

Property Attributes & Descriptions

Attribute	Attribute Description
The Parcel has the following Exemptions:	
A1 X Physically Unchanged Vacant Land AZ 5 Percent Rule	

<< Return to Results

Property Records Inquiry

Revise Search

Print This Page

General Information

2022

Property Address

Owner Name & Address

Primary Owner
SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE INC
350 N HASKELL AVE
WILLCOX, AZ 85643-1718
100.00%

Legal Description

Subdivision: **Lot:** **Block:**

Section: 4, **Township:** 22, **Range:** 26

Extended Legal: N2 NE LESS THE S30' OF THE NE NE OF SEC 4 22 26 76.291AC

Property Information

Parcel Number: 40505002

Account Number: R000106115

Tax District: 4500

Current Mill Levy: 0

Square Feet: 3,323,235.96

Total Acres: 76.29

Sales Information

Reception #	Sale Price	Deed Type	SaleDate	Grantor	Grantee
2021-15345	$60,000	WARRANTY DEED	06/09/2021	MILLER MICHAEL	SULPHER SPRINGS VALLEY ELECTRIC COOPERATIVE INC
2017-06473	$36,000	WARRANTY DEED	03/31/2017	SCHAFFER JOHN F III	MILLER MICHAEL
2012-19575	$0	WARRANTY DEED	09/04/2012	SCHAFFER STEPHEN ROBERT	SCHAFFER JOHN F
2012-05114	$0	WARRANTY DEED	03/08/2012	SCHAFFER JOHN F III &, WALKER NANCY SCHAFFER	SCHAFFER JOHN F III &, SCHAFFER STEPHEN ROBERT

Value Information Approach: Market

Abstract Code/Description	Value Type	Appraised Value	Assessed Value	Taxable Value

02RL Ag/Vacant Land/Non-Profit	Land	$45,698	$6,855	$6,855
	Totals:	**$45,698**	**$6,855**	**$6,855**

Limited Property Value (LPV)

Abstract Code/Description	Value Type	LPV Actual	LPV Assessed	LPV Taxable Value
02RL Ag/Vacant Land/Non-Profit	Land	$40,038	$6,006	$6,006
	Totals:	**$40,038**	**$6,006**	**$6,006**

Account Flags

Flag Type	Flag Description	Unit Count

Property Attributes & Descriptions

Attribute	Attribute Description
The Parcel has the following Exemptions:	
A1 X Physically Unchanged Vacant Land AZ 5 Percent Rule	

<< Return to Results

APPENDIX B: SSVEC Letter of Support

Sulphur Springs Valley Electric Cooperative, Inc.
A Touchstone Energy® Cooperative

April 22, 2022

Cochise County Planning Commission
1415 Melody Lane, Building G
Bisbee, AZ 85603

RE: McNeal Solar Project

Dear Friends, Neighbors, and Commissioners,

This letter is in support of the McNeal Solar project to be developed by Silicon Ranch. In an effort to solidify our long-term power requirements and meet our strategic goals, Sulphur Springs Valley Electric Cooperative (SSVEC) issued a request for proposals for the development of solar generation projects in Cochise County and Silicon Ranch Corporation (SRC) was selected to be our partner in this project. The currently proposed 20-megawatt solar facility will provide enough energy to power nearly 4,000 households served by SSEVC and the addition of a battery storage system will allow additional flexibility to utilize this energy in hours when the sun is not shining.

This project will have significant economic benefits for Cochise County and the surrounding region. It will represent tens of millions of dollars of private capital investment and contribute critical tax revenues for the local community and school district over the life of the project. It is expected that the construction of the facility will generate approximately 100 jobs over a 12-month period. SRC and its contractors will focus on hiring local subcontractors and labor. The project is scheduled to be constructed starting in the fall of 2022 and operational in May of 2023.

We have been assured, as the long-term owner and operator of the facility, that SRC is deeply committed to the communities they serve and will strive to be responsible land stewards, active members of the community, and good neighbors. We are excited about the level of commitment and experience with renewable energy that SRC brings with them. We look forward to working with them on this very important project

This solar project will generate clean, renewable energy for SSEVC, and its members-owners. This is a very important piece of our mission at SSVEC and much-needed addition to our power supply portfolio. This project will keep the economic impact of power generation local and will ensure that we keep Cochise County and SSVEC members well positioned to support the future needs of our community. I sincerely hope that you will join us in supporting this project.

Respectfully,

Daniel Wilson, P.E.
Director of Engineering
dwilson@ssvec.com

APPENDIX C: Site Plan

1 - OVERALL SITE LAYOUT

1" = 200'

0' 100' 200' 400'

SHEET NOTES:

1. LOCATIONS SHOWN ARE FOR GENERAL GUIDANCE ONLY. SLOPES OF THE SITE ARE NOT DEPICTED AND LOCATIONS MUST BE VERIFIED ON SITE BEFORE INSTALLATION.
2. FINAL STRING SIZING TO BE CONFIRMED BY ENGINEER-OF-RECORD.
3. CROSSING LOCATIONS INDICATE APPROXIMATE ROAD AND DC CROSSINGS AT EXISTING FEATURES. MV COLLECTION CROSSINGS ARE TBD AFTER MV COLLECTION LAYOUT. ALL CROSSINGS TO BE FINALIZED BY ENGINEER OF RECORD.
4. SITE LAYOUT ASSUMES ------FT TREE HEIGHT.

SYSTEM SPECIFICATIONS:

SYSTEM STC DC RATING (MW)	27.99	
SYSTEM AC CAPACITY (MW)	25.60	
SYSTEM AC RATING AT POI (MW)	20	
POI DC/AC RATIO	1.40	
MODULE MODEL	FS S6+	
MODULE STC DC RATING (W)	460	
MODULE COUNT	60852	
MODULES PER STRING	6	
13 STRNGS TRACKER	764	
12 STRNGS TRACKER	0	
10 STRNGS TRACKER	21	
7 STRNGS TRACKER	0	
STRING COUNT	10142	
INVERTER MODEL	TMEIC	
INVERTER RATING (MW)	0.80	
QUANTITY OF INVERTERS	32	
TRANSFORMER RATING (MVA)	3.20	4.00
QUANTITY OF TRANSFORMERS	3	4
DC SYSTEM VOLTAGE (V)	1500	
INTERCONNECTION VOLTAGE (KV)	69	
TRANSMISSION LENGTH	0.0	
RACKING SYSTEM	NEXTRACKER	
MODULE TILT	60	
AZIMUTH	180	
GCR	0.4	
ROW-TO-ROW SPACING (L.F.)	16.60	
ASHRAE 2% DRY-BULB TEMP MAX (°C)	35	
ASHRAE EXTREME ANNUAL MEAN MINIMUM DRY-BULB TEMP	-9.9	
BUILDABLE AREA (ACRES)	159	
FENCED AREA (ACRES)	126	
FENCING LENGTH (L.F.)	17317	
ROADS (L.F.)	7809	

	SYSTEM STC DC RATING (MW)	SYSTEM AC CAPACITY	INV QTY	INVERTER DC/AC RATIO	POI DC/AC RATIO
AREA 1	15.80	14.40	18	1.097	1.404
AREA 2	12.20	11.20	14	1.089	1.394

LEGEND

- FENCE LINE
- PROPOSED ROAD
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRICAL
- RIGHT OF WAY (ROW)
- BUILDABLE AREA
- SITE ENTRANCE AND GATE
- SITE ACCESS
- TRANSMISSION STRUCTURE SHADE

REVAMP
ENGINEERING, INC.
428 13th St.
3rd Floor
Oakland, CA 94612
www.revamp-eng.com

ENGINEER'S STAMP

PRELIMINARY - NOT FOR CONSTRUCTION

CLIENT

SILICON RANCH

PROJECT NAME
MCNEAL SOLAR

SITE LOCATION
MCNEAL, AZ
31.554792°, -109.698418°

DRAWING ISSUE	
1	04/12/2022 PRELIMINARY

REVISION ISSUE

DRAWN BY: SC CHECKED BY: AD

PROJECT NO.: 22062

DRAWING TITLE
OVERALL SITE LAYOUT

DRAWING NUMBER
E200

APPENDIX D: Biological Resource Assessment

Biological Resources Assessment

McNeal Solar Project
Cochise County, Arizona

April 2022

Prepared for

SILICON RANCH

222 Second Avenue, Suite 1900
Nashville, TN 37201

Prepared by

TETRA TECH

350 Indiana Street, Suite 500
Golden, CO 80401

Table of Contents

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Acronyms and Abbreviations

ADOA	Arizona Department of Agriculture
A.R.S.	Arizona Revised Statute
AZGFD	Arizona Game and Fish Department
BBS	Breeding Bird Survey
BGEPA	Bald and Golden Eagle Protection Act
CBC	Christmas Bird Counts
CFR	Code of Federal Regulation
°F	degrees Fahrenheit
ESA	Endangered Species Act
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NGEWM	Nongame and Endangered Wildlife Management
NLCD	National Land Cover Dataset
NWR	National Wildlife Refuge
Project	McNeal Solar Project
Project Area	the approximately 159 acres of private land where the McNeal Solar Project is located
Silicon Ranch	Silicon Ranch Corporation
SGCN	Species of Greatest Conservation Need
Tetra Tech	Tetra Tech, Inc.
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey

1.0 INTRODUCTION

Silicon Ranch Corporation (Silicon Ranch) contracted Tetra Tech, Inc. (Tetra Tech) to conduct a Biological Resource Assessment for the McNeal Solar Project (Project), a 20-megawatt solar generation facility. The Project includes approximately 159 acres of private land (Project Area, Figure 1), and is located approximately 3 miles southwest of the town of McNeal, in Cochise County, Arizona.

The Project is anticipated to consist of a solar array and associated Project facilities such as access roads, electric collector lines, a substation, an operations and maintenance facility, and laydown areas. Although the full layout of Project facilities is not yet known, the actual footprint of the developed areas are anticipated to be smaller than the Project Area.

This Biological Resources Assessment discusses the applicable laws and policies associated with Arizona species and biological resources, characterizes the environmental setting of the Project, and evaluates the potential for occurrence of special-status species within the Project Area based on available habitat. To assess the potential for occurrences of special-status species within the Project Area, the following publicly available information were reviewed:

- Arizona Game and Fish Department (AZGFD) Online Environmental Review Tool and HabiMap (AZGFD 2022a)
- AZGFD Nongame and Endangered Wildlife Program Species Abstracts (AZGFD 2022b)
- Arizona Native Plant Society Arizona Rare Plant Field Guide (AZNPS 2000)
- Google Earth Aerial Imagery (Google 2022)
- Online species profiles and distribution information (USFWS 2022a)
- USFWS Critical Habitat Portal (USFWS 2022b)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) online tool (USFWS 2022c)
- U.S. Environmental Protection Agency Ecoregion Downloads (EPA 2014)

2.0 REGULATORY FRAMEWORK

The proposed Project would be developed on private lands. A summary of potentially applicable federal, state, and local regulations related to biological resources is provided below.

2.1 Applicable Federal Regulations

2.1.1 Endangered Species Act

The Endangered Species Act (ESA) of 1973 directs the USFWS to identify and protect endangered and threatened species and their critical habitat, and to provide a means to conserve their ecosystems. Among its other provisions, the ESA requires the USFWS to assess civil and criminal penalties for violations of the ESA or its regulations. Section 9 of the ESA makes it unlawful to knowingly violate the "take" provisions of the ESA. "Take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap,

capture, or collect, or attempt to engage in any such conduct" 16 United States Code (U.S.C.) 1532. Significant modification or degradation of listed species' habitats where the modification kills or injures wildlife by significantly impairing essential behavioral patterns is considered "harm" under ESA regulations. Projects without a federal nexus work directly with USFWS to avoid adversely impacting listed species and their critical habitats. This Project has no assumed federal nexus at this time.

2.1.2 Bald and Golden Eagle Protection Act

Bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are afforded legal protection under authority of the Bald and Golden Eagle Protection Act of 1940 (BGEPA; 16 U.S.C. 668–668d). The BGEPA prohibits the take, sale, purchase, offer of sale, purchase or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof, 16 U.S.C. 668. The BGEPA also defines take to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb," 16 U.S.C. 668c, and includes criminal and civil penalties for violating the statute (see 16 U.S.C. 668). The term "disturb" is defined as agitating or bothering an eagle to a degree that causes, or is likely to cause, injury to an eagle, or either a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior, 50 Code of Federal Regulations (CFR) Section 22.3.

2.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 implements the United States' obligations under four international treaties for the protection of migratory birds that includes more than 1,000 species (Federal Register; 50 CFR 10 and 21), including the bald eagle and golden eagle. The MBTA is administered by the USFWS and prohibits "take" of migratory birds—their parts, eggs, or nests "at any time, by any means." "Take" is defined by the MBTA as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities." There has been varying guidance on the prohibition of incidental take under the MBTA. As of December 3, 2021, rulemaking re-established incidental take as a violation of MBTA, subject to Federal District Court rulings.

2.2 Applicable State Regulations

2.2.1 Arizona Game and Fish Department Regulations

Arizona State Statutes and AZGFD Commission Policies have been established to conserve, protect, restore, and enhance fish and wildlife populations and their habitats. Although these policies are primarily related to hunting, fishing, trapping, etc. of wildlife, some may be relevant to solar energy projects. Project proponents should be familiar with these statutes and policies to ensure their projects are consistent with the intent of these laws and policies.

- Arizona Revised Statute (A.R.S.) 17-309 states that it is unlawful to "take, possess, transport, release, buy, sell or offer or expose for sale wildlife except as expressly permitted by this title." According to A.R.S. 17-101, "Take" is defined as "pursuing, shooting, hunting, fishing, trapping, killing, capturing, snaring or netting wildlife or the placing or using of any net or other device or trap in a manner that may result in the capturing or killing of wildlife."

- A.R.S. § 17-235 authorizes the Arizona Game and Fish Commission to regulate the taking of migratory birds in accordance with the MBTA, described above.
- Under A.R.S. § 17-236(A), "it is unlawful to take or injure any bird or harass any bird upon its nest, or remove the nests or eggs of any bird, except as may occur in normal horticultural and agricultural practices and except as authorized by commission order".
- No state or federal lands can be closed to hunting or fishing without the consent of AZGFD, and no person may lock a gate blocking access to state lands pursuant to A.R.S. § 17-304 and Arizona Administrative Code R12-4-110. Permittees should contact the AZGFD Ombudsman at AZGFD headquarters for information regarding filing a petition with the Arizona Game and Fish Commission where a project requires the closure of state or federal lands to hunting or fishing.

Arizona's State Wildlife Action Plan (AZGFD 2012) identifies 80 Species of Greatest Conservation Need (SGCN) within Cochise County listed as 1A or 1B (AZGFD 2022b; Appendix A). SGCN are wildlife species that have been evaluated in terms of their conservation needs and vulnerability and have been determined to be at risk (i.e., vulnerable). AZGFD's SGCN list includes endangered and threatened species as well as special-status species that have been identified as needing additional protection due to declining populations.

The Nongame and Endangered Wildlife Management (NGEWM) subprogram of AZGFD is responsible for the protection, restoration, preservation, and maintenance of nongame and endangered wildlife as part of the natural diversity of Arizona and to provide opportunities for the public to enjoy nongame and endangered wildlife. "Nongame wildlife" is all wildlife except game mammals, game birds, furbearing animals, predatory animals, and game fish. "Endangered wildlife" are those species listed by the AZGFD as Tier 1A of SGCN or by USFWS as endangered, threatened, or a candidate for such status. The AZGFD's SGCN list identifies 36 Tier 1A species within Cochise County. They are responsible for the development and management of the SGCN list.

2.2.2 Native Plant Law, A.R.S. § 3-901-907

Many of Arizona's native plants are protected by the Arizona Native Plant Law in A.R.S. Title 3. The Arizona Native Plant Law was enacted to protect rare plant species and to protect some species from being over-harvested. These protected plants may not be removed from any lands, whether private or public, without the permission of the landowner and a permit from the Arizona Department of Agriculture (ADOA).

Private landowners have the right to destroy or remove plants growing on their land, as long as they notify ADOA 20 to 60 days prior to the destruction of any protected native plants. The private landowner also has the right to sell or give away any plants growing on their land. However, protected native plants may not be legally possessed, taken, or transported from the growing site without a permit from the ADOA.

2.2.3 Regulated and Restricted Noxious Weeds, Arizona Administrative Code R3-4-244

The A.R.S. in the Arizona Administrative Code R3-4-244 regulates and restricts noxious weeds to prevent further infestation or contamination. Noxious weeds include any of the plant species listed as

"Regulated pest" or "Restricted pest" by the ADOA. "Regulated pest" species may be controlled to prevent further infestation or contamination. "Restricted pest" species shall be quarantined to prevent further infestation or contamination. The Arizona Administrative Code R3-4-244 further outlines the required reporting and remediation for activities in areas with noxious weeds.

2.3 Applicable Local Regulations

2.3.1 Cochise County Special Use Permit

In Cochise County, a Special Use Permit is required for the photovoltaic solar facility generation to be placed in the Rural (RU-4) Zone. As indicated during the April 6, 2022 pre-application meeting with Cochise County, Cochise County will require review of the Project by AZGFD and may require measures recommended by AZGFD to be implemented.

3.0 ENVIRONMENTAL SETTING

3.1 Ecoregion

The Project Area lies within the Madrean Archipelago Level III Ecoregion, which is characterized by basins and ranges with medium to high relief, typically 3,000 to 5,000 feet above mean sea level (EPA 2014). The region is mostly composed of grama-tabosa shrub steppe in the basins and oak-juniper woodlands on the ranges. Within the Madrean Archipelago, the Project Area lies within the Apachian Valleys and Low Hills Level IV ecoregion. This ecoregion was historically composed of desert scrub and semi-desert grasslands; however, shrub and cacti encroachment of exotic species like honey mesquite (*Prosopis glandulosa*) has greatly altered these areas. The region also has experienced a variety of human alteration including livestock grazing, agricultural clearing and irrigation, fire suppression, and road/residential development. Annual rainfall ranges from 11 to 19 inches, and temperatures reach an average low of 31 degrees Fahrenheit (°F) in January to an average high of 95°F in July. Vegetation for this ecoregion typically includes creosote bush (*Larrea tridentata*), yucca (*Yucca spp.*), Mormon tea (*Ephedra nevadensis*), mimosa (*Mimosa dysocarpa*), ocotillo (*Fouquieria splendens*), black grama (*Bouteloua eriopoda*), tabosa (*Hilaria mutica*), sideoats grama (*Bouteloua curtipendula*), burro grass (*Scleropogon* spp.), vine mesquite (*Panicum obtusum*), curly mesquite (*Hilaria belangeri*), and bush muhly (*Muhlenbergia porteri*).

3.2 Land Cover and Land Use

Desktop analysis using the National Land Cover Database (NLCD; USGS 2022a) shows the land cover in the Project Area is composed of approximately 70.2 percent shrub/scrub, 22.6 percent grassland/herbaceous, and 11.5 percent developed, open space (Table 1; Figure 2). Land cover within the Project Area was field-verified during the March 2022 site visit (Section 4). The topography of the Project Area is generally flat. Land use and cover surrounding the Project Area includes cropland, native desert, and residences.

Table 1. Land Use and Land Cover Present in the Project Area

Land Use/Land Cover Description	Acres in Project Area	Percent of Project Area
Shrub/Scrub	111.4	70.2
Grassland/Herbaceous	35.8	22.6
Developed, Open Space	11.5	11.5
Total	158.7	100.0

3.3 Management Areas and Priority Habitat

Federal, state, and local agencies designate areas to help conserve habitats important to migratory birds and other sensitive species (e.g., National Wildlife Refuges [NWRs], National Grasslands, state parks, and state wildlife areas). There are no federally or state-managed conservation areas within the Project Area. There is no mapped USFWS-designated Critical Habitat within the Project Area (USFWS 2022b; Figure 3). There are no AZGFD-mapped Important Connectivity Zones intersecting the Project Area. However, an AZGFD Wildlife Area identified as the Whitewater Draw Wildlife Area is located immediately west of the Project Area.

The Whitewater Draw Wildlife Area is approximately 1,500 acres and managed by AZGFD for several waterbird, waterfowl, and shorebird species. Approximately 20,000 sandhill cranes (*Grus canadensis*) roost at the Whitewater Draw Wildlife Area during the winter months. The area is dominated by an ephemeral lake, several smaller ponds, and an intermittent stream. Vegetation is composed of semi-arid grasslands, riparian habitat, and approximately 600 acres of wetlands. Much of the Whitewater Draw Wildlife Area occurs in an Audubon Important Bird Area, which was designated because of regional significance of it being the primary wintering area for sandhill cranes in Arizona (Audubon 2022a). Additionally, a wide variety of waterfowl are present in the winter at Whitewater Draw Wildlife Area.

There are some concerns regarding potential impacts to waterfowl from solar facilities. A study carried out by Kagan et. al. 2014 identified greater waterbird mortality at photovoltaic (PV) sites in the desert than at parabolic mirror or power tower sites. They hypothesized that the PV cells could be mistaken for large waterbodies, attracting migratory waterbirds, a pattern that has been called the "lake effect." The "lake effect" hypothesizes that obligate waterbirds could potentially collide or land on solar panels when they confuse them with water, and then would not be able to take flight because they require water for takeoff, making them more susceptible to predation. Further research is needed to determine if the "lake effect" is occurring at solar PV facilities.

4.0 ON-SITE HABITAT ASSESSMENT

4.1 Field Methods

A habitat assessment of the Project Area was conducted by a Tetra Tech biologist on March 29, 2022. The purpose of the survey was to verify the desktop assessment results, assess and record habitat for special-status species, and record important habitat features such as nests. The biologist also recorded wildlife and plant observations and took representative photographs (Appendix B). The

habitat assessment was conducted along publicly accessible roads, and the biologist was equipped with binoculars to scan features in the distance.

4.2 Field Observations

The Project Area is undeveloped land composed of intact, native semi-desert grasslands. In the surrounding area, semi-desert grasslands still predominate the landscape, but there are also scattered residences, agricultural land in the form of cultivated crops and rangelands, and the Whitewater Draw Wildlife Area, which attracts visitors for hunting and recreational use.

Vegetation in the Project Area is composed of semi-desert grasslands with loamy/clayey soils. Grasses in this vegetation community are predominantly perennial grasses (grama [*Bouteloua* spp.], tobosa [*Pleuraphis mutica*], alkali sacaton [*Sporobolus airoides*], and other unidentified grasses) interspersed with isolated patches of soaptree yucca (*Yucca elata*) and honey mesquite (*Prosopis glandulosa*). Other plants observed included alkali goldenbush *(Isocoma acradenia*), silverleaf nightshade (*Solanum elaeagnifoli*), starvation prickly pear (*Solanum elaeagnifoli*), and longleaf ephedra *(Ephedra trifurca*). Nonnative Russian thistle (*Salsola tragus*) and Johnsongrass (*Sorghum halepense*) also were present.

The residences directly south of the Project Area have large trees, including pine (*Pinus* spp.) and eucalyptus (*Eucalyptus* spp.). These trees are large enough for raptor nests; however, none were observed. A northern harrier (*Circus hudsonius*) and red-tailed hawk (*Buteo jamaicensis*) were observed soaring/perching within the trees. The presence of large trees nearby, and on-site prey sources (small mammal holes, rabbits), make the Project Area potentially suitable foraging habitat for wintering bald eagles (*Haliaeetus leucocephalus*) and other raptors.

Additionally, the Whitewater Draw Wildlife Area is situated directly west of the Project Area and hosts a wide variety of waterbird, waterfowl and shorebird species. The whitewater draw has an intermittent stream and ponds that could provide habitat for a variety of birds and mammals that could pass through the Project Area to access the area.

Wildlife and plant species observed during the on-site habitat assessment are listed in Table 2.

Table 2. Species Observed During the On-Site Habitat Assessment

Species	Scientific Name
Wildlife	
Birds	
American kestrel	*Falco sparverius*
Abert's towhee	*Melozone aberti*
Cactus wren	*Campylorhynchus brunneicapillus*
Common raven	*Corvus corax*
Curve-billed thrasher	*Taxostoma curvirostre*
Gambel's quail	*Callipepla gambelii*
Lark bunting	*Calamospiza melanocorys*
Mourning dove	*Zenaida macroura*
Northern harrier	*Circus hudsonius*

Species	Scientific Name
Pyrrhuloxia	*Cardinalis sinuatus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Vesper sparrow	*Pooecetes gramineus*
Western burrowing owl / Burrowing owl	*Athene cunicularia hypuaea / Athene cunicularia*
White-crowned sparrow	*Zonotrichia leucophrys*
White-winged dove	*Zenaida asiatica*
Mammals	
Black-tailed jackrabbit	*Lepus californicus*
Coyote	*Canis latrans*
Desert cottontail	*Sylvilagus audubonii*
Javelina	*Tayassu tajacu*
Kangaroo rat	*Dypodomys sp.*
Mule deer	*Odocoileus hemionus*
Plants	
Trees	
Honey mesquite	*Prosopis glandulosa*
Velvet mesquite	*Prosopis velutina*
Shrubs	
Desert saltbush	*Atriplex polycarpa*
Goodding's willow	*Salix gooddingii*
Grasses	
Alkali sacaton	*Sporobolus airoides*
Grama sp.	*Bouteloua*
Tobosa	*Hilaria mutica*
Cactus	
Soaptree yucca	*Yucca elata*
Starvation prickly pear	*Solanum elaeagnifoli*
Other Plants	
Alkali goldenbush	*Isocoma acradenia*
Johnsongrass	*Sorghum halepense*
Longleaf ephedra	*Ephedra trifurca*
Russian thistle	*Salsola tragus*
Silverleaf nightshade	*Solanum elaeagnifoli*

5.0 SPECIAL-STATUS PLANTS AND OTHER PLANT SPECIES OF CONCERN

According to the IPaC output for the Project Area (Appendix C; USFWS 2022c), there are no federally listed plants potentially occurring within the Project Area. One species, Wright's marsh thistle (*Cirsium wrightii*), is proposed for listing as a Threatened Species; however, there is no ESA protection for this species because it is not listed. A review of potential presence within the Project Area based on habitat

associations for the species is listed in Table 3. The Arizona Natural Heritage Program has identified 50 special-status plants occurring within Cochise County; these special-status species are listed in Appendix A (AZGFD 2022b).

5.1 Arizona Native Plants

A total of 50 plants protected by the Arizona Native Plant Law are listed for Cochise County. These protected plants may not be removed from any lands, whether private or public, without the permission of the landowner and a permit from the ADOA. A single rare plant, velvet mesquite (*Prosopis velutina*), which is protected by the Arizona Native Plant Law, was observed within the Project Area during the field assessment (Table 2). Silicon Ranch is conducting a special-status plant survey to locate and identify potential occurrences of protected plants within the Project Area.

5.2 Noxious Weeds

There are currently 53 species designated as noxious weeds in Arizona by the ADOA (ADOA 2022). Noxious weeds are divided into three classes: Class A, Class B, and Class C. Class A noxious weeds are defined as "a species of plant that is not known to exist or of limited distribution in the State and is a high priority pest for quarantine, control, or mitigation." Class B noxious weed are defined as "a species of plant that is known to occur, but of limited distribution in the State and may be a high priority pest for quarantine, control or mitigation if a significant threat to a crop, commodity, or habitat is known to exist." Class C noxious weeds are defined as "a species of plant that is widespread but may be recommended for active control based on risk assessment" (A.R.S. § 3-201, A.A.C. R3-4-101, and R3-4-201). One Class C Noxious Weed, Johnsongrass (*Sorghum halepense*), was recorded within the Project Area. Noxious weed infestations can have an adverse impact on rare and special-status plant species and native plant communities; therefore, a noxious weed plan may be required for the Project.

6.0 SPECIAL-STATUS WILDLIFE AND OTHER SPECIES OF CONCERN

6.1 Federally and State-listed Species

According to the USFWS IPaC resources list for the Project (Appendix C), two endangered species, four threatened species, one candidate species, one proposed threatened species, and one species listed as having a non-essential experimental population have the potential to occur within the Project Area (Table 3). There is no USFWS-designated Critical Habitat for any federally listed species within the Project Area (USFWS 2022b).

Arizona's Online Environmental Review Tool Report (Appendix D) provides a list of USFWS federally listed species and Species of Concern, U.S. Forest Service Sensitive Species, AZGFD SGCN, AZGFD Species of Economic and Recreational Importance, and Bureau of Land Management Sensitive Species that have been documented or predicted to occur within 5 miles of the Project Area based on range models (AZGFD 2022a). The Project's Environmental Review Tool Report (Project ID: HGIS-15464) identified six SGCN (1A and 1B) documented within 5 miles of the Project Area (Appendix D).

Although Species of Concern, SGCN, and Species of Economic and Recreational Importance species do not have any regulatory protection in Arizona, these species may require consideration and analysis in the permitting process; therefore, any potential impacts to these species should also be minimized to the extent practicable using best management practices and avoidance measures.

Table 3 includes a summary of all federally listed species and SGCN that were evaluated for presence and the likelihood of occurrence within and near the Project Area. For the purposes of this analysis, this list only includes federally listed endangered or threatened species, species that are proposed or are a candidate species for listing under the ESA, species protected under BGEPA, and Tier 1A and 1B fish and wildlife SGCN as identified by AZGFD.

Table 3. Federally and State-listed Species Potentially Occurring within the Project

Common Name	Scientific Name	Federal/ State Status[1]	Habitat Associations	Likelihood of Occurrence within the Project Area[2]
Mammals				
Jaguar	*Panthera onca*	FE / SGCN 1A	Desert grasslands to montane-conifer forest. Found in a variety of upland habitats that connect some of the isolated, rugged mountains, foothills, and ridges in Arizona. Rarely documented in Arizona, which represents the very far northern extent of their range.	Unlikely
Lesser long-nosed bat	*Leptonycteris yerbabuenae*	- / SGCN 1A	Occurs in Sonoran desert scrub and semi-desert grasslands. Roosts in caves and mines, rock crevices, or trees.	Moderate – Foraging only
Birds				
Bald eagle	*Haliaeetus leucocephalus*	BGEPA / SGCN 1A	Large rivers, lakes, and reservoirs with an abundance of fish. Nesting is typically in large trees close to water.	Moderate – Foraging only
Golden eagle	*Aquila chrysaetos*	BGEPA / SGCN 1B	Occurs in open and semi-open habitats such as shrublands, grasslands, woodland-brushlands, and coniferous forests, as well as in farmland and riparian habitats. Nests on cliff faces or in large trees in mountainous canyon land, and rimrock terrains.	Moderate – Foraging only
Northern Aplomado falcon	*Falco femoralis septentrionalis*	EXPN / SGCN 1A	Desert grasslands and savannas with scattered trees and shrubs. Nesting occurs on cliffs, trees, or shrubs. The species nests in nests built by other raptors.	Low
Yellow-billed cuckoo	*Coccyzus americanus*	FT / -SGCN 1A	Riparian obligate species that requires dense cottonwood-willow forested tracts. In Arizona, the species also nests in stands of mesquite. The Project is located approximately 1 mile from Whitewater Draw, which could provide potentially suitable habitat for the species. Based on distance from Whitewater Draw, there is a low potential for the species to forage in the vicinity of the Project Area.	Low – Foraging only

Common Name	Scientific Name	Federal/ State Status[1]	Habitat Associations	Likelihood of Occurrence within the Project Area[2]
Reptiles				
Northern Mexican garter snake	*Thamnophis eques megalops*	FT / SGCN 1A	Riparian habitats along large river systems. Most commonly found in cienegas (mid-elevation wetlands with highly organic, reducing characteristics).	Unlikely
Desert massasuaga	*Sistrurus tergeminus edwardsii*	- / SGCN 1A	Occurs in desert grassland and shrubland habitats, including shortgrass prairie, sandsage grasslands, shinnery oak, Chihuahuan desert, and occasionally sand dune habitat. In Arizona, known populations are associated with Tabosa grasslands in Sulphur Springs Valley. Species hibernates in rodent borrows.	Moderate
Desert box turtle	*Terrapene ornata luteola*	- / SGCN 1A	Semi-desert grasslands, and Chihuahuan desert scrub, Madrean evergreen woodlands, and Sonoran desert scrub up to 7,100 feet. Requires loose soils for burrowing.	Moderate
Amphibians				
Chiricahua leopard frog	*Rana chiricahuensis*	FT / SGCN 1A	Temperate forests, rivers, swamps, freshwater lakes and marshes, springs, and ponds, from 3,400 to 8,000 feet elevation.	Unlikely
Plains leopard frog	*Lithobates blairi*	- / SGCN 1A	Perennial rivers, streams, pools, beaver ponds, wetlands, springs, stock ponds, and irrigation sloughs.	Unlikely
Fish				
Yaqui catfish	*Ictalurus pricei*	FT / SGCN 1A	Quiet, clear pools of large rivers or streams, known from Upper Rio Yaqui River system.	Unlikely
Yaqui chub	*Gila purpurea*	FE / SGCN 1A	Clean, clear, deep pools of small streams and springs, with aquatic vegetation. Known from the Upper Rio Yaqui drainage.	Unlikely
Insects				
Monarch butterfly	*Danaus plexippus*	FC / -	Migrant through Arizona, breeding in milkweed.	Low
Plants				
Wright's marsh thistle	*Cirsium wrightii*	PT / -	Occurs in alkaline soils of spring seeps and marshy edges of streams and ponds, in otherwise arid or semi-arid areas. Elevation ranging 3,450 to 8,500 feet.	Unlikely

1 FC = Federal Candidate, FE = Federally Endangered, FT = Federally Threatened, PT = Proposed Threatened, EXPN = Experimental Population, SGCN = Species of Greatest Conservation Need.

2 Likelihood of Occurrence: Unlikely–unsuitable habitat in Project and vicinity; Low–marginally suitable habitat in Project and vicinity; Moderate–suitable habitat present in Project, or species known to occur in habitat similar to Project.

3 Listed in the table because the species was recorded (or sign of the species was recorded) within the Study Area during the field visit.

6.1.1 Lesser Long-Nosed Bat

Lesser long-nosed bat (*Leptonycteris yerbabuenae*) is a SGCN in Arizona. Lesser long-nosed bat range extends from central California, west to southern Arizona, New Mexico, and south to Honduras and El Salvador. Lesser long-nosed bat breeds in Arizona and travels south to Mexico during the winter

months, arriving early in April and staying through October. Habitat used by the species includes lowland desert grasslands and shrublands, extending up to transitional oak shrublands at higher elevations, not exceeding 3,500 feet. The species roosts in caves, mines, and old buildings. Lesser long-nosed bat feeds on nectars of various cactus species growing in desert grasslands, including saguaro (*Carnegiea gigantea*), ocotillo (*Fouquieria splendens*), prickly pear (*Opuntia* spp.), and organ pipe cactus (*Stenocereus thurberi*).

While the Project Area occurs in desert grassland habitat, the lack of cactus species identified within the Project Area is likely to limit the potential for the species to use the Project Area for foraging. No caves, mines, or buildings are located within the Project Area; therefore, the species is unlikely to roost in the Project Area.

6.1.2 Bald Eagle

The bald eagle is protected by the BGEPA and is a SGCN in Arizona. Bald eagles occur throughout the contiguous United States, Alaska, and Canada (Buehler 2020), and individuals can be year-round residents or winter residents in Arizona. Bald eagles are opportunistic foragers that prey primarily on fish but also feed on other aquatic and terrestrial vertebrates as well as on carrion (Buehler 2020). Bald eagles nest on large trees, cliffs, and man-made structures such as large power poles. Breeding areas are closely associated with aquatic habitats, forested shorelines, or cliffs (Buehler 2020). Bald eagle presence in Arizona is limited to the southeast part of the state and only when wintering. Wintering locations are also typically associated with aquatic areas that contain open water for foraging on fish, with wintering bald eagles roosting up to 20 miles from foraging sites, depending on abundance of prey. The wintering or non-nesting period is from October through mid-March (Buehler 2020).

The Whitewater Draw Wildlife Area, situated directly west of the Project Area, could provide potentially suitable winter roosts and foraging habitat for the species. Based on the proximity of the Project Area to Whitewater Draw, bald eagles have the potential to occur in the Project Area while foraging. Several small mammals and burrows were identified during the site visit, providing a good prey source for the species.

6.1.3 Golden Eagle

The golden eagle is protected by the BGEPA and is a SGCN in Arizona. The golden eagle is common in western North America with small populations also present in the eastern portions of Canada and the United States. Western golden eagle populations may be migratory or resident year-round (Katzner et al. 2020). Golden eagles are year-round residents in Arizona and the Project Area (Sibley 2014). Golden eagles in the western United States are most commonly associated with open and semi-open habitats such as shrublands, grasslands, woodland-brushlands, and coniferous forests as well as in farmland and riparian habitats (Kochert et al. 1986; Katzner et al. 2020). Golden eagles nest on cliff faces or in large trees, and breeding areas vary by region, but are generally associated with mountainous canyon land, rimrock terrain of open desert, grassland areas, riparian habitats, and occasionally in forested areas (Katzner et al. 2020).

According to the annual nesting reports issued by AZGFD, several golden eagle nest sites have been identified in Cochise County (AZGFD 2020). There are no cliffs, trees, or uneven terrain within the Project Area that would support nesting golden eagles. Although there are a few large trees south of the Project Area, the existing level of human activity surrounding the Project Area (nearby residences and agricultural activity) likely prevent the species from nesting there. The nearest mountains are situated more than 10 miles to the east and to the west of the Project Area. Potentially suitable foraging habitat occurs throughout the Project Area, and several small mammal observations and signs suggest that there would be adequate prey to attract the species for foraging both within the Project Area and in Whitewater Draw Wildlife Area to the west.

6.1.4 Desert Massasuaga

Desert massasuaga (*Sistrurus tergeminus edwardsii*) is a SGCN in Arizona known to occur in Cochise County. The species occurs throughout the United States from as far northeast as New York and extending across the Midwest through Colorado and into Arizona, at its very southwestern tip of its range. The species is known to occur in San Bernadino, San Simon, San Pedro, and Sulphur Springs Valleys, in Cochise County (THS 2022). Habitat for the species occurs in desert grassland and shrubland habitats, including shortgrass prairie, sandsage grasslands, shinnery oak, Chihuahuan desert, and occasionally sand dune habitat. In Arizona, desert massasuaga occurs exclusively in desert grasslands, and are known to occur specifically in Tabosa grasslands in the Sulphur Springs Valley (THS 2022).

Potential habitat for desert massasuaga occurs throughout the Project Area, in the Tabosa desert grasslands. Based on records of the species occurring within 5 miles of the Project Area and suitable habitat, the species has the potential to occur within the Project Area.

6.1.5 Desert Box Turtle

Desert box turtle (*Terrapene ornata luteola*) is a SGCN in Arizona, known to occur in Cochise County. Desert box turtle is known to occur in valleys and bajadas with semi-desert grasslands, Chihuahuan desert scrub, or plains grasslands. They are also found in oak woodlands and savanna, within the sky island mountain ranges, and along the eastern edge of the Sonoran Desert (THS 2022). The species rests and lays their eggs in burrows they dig themselves, or burrows dug by small mammals (e.g., kangaroo rat). Within Cochise County, desert box turtle is known to occur in the Sulphur Springs Valley (THS 2022). There are also known records of the species occurring within 5 miles of the Project Area. Based on the presence of desert grasslands within the Project Area and known records of the species in the vicinity, there is potential for the species to occur within the Project Area.

6.2 Migratory Birds

The USFWS IPaC report also provides a list of USFWS Birds of Conservation Concern and other migratory bird species that may occur within the vicinity of the Project Area for consideration in compliance with MBTA and BGEPA regulatory requirements (Appendix C). The IPaC identified four Birds of Conservation Concern: Bendire's thrasher (*Toxostoma bendirei*), chestnut-collared longspur (*Calcarius ornatus*), long-eared owl (*Asio otus*), and Virginia warbler (*Vermivora virginiae*). Potentially

suitable habitat for Bendire's thrasher, chestnut-collared longspur (winter only), and long-eared owl (foraging only) occurs in the Project Area. No potentially suitable habitat was observed within the Project Area for Virginia warbler.

The National Audubon Society has identified Important Bird Areas in an effort to monitor and protect these areas for avian species and habitat conservation. Arizona currently has 47 total Important Bird Areas identified. Whitewater Draw, an Important Bird Area, is located directly to the west of the Project Area (Audubon 2022a) and is known for approximately 20,000 sandhill cranes (*Grus canadensis*) that winter in the area. Additionally, Whitewater Draw attracts several species of waterfowl, waterbirds, and shorebirds that can be viewed at the Whitewater Draw Wildlife Area.

A variety of data sources were reviewed to identify any avian species with potential to occur within or near the Project Area, including field guides (e.g., Sibley 2014), eBird (Sullivan et al. 2009), results of Christmas Bird Counts (CBC; Audubon 2022b), and USGS Breeding Bird Surveys (BBS; Sauer et al. 2017). The closest CBC was located approximately 33 miles from the Project Area within dissimilar habitat, and therefore, comparisons of avian composition to the Project were not relevant. Based on review of these data sources and observations made during the habitat assessment, avian species expected to occur within the Project Area are those typically associated with desert grasslands, including (but not limited to) mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), loggerhead shrike (*Lanius ludovicianus*), northern mockingbird (*Mimus polyglottos*), scaled quail (*Callipepla squamata*), western kingbird (*Tyrannus verticalis*), Say's phoebe (*Sayornis saya*), black-throated sparrow (*Amphispiza bilineata*), and ash-throated flycatcher (*Myiarchus cinerascens*).

6.2.1 Breeding Bird Survey

The USGS BBS is a long-term avian monitoring program conducted annually during the breeding season at established 24.5-mile roadside routes across the United States and Canada (Sauer et al. 2017). The nearest BBS is route #06083, which passes through the town of McNeal and extends several miles west and east along West David Road. Landcover along the route is similar to landcover observed within the Project Area. Similar habitat compositions indicate that species detected during the BBS could breed within the desert grassland habitat that occurs in the Project Area. Data has been collected between 2012 and 2021 along the McNeal BBS route. During that time, approximately 73 species have been documented as potentially breeding in the area (USGS 2022b). The most commonly detected species on the McNeal BBS Route in 2021 were mourning dove (*Zenaida macroura*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), and white-winged dove (*Zenaida asiatica*), which are commonly occurring species in this region of Arizona. No federally listed species have been observed on the McNeal BBS Route; however, three SGCN were recorded: common nighthawk (*Chordeiles minor*), Gila woodpecker (*Melanerpes uropygialis*), and yellow warbler (*Setophaga petechia*).

6.2.2 Raptors

Based on the CBC, BBS, and range maps (Cornell Lab of Ornithology 2022), there are 22 raptor species with potential to occur within the Project Area (Table 4), including bald eagles and golden eagles.

Three raptor species have been recorded in the nearest CBC location (Audubon 2022b), and six raptor species have been recorded on the nearest BBS route (USGS 2022b).

Table 4. Raptors with Potential to Occur in the Project

Common Name	Scientific Name	Season of Occurrence[1]				
		Spring	Summer	Fall	Winter	Survey[2]
Vultures						
Turkey vulture	*Cathartes aura*	–	X	–	–	BBS
Hawks and Eagles						
Bald eagle	*Haliaeetus leucocephalus*	–	–	–	X	None
Cooper's hawk	*Accipiter cooperii*	X	X	X	X	None
Ferruginous hawk	*Buteo regalis*	–	–	–	X	None
Golden eagle	*Aquila chrysaetos*	X	X	X	X	None
Harris's hawk	*Parabuteo unicinctus*	X	X	X	X	None
Northern goshawk	*Accipiter gentilis*	X	X	X	X	None
Northern harrier	*Circus hudsoniuss*	–	–	–	X	CBC
Osprey	*Pandion haliaetus*	X	–	X	–	None
Red-tailed hawk	*Buteo jamaicensis*	X	X	X	X	Both
Rough-legged hawk	*Buteo lagopus*	–	–	–	X	None
Sharp-shinned hawk	*Accipiter striatus*	X	X	X	X	CBC
Swainson's hawk	*Buteo swainsoni*	–	X	–	–	BBC
Falcons						
American kestrel	*Falco sparverius*	X	X	X	X	BBC
Merlin	*Falco columbarius*	–	–	–	X	None
Peregrine falcon	*Falco peregrinus*	X	X	X	X	None
Prairie falcon	*Falco mexicanus*	X	X	X	X	None
Owls						
Barn owl	*Tyto alba*	X	X	X	X	None
Burrowing owl	*Athene cunicularia*	–	X	–	–	BBS
Great horned owl	*Bubo virginianus*	X	X	X	X	BBC
Long-eared owl	*Asio otus*	X	X	X	X	None
Western screech-owl	*Otus kennicottii*	X	X	X	X	None

1 Cornell Lab of Ornithology 2022; USGS 2022b

2 Indicates local surveys where each species was seen. CBC = Christmas Bird Count, BBS = Breeding Bird Survey, Both = Christmas Bird Count and Breeding Bird Surveys. None = not seen during either survey. The absence of a bird during CBC or BBS surveys does not indicate the absence of a species; its inclusion in this list is based on geographic range.

7.0 WETLANDS AND OTHER WATERS OF THE UNITED STATES

Wetlands (swamps, marshes, bogs, and similar areas) and other aquatic habitats play a major role in the survival of many birds, insects, amphibians, reptiles, mammals, and plants. National Hydrographic Dataset (USGS 2022c) and USFWS National Wetlands Inventory (USFWS 2021) data were reviewed (Figure 4), and there are no wetland or water features mapped within the Project Area. Additionally, no wetland or water features were identified during the March 2022 habitat assessment. Whitewater

Draw, an intermittent stream, is located approximately 1 mile west of the Project Area. An ephemeral lake and several small ponds occur in the vicinity of Whitewater Draw situated within the Whitewater Draw State Wildlife Area.

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FIGURES

Silicon Ranch Corporation
McNeal Solar Project

Figure 1
Site Location

Cochise County, AZ

Project Features
- Project Area

Transportation
- US Highway
- Local Road

TETRA TECH

NOT FOR CONSTRUCTION

Reference Map

McNeal
W Davis Rd
N Coffman Rd
N Frontier Rd
Old Railroad Bed
N Central Hwy
N Ee Ranch Rd
US 191

1:60,000 NAD 1983 StatePlane Arizona East FIPS 0201 Feet

0 0.5 1 2 Miles

Source: ESRI, USDA NAIP, BTS, US CENSUS

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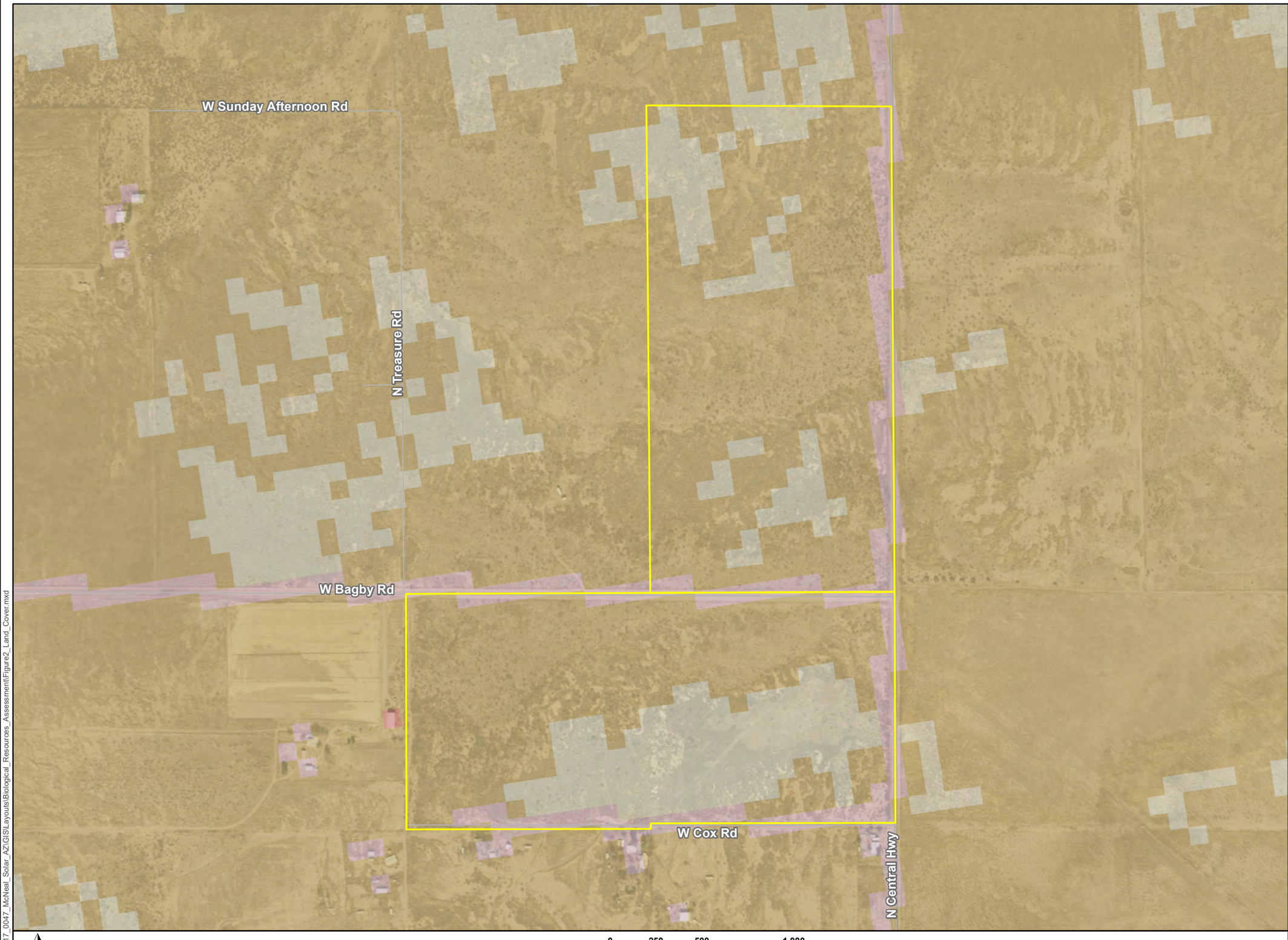
Silicon Ranch Corporation
McNeal Solar Project

Figure 2
Land Cover

Cochise County, AZ



Project Features
- Project Area

Transportation
- Local Road

Land Cover Type
- Developed, Open Space
- Developed, Low Intensity
- Shrub/Scrub
- Grassland/Herbaceous

TETRA TECH

NOT FOR CONSTRUCTION

Reference Map

1:6,000 NAD 1983 StatePlane Arizona East FIPS 0201 Feet

0 250 500 1,000 Feet

Source: ESRI, USDA NAIP, BTS, US CENSUS, NLCD 2019

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Silicon Ranch Corporation
McNeal Solar Project

Figure 3
Biological Resources

Cochise County, AZ

Project Features
- Project Area

Transportation
- Local Road

Biological Resources
- Whitewater Draw Wildlife Area (AZGFD)
- Audubon Society Important Bird Area

TETRA TECH

NOT FOR CONSTRUCTION

Reference Map

1:6,000 NAD 1983 StatePlane Arizona East FIPS 0201 Feet

0 250 500 1,000 Feet

Source: ESRI, USDA NAIP, BTS, US CENSUS, PAD-US 2.1, TETRA TECH 2022, AUDUBON SOCIETY

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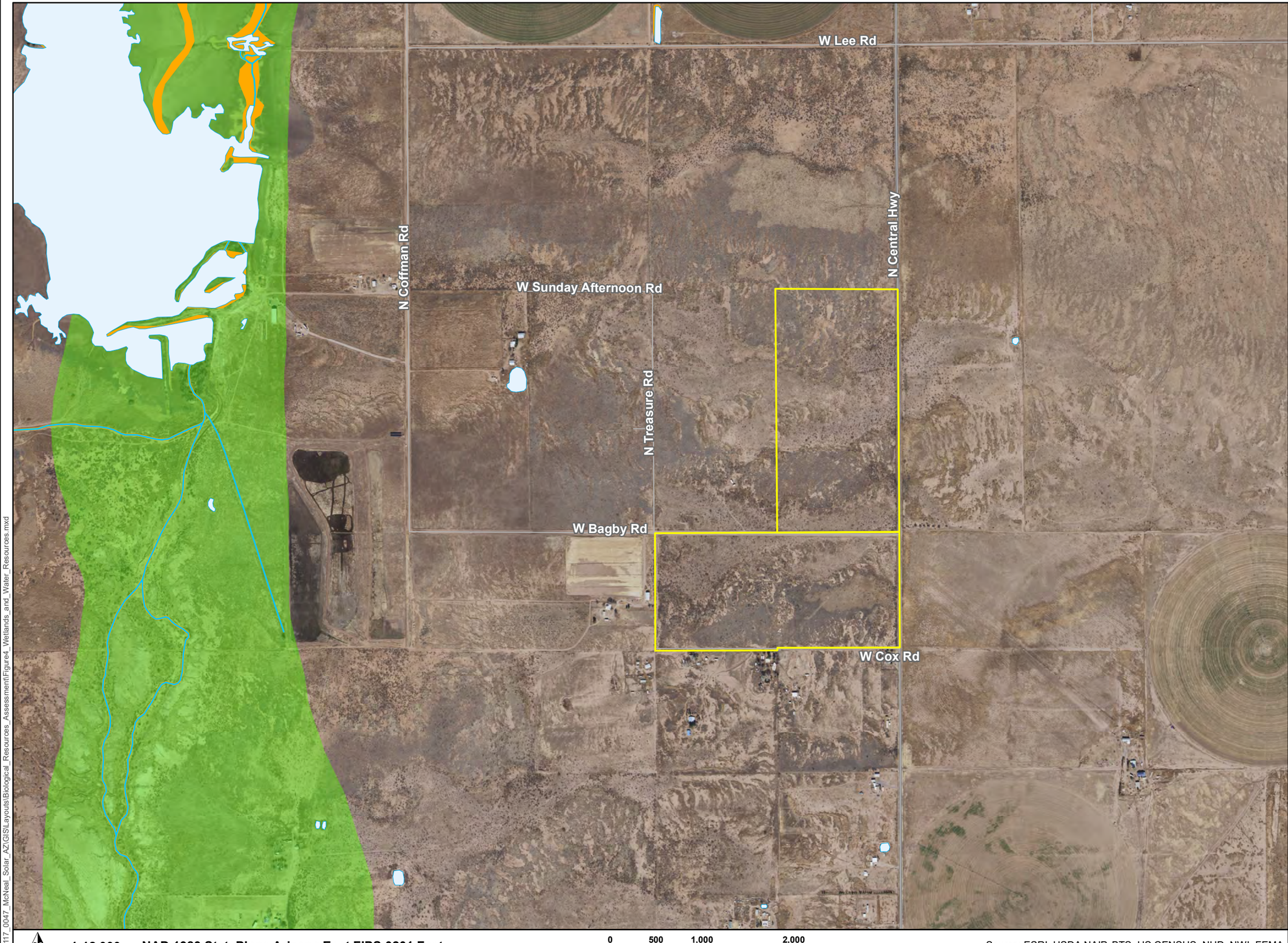
Silicon Ranch Corporation
McNeal Solar Project

Figure 4
Wetlands and Water Resources

Cochise County, AZ



Project Features
- Project Area

Transportation
- Local Road

Wetlands and Water Resources
- NHD Waterbody
- NHD Stream/River
- NWI Wetland
- 100-year Floodplain

TETRA TECH

NOT FOR CONSTRUCTION

Reference Map

1:12,000 NAD 1983 StatePlane Arizona East FIPS 0201 Feet

0 500 1,000 2,000 Feet

Source: ESRI, USDA NAIP, BTS, US CENSUS, NHD, NWI, FEMA

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APPENDIX A
ARIZONA SGCN AND NPL LIST FOR COCHISE COUNTY

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	SGCN	NPL
Cochise	Amphibian	*Ambystoma mavortium stebbinsi*	Sonoran Tiger Salamander	LE	1A	
Cochise	Amphibian	*Lithobates blairi*	Plains Leopard Frog		1A	
Cochise	Amphibian	*Lithobates chiricahuensis*	Chiricahua Leopard Frog	LT	1A	
Cochise	Amphibian	*Lithobates yavapaiensis*	Lowland Leopard Frog	SC	1A	
Cochise	Bird	*Accipiter gentilis*	Northern Goshawk	SC	1B	
Cochise	Bird	*Ammodramus savannarum ammolegus*	Arizona grasshopper sparrow		1B	
Cochise	Bird	*Anthus spragueii*	Sprague's Pipit	SC	1A	
Cochise	Bird	*Antrostomus ridgwayi*	Buff-collared Nightjar		1B	
Cochise	Bird	*Aquila chrysaetos*	Golden Eagle		1B	
Cochise	Bird	*Athene cunicularia hypugaea*	Western Burrowing Owl	SC	1B	
Cochise	Bird	*Catharus ustulatus*	Swainson's Thrush		1B	
Cochise	Bird	*Charadrius nivosus nivosus*	Snowy Plover		1B	
Cochise	Bird	*Coccothraustes vespertinus*	Evening Grosbeak		1B	
Cochise	Bird	*Coccyzus americanus*	Yellow-billed Cuckoo (Western DPS)	LT	1A	
Cochise	Bird	*Cynanthus latirostris*	Broad-billed Hummingbird		1B	
Cochise	Bird	*Dumetella carolinensis*	Gray Catbird		1B	
Cochise	Bird	*Empidonax fulvifrons pygmaeus*	Northern Buff-breasted Flycatcher	SC	1B	
Cochise	Bird	*Empidonax traillii extimus*	Southwestern Willow Flycatcher	LE	1A	
Cochise	Bird	*Falco peregrinus anatum*	American Peregrine Falcon	SC	1A	
Cochise	Bird	*Haliaeetus leucocephalus (wintering pop.)*	Bald Eagle - Winter Population	SC	1A	
Cochise	Bird	*Ictinia mississippiensis*	Mississippi Kite		1B	
Cochise	Bird	*Lampornis clemenciae*	Blue-throated Mountain-gem		1B	
Cochise	Bird	*Leucolia violiceps*	Violet-crowned Hummingbird		1B	
Cochise	Bird	*Megascops trichopsis*	Whiskered Screech-owl		1B	
Cochise	Bird	*Peucaea carpalis*	Rufous-winged Sparrow		1B	
Cochise	Bird	*Polioptila nigriceps*	Black-capped Gnatcatcher		1B	
Cochise	Bird	*Rhynchopsitta pachyrhyncha*	Thick-billed Parrot		1A	
Cochise	Bird	*Sialia sialis fulva*	Azure Bluebird		1B	
Cochise	Bird	*Strix occidentalis lucida*	Mexican Spotted Owl	LT	1A	
Cochise	Bird	*Trogon elegans*	Elegant Trogon		1B	
Cochise	Bird	*Tyrannus crassirostris*	Thick-billed Kingbird		1B	
Cochise	Fish	*Agosia chrysogaster chrysogaster*	Gila Longfin Dace	SC	1B	
Cochise	Fish	*Agosia chrysogaster ssp. 1*	Yaqui Longfin Dace	SC	1B	
Cochise	Fish	*Campostoma ornatum*	Mexican Stoneroller	SC	1A	
Cochise	Fish	*Catostomus clarkii*	Desert Sucker	SC	1B	
Cochise	Fish	*Catostomus insignis*	Sonora Sucker	SC	1B	
Cochise	Fish	*Cyprinella formosa*	Beautiful Shiner	LT	1A	
Cochise	Fish	*Cyprinodon macularius*	Desert Pupfish	LE	1A	
Cochise	Fish	*Gila intermedia*	Gila Chub	LE	1A	
Cochise	Fish	*Gila purpurea*	Yaqui Chub	LE	1A	
Cochise	Fish	*Ictalurus pricei*	Yaqui Catfish	LT	1A	
Cochise	Fish	*Meda fulgida*	Spikedace	LE	1A	
Cochise	Fish	*Poeciliopsis occidentalis occidentalis*	Gila Topminnow	LE	1A	
Cochise	Fish	*Poeciliopsis occidentalis sonoriensis*	Yaqui Topminnow	LE	1A	
Cochise	Fish	*Rhinichthys osculus*	Speckled Dace	SC	1B	
Cochise	Fish	*Tiaroga cobitis*	Loach Minnow	LE	1A	
Cochise	Invertebrate	*Pyrgulopsis bernardina*	San Bernardino Springsnail	LT	1A	
Cochise	Invertebrate	*Pyrgulopsis thompsoni*	Huachuca Springsnail	CCA	1A	
Cochise	Invertebrate	*Stygobromus arizonensis*	Arizona Cave Amphipod	SC	1B	
Cochise	Mammal	*Corynorhinus townsendii pallescens*	Pale Townsend's Big-eared Bat	SC	1B	
Cochise	Mammal	*Eumops perotis californicus*	Greater Western Bonneted Bat	SC	1B	
Cochise	Mammal	*Lasiurus blossevillii*	Western Red Bat		1B	
Cochise	Mammal	*Lasiurus xanthinus*	Western Yellow Bat		1B	
Cochise	Mammal	*Leopardus pardalis*	Ocelot	LE	1A	
Cochise	Mammal	*Leptonycteris yerbabuenae*	Lesser Long-nosed Bat	SC	1A	
Cochise	Mammal	*Myotis occultus*	Arizona Myotis	SC	1B	
Cochise	Mammal	*Myotis velifer*	Cave Myotis	SC	1B	
Cochise	Mammal	*Notiosorex cockrumi*	Cockrum's Desert Shrew		1B	

Cochise	Mammal	*Nyctinomops femorosaccus*	Pocketed Free-tailed Bat		1B	
Cochise	Mammal	*Panthera onca*	Jaguar	LE	1A	
Cochise	Mammal	*Sciurus nayaritensis chiricahuae*	Chiricahua Fox Squirrel	SC	1B	
Cochise	Mammal	*Sorex arizonae*	Arizona Shrew	SC	1B	
Cochise	Mammal	*Tadarida brasiliensis*	Brazilian Free-tailed Bat		1B	
Cochise	Plant	*Allium plummerae*	Plummer Onion			SR
Cochise	Plant	*Allium rhizomatum*	Redflower Onion			SR
Cochise	Plant	*Apacheria chiricahuensis*	Chiricahua Rock Flower			SR
Cochise	Plant	*Astragalus cobrensis var. maguirei*	Coppermine Milk-vetch	SC		SR
Cochise	Plant	*Astragalus hypoxylus*	Huachuca Milkvetch	SC		SR
Cochise	Plant	*Coryphantha robbinsorum*	Cochise Pincushion Cactus	LT		HS
Cochise	Plant	*Coryphantha scheeri var. valida*	Slender Needle Corycactus			SR
Cochise	Plant	*Dichromanthus michuacanus*	Michoacan Ladies'-tresses			SR
Cochise	Plant	*Echinocereus arizonicus ssp. nigrihorridispinus*	Black-spined Hedgehog Cactus			SR
Cochise	Plant	*Echinocereus ledingii*	Pinaleno Hedgehog Cactus			SR
Cochise	Plant	*Echinocereus pseudopectinatus*	Devil-thorn			SR
Cochise	Plant	*Echinocereus santaritensis*	Santa Rita Hedgehog Cactus			SR
Cochise	Plant	*Echinomastus erectocentrus var. erectocentrus*	Needle-spined Pineapple Cactus	SC		SR
Cochise	Plant	*Echinomastus intertextus*	White Fishhook Cactus			SR
Cochise	Plant	*Epithelantha micromeris*	Button Cactus			SR
Cochise	Plant	*Erigeron kuschei*	Chiricahua Fleabane	SC		SR
Cochise	Plant	*Erigeron lemmonii*	Lemmon Fleabane	SC		HS
Cochise	Plant	*Eriogonum capillare*	San Carlos Wild-buckwheat	SC		SR
Cochise	Plant	*Escobaria orcuttii*	Orcutt's Foxtail Cactus			SR
Cochise	Plant	*Euphorbia macropus*	Woodland Spurge	SC		SR
Cochise	Plant	*Gentianella wislizeni*	Wislizeni Gentian	SC		SR
Cochise	Plant	*Graptopetalum bartramii*	Bartram Stonecrop	PT		SR
Cochise	Plant	*Hexalectris arizonica*	Arizona Crested coral-root			SR
Cochise	Plant	*Hexalectris colemanii*	Coleman's coral-root	SC		SR
Cochise	Plant	*Hexalectris warnockii*	Texas Purple Spike	SC		HS
Cochise	Plant	*Hypoxis mexicana*	Yellow Star Grass			SR
Cochise	Plant	*Lilaeopsis schaffneriana ssp. recurva*	Huachuca Water-umbel	LE		HS
Cochise	Plant	*Lilium parryi*	Lemon Lily	SC		SR
Cochise	Plant	*Lobelia fenestralis*	Leafy Lobelia			SR
Cochise	Plant	*Lobelia laxiflora*	Mexican Lobelia			SR
Cochise	Plant	*Malaxis abieticola*	Slender-flowered Malaxis			SR
Cochise	Plant	*Malaxis corymbosa*	Madrean Adder's Mouth			SR
Cochise	Plant	*Malaxis porphyrea*	Purple Adder's Mouth			SR
Cochise	Plant	*Mammillaria heyderi var. bullingtoniana*	Cream Cactus			SR
Cochise	Plant	*Mammillaria viridiflora*	Varied Fishhook Cactus			SR
Cochise	Plant	*Mammillaria wrightii var. wilcoxii*	Wilcox Fishhook Cactus			SR
Cochise	Plant	*Opuntia martiniana*	Seashore Cactus			SR
Cochise	Plant	*Peniocereus greggii var. greggii*	Night-blooming Cereus	SC		SR
Cochise	Plant	*Penstemon discolor*	Catalina Beardtongue			HS
Cochise	Plant	*Peritoma multicaulis*	Slender Spiderflower	SC		SR
Cochise	Plant	*Perityle cochisensis*	Chiricahua Rock Daisy			SR
Cochise	Plant	*Phemeranthus humilis*	Pinos Altos Flameflower	SC		SR
Cochise	Plant	*Phemeranthus marginatus*	Tepic Flameflower	SC		SR
Cochise	Plant	*Platanthera limosa*	Thurber's Bog Orchid			SR
Cochise	Plant	*Rumex orthoneurus*	Blumer's Dock	SC		HS
Cochise	Plant	*Schiedeella arizonica*	Fallen Ladies'-tresses			SR
Cochise	Plant	*Senecio multidentatus var. huachucanus*	Huachuca Groundsel			HS
Cochise	Plant	*Spiranthes delitescens*	Canelo Hills Ladies'-tresses	LE		HS
Cochise	Plant	*Vauquelinia californica ssp. pauciflora*	Limestone Arizona Rosewood	SC		SR
Cochise	Plant	*Zigadenus virescens*	Green Death Camas			SR
Cochise	Reptile	*Aspidoscelis arizonae*	Arizona Striped Whiptail		1B	
Cochise	Reptile	*Aspidoscelis stictogramma*	Giant Spotted Whiptail	SC	1B	

Cochise	Reptile	*Crotalus lepidus klauberi*	Banded Rock Rattlesnake		1A	
Cochise	Reptile	Crotalus pricei	Twin-spotted Rattlesnake		1A	
Cochise	Reptile	Crotalus willardi obscurus	New Mexico Ridge-nosed Rattlesnake	LT	1A	
Cochise	Reptile	Crotalus willardi willardi	Arizona Ridge-nosed Rattlesnake		1A	
Cochise	Reptile	Gopherus morafkai	Sonoran Desert Tortoise	C	1A	
Cochise	Reptile	Heloderma suspectum	Gila Monster		1A	
Cochise	Reptile	Lampropeltis gentilis	Western Milksnake		1A	
Cochise	Reptile	Lampropeltis nigrita	Mexican Black Kingsnake		1B	
Cochise	Reptile	Sceloporus slevini	Slevin's Bunchgrass Lizard		1B	
Cochise	Reptile	Senticolis triaspis intermedia	Northern Green Ratsnake		1B	
Cochise	Reptile	Sistrurus tergeminus edwardsii	Desert Massasauga		1A	
Cochise	Reptile	Tantilla wilcoxi	Chihuahuan Black-headed Snake		1B	
Cochise	Reptile	Tantilla yaquia	Yaqui Black-headed Snake		1B	
Cochise	Reptile	Terrapene ornata luteola	Desert Box Turtle		1A	
Cochise	Reptile	Thamnophis eques megalops	Northern Mexican Gartersnake	LT	1A	

APPENDIX B
REPRESENTATIVE PHOTOGRAPHS

Photo 1: Possible fox (*Vulpes* spp.) burrow.

Photo 2: Hawk carcass.

Photo 3: Looking east at honey mesquite (*Prosopis glandulosa*) and Russian thistle (*Salsola tragus*).

Photo 4: Looking North-northwest at honey mesquite, Russian thistle, longleaf ephedra (*Ephedra trifurca*), and soaptree yucca (*Yucca elata*).

Photo 5: Looking along Cox Road, facing East.

Photo 6: Looking east toward residences and trees along Cox Road, just to the south of the Project Area.

Photo 7: Looking west toward soaptree yucca. Many fresh ground holes and mounds can be seen.

Photo 8: Looking west from transition from soaptree yucca to honey and velvet mesquite (*Prosopis velutina*).

Photo 9: Looking east toward semi-desert grasslands.

Photo 10: Looking east toward more grass-dominated vegetation cover.

Photo 11: Looking east toward mesquite, grasses, deer sign, and small mammal holes.

Photo 12: Looking west toward mesquite dominated vegetation.

Photo 13: Looking northwest at additional mixed grassland and shrubs.

APPENDIX C
USFWS INFORMATION FOR PLANNING AND CONSULTATION (IPAC) RESOURCES LIST

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.

Location

Cochise 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.

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. IPaC only shows species that are regulated by USFWS (see FAQ).
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:

Mammals

NAME	STATUS
Jaguar Panthera onca Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3944	Endangered

Birds

NAME	STATUS
Northern Aplomado Falcon Falco femoralis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1923	EXPN
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS

Northern Mexican Gartersnake Thamnophis eques megalops — Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

https://ecos.fws.gov/ecp/species/7655

Amphibians

NAME	STATUS
Chiricahua Leopard Frog Rana chiricahuensis	Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

https://ecos.fws.gov/ecp/species/1516

Fishes

NAME	STATUS
Yaqui Catfish Ictalurus pricei	Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

https://ecos.fws.gov/ecp/species/5432

Yaqui Chub Gila purpurea — Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

https://ecos.fws.gov/ecp/species/3414

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Wright's Marsh Thistle Cirsium wrightii There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8963	Proposed Threatened

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.

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.)

Bendire's Thrasher Toxostoma bendirei — Breeds Mar 15 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9435

Chestnut-collared Longspur Calcarius ornatus — Breeds elsewhere

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

Long-eared Owl asio otus — Breeds Mar 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

Virginia's Warbler Vermivora virginiae — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9441

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.

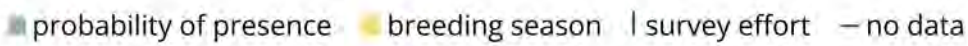
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

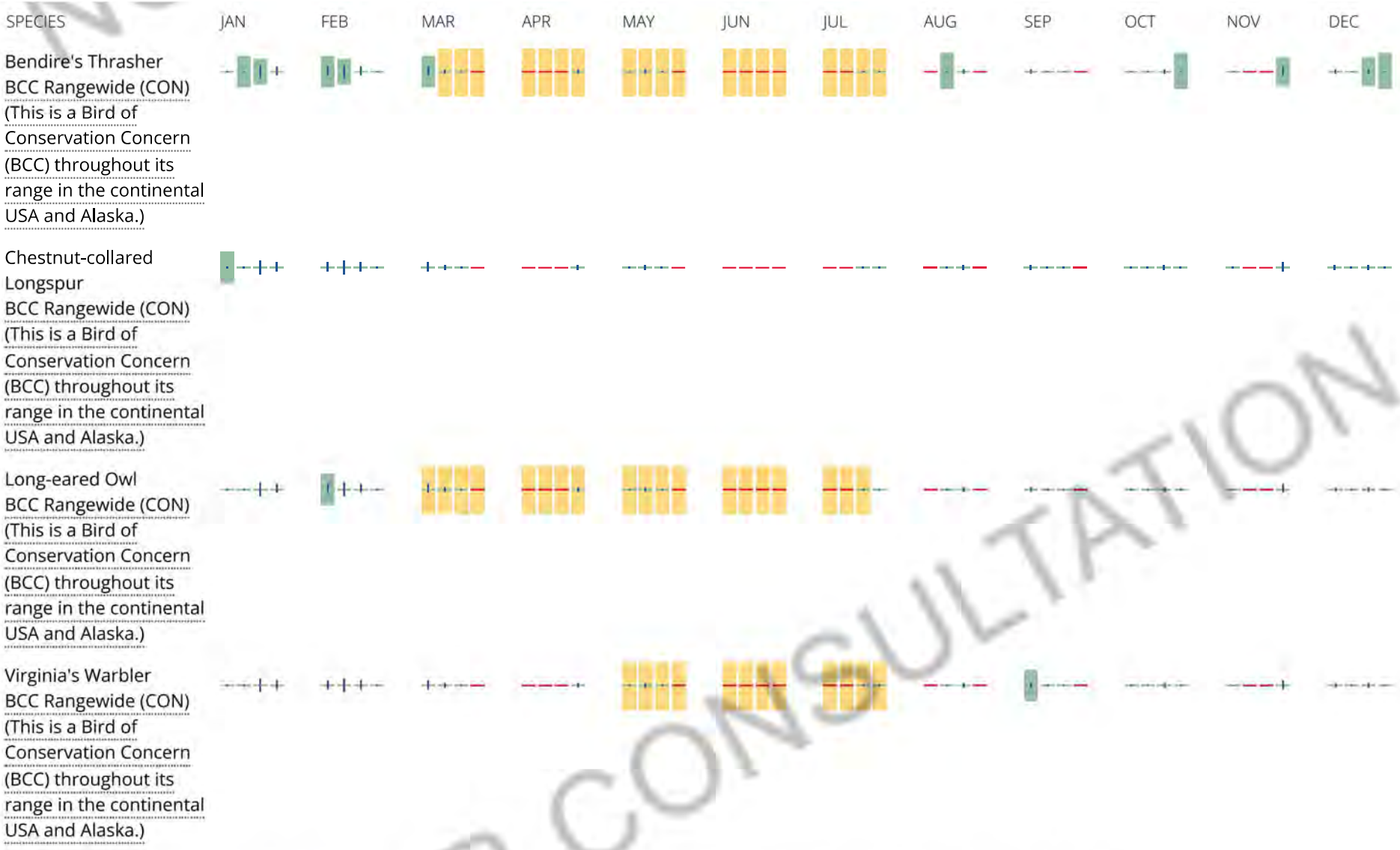
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.





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 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.

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.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

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.

APPENDIX D
ARIZONA GAME AND FISH DEPARTMENT ONLINE ENVIRONMENTAL REVIEW TOOL

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:
McNeal Site

Project Description:
Solar energy facility

Project Type:
Energy Storage/Production/Transfer, Energy Production (generation), photovoltaic solar facility (new)

Contact Person:
Megan Davis

Organization:
Tetra Tech, Inc.

On Behalf Of:
OTHER

Project ID:
HGIS-15464

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.

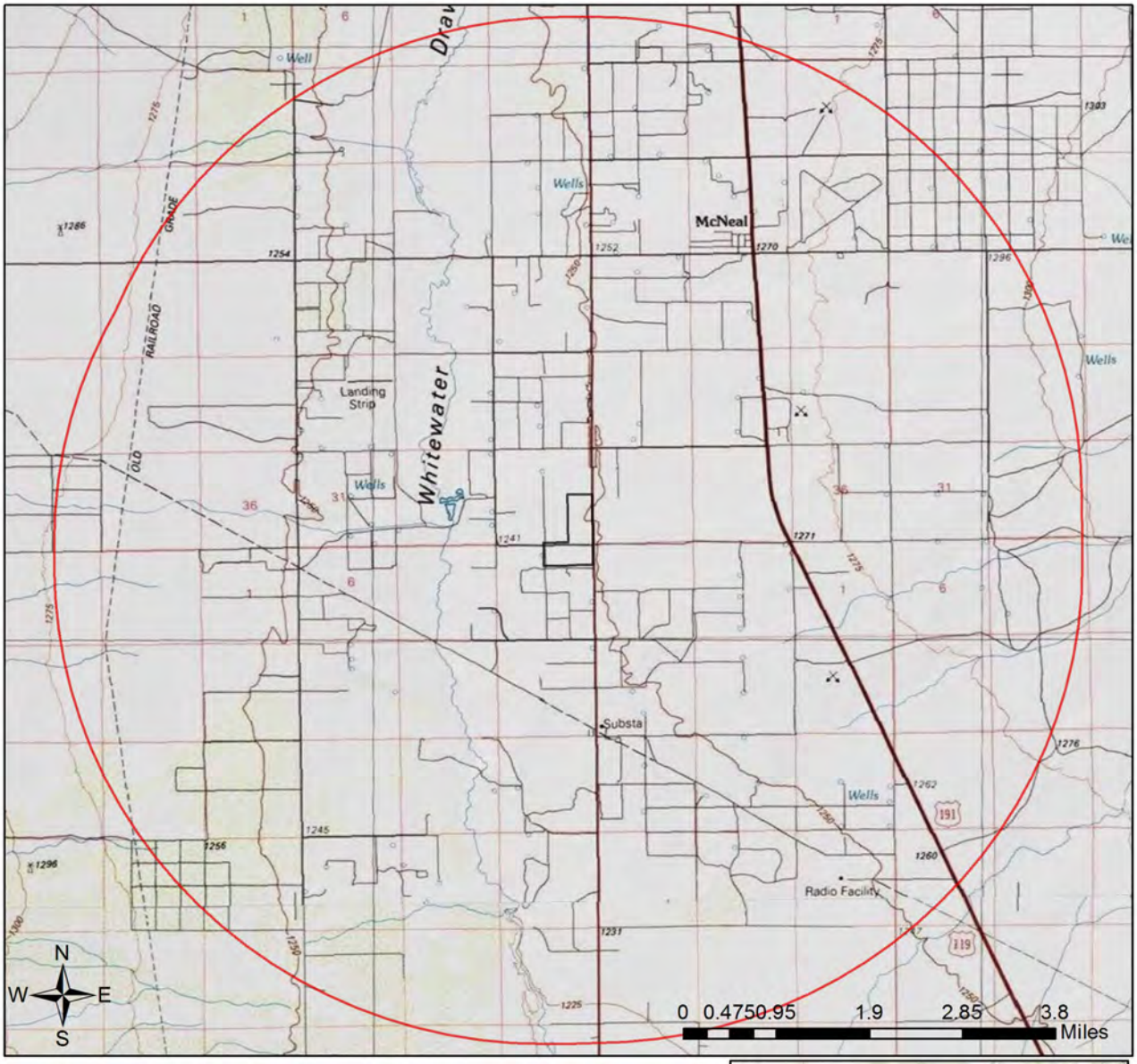
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

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

McNeal Site

USA Topo Basemap With Locator Map



Project Boundary

Buffered Project Boundary

Project Size (acres): 158.70

Lat/Long (DD): 31.5556 / -109.7012

County(s): Cochise

AGFD Region(s): Tucson

Township/Range(s): T21S, R26E; T22S, R26E

USGS Quad(s): MCNEAL

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

McNeal Site

Web Map As Submitted By User

Project Boundary

Buffered Project Boundary

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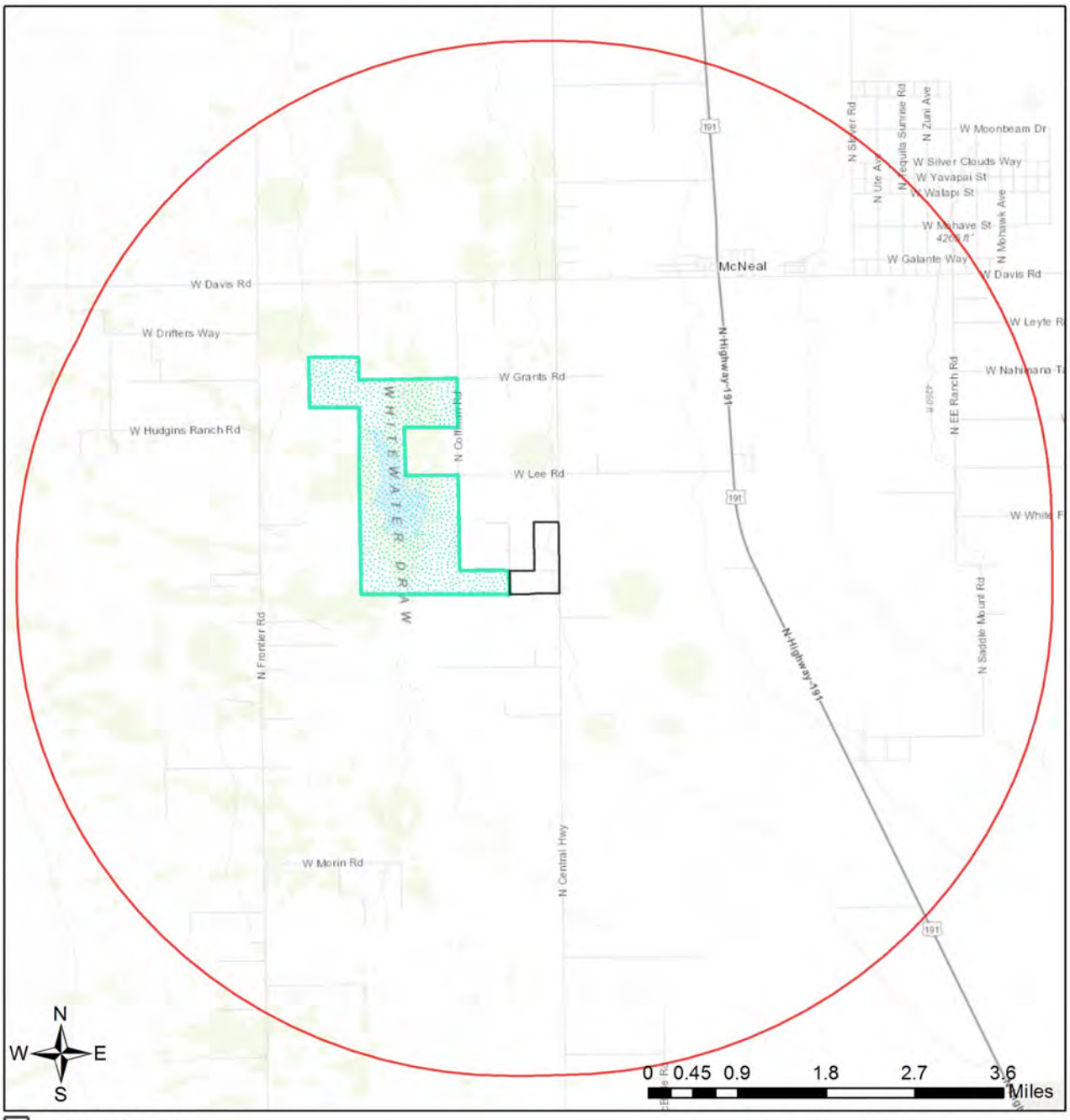
McNeal Site

Important Areas



- Project Boundary
- Buffered Project Boundary
- Wildlife Connectivity
- Important Connectivity Zones
- Pinal County Riparian
- Critical Habitat
- Important Bird Areas

Project Size (acres): 158.70

Lat/Long (DD): 31.5556 / -109.7012

County(s): Cochise

AGFD Region(s): Tucson

Township/Range(s): T21S, R26E; T22S, R26E

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McNeal Site

Township/Ranges and Land Ownership

- Project Boundary
- Buffered Project Boundary
- Township/Ranges

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): 158.70

Lat/Long (DD): 31.5556 / -109.7012

County(s): Cochise

AGFD Region(s): Tucson

Township/Range(s): T21S, R26E; T22S, R26E

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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 Documented within 5 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Choeronycteris mexicana	Mexican Long-tongued Bat	SC	S	S		1C
Danaus plexippus	Monarch	C		S		
Haliaeetus leucocephalus (wintering pop.)	Bald Eagle - Winter Population	SC, BGA	S	S		1A
Hypsiglena sp. nov.	Hooded Nightsnake					1B
Leptonycteris yerbabuenae	Lesser Long-nosed Bat	SC				1A
Lithobates blairi	Plains Leopard Frog			S		1A
Phrynosoma cornutum	Texas Horned Lizard	SC				
Sistrurus tergeminus edwardsii	Desert Massasauga			S		1A
Terrapene ornata luteola	Desert Box Turtle			S		1A

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

Special Areas Documented that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Whitewater Draw State Wildlife Area	Important Bird Area IBA					

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

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Ammodramus savannarum ammolegus	Arizona grasshopper sparrow		S	S		1B
Ammodramus savannarum perpallidus	Western Grasshopper Sparrow					1B
Ammospermophilus harrisii	Harris' Antelope Squirrel					1B
Anthus spragueii	Sprague's Pipit	SC				1A
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Buteo regalis	Ferruginous Hawk	SC		S		1B
Buteo swainsoni	Swainson's Hawk					1C
Callipepla squamata	Scaled Quail					1C
Calypte costae	Costa's Hummingbird					1C
Charadrius montanus	Mountain Plover	SC				1B
Cistothorus palustris	Marsh Wren					1C
Coluber bilineatus	Sonoran Whipsnake					1B
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1B
Cynanthus latirostris	Broad-billed Hummingbird		S			1B
Cynomys ludovicianus	Black-tailed Prairie Dog	CCA		S		1A

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Dipodomys spectabilis	Banner-tailed Kangaroo Rat			S		1B
Empidonax wrightii	Gray Flycatcher					1C
Euderma maculatum	Spotted Bat	SC	S	S		1B
Eumops perotis californicus	Greater Western Bonneted Bat	SC		S		1B
Haliaeetus leucocephalus	Bald Eagle	SC, BGA	S	S		1A
Heloderma suspectum	Gila Monster					1A
Hypsiglena sp. nov.	Hooded Nightsnake					1B
Incilius alvarius	Sonoran Desert Toad					1B
Lasiurus blossevillii	Western Red Bat		S			1B
Lasiurus xanthinus	Western Yellow Bat		S			1B
Leopardus pardalis	Ocelot	LE				1A
Leptonycteris yerbabuenae	Lesser Long-nosed Bat	SC				1A
Lepus alleni	Antelope Jackrabbit					1B
Lithobates blairi	Plains Leopard Frog			S		1A
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
Notiosorex cockrumi	Cockrum's Desert Shrew					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
Peromyscus nasutus	Northern Rock Deermouse					1B
Peucaea botterii arizonae	Arizona Botteri's Sparrow			S		1B
Phrynosoma solare	Regal Horned Lizard					1B
Setophaga petechia	Yellow Warbler					1B
Spizella breweri	Brewer's Sparrow					1C
Sturnella magna	Eastern Meadowlark					1C
Tadarida brasiliensis	Brazilian Free-tailed Bat					1B
Terrapene ornata	Ornate Box Turtle					1A
Vireo bellii arizonae	Arizona Bell's Vireo					1B

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Vulpes macrotis	Kit Fox	No Status				1B

Species of Economic and Recreation Importance Predicted that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla gambelii	Gambel's Quail					
Callipepla squamata	Scaled Quail					1C
Odocoileus hemionus	Mule Deer					
Patagioenas fasciata	Band-tailed Pigeon					1C
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					
Zenaida macroura	Mourning Dove					

Project Type: Energy Storage/Production/Transfer, Energy Production (generation), photovoltaic solar facility (new)

Project Type Recommendations:
During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife. Guidelines for many of these can be found 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 the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects and pathogens. Precautions should be taken to wash and/or decontaminate all equipment utilized in the project activities before entering and leaving the site. See the Arizona Department of Agriculture website for a list of prohibited and restricted noxious weeds at https://www.invasivespeciesinfo.gov/unitedstates/az.shtml and the Arizona Native Plant Society https://aznps.com/invas for recommendations on how to control. To view a list of documented invasive species or to report invasive species in or near your project area visit iMapInvasives - a national cloud-based application for tracking and managing invasive species at https://imap.natureserve.org/imap/services/page/map.html.

- To build a list: zoom to your area of interest, use the identify/measure tool to draw a polygon around your area of interest, and select “See What’s Here” for a list of reported species. To export the list, you must have an account and be logged in. You can then use the export tool to draw a boundary and export the records in a csv file.

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (include spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

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).

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

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.

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly at PEP@azgfd.gov.

Project Location and/or Species Recommendations:
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.

HDMS records indicate that **Lesser Long-nosed Bats** have been documented within the vicinity of your project area. Please review the Lesser Long-nosed Bat Management Guidelines at: https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/FINALlecuyeHabitatGdln.pdf

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

APPENDIX E: Arizona Game and Fish Department Consultation Letter

April 20, 2022

Adrian Markocic
Silicon Ranch Corporation, Inc.
222 Second Ave. S, Suite 1900
Nashville, Tennessee 37201

Electronically submitted to: adrian.markocic@siliconranch.com and colin.agner@tetratech.com

RE: Silicon Ranch Corporation McNeal Solar Power Project

Dear Adrian Markocic:

The Arizona Game and Fish Department (Department) appreciates the opportunity to review the Project Evaluation Request for the Silicon Ranch Corporation McNeal Solar Power Project. This project is a 20-megawatt photovoltaic (PV) solar power generation facility with associated ancillary facilities. The Project would be located along N Central Highway, between W Lee and W Cox Roads, near McNeal, Arizona. The Project would be located on approximately 159 acres of land owned by the Sulphur Springs Valley Electric Cooperative, Inc., and is situated immediately east of the Department's Whitewater Draw Wildlife Area. The project area is undeveloped, and current land cover includes Chihuahuan desert scrub and semidesert grassland as the dominant plant communities. In addition to the PV solar panels, the project will include construction of a substation, operations and maintenance facility, unpaved access roadways, and installation of a collection system to route power from the solar power generation facility to the existing power grid via a 69kV power line that runs along the western side of N Central Hwy (the eastern border of the project). Due to the close proximity to the existing power grid, no overhead lines will be required to tie into the existing 69kV line as the tie-in will be underground within the parcel boundary.

Under Title 17 of the Arizona Revised Statutes, the Department, by and through the Arizona Game and Fish Commission (Commission), has jurisdictional authority and public trust responsibilities to protect and conserve the state fish and wildlife resources. In addition, the Department manages threatened and endangered species through authorities of Section 6 of the Endangered Species Act and the Department's 10(a)1(A) permit. It is the mission of the Department to conserve and protect Arizona's diverse fish and wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations. For your consideration, the Department provides the following comments based on the agency's statutory authorities, public trust responsibilities, and special expertise related to wildlife resources and recreation.

The proposed project is situated immediately adjacent to the Whitewater Draw Wildlife Area. The Whitewater Draw Wildlife Area is of state and regional significance as the primary wintering area for typically over 20,000 Sandhill Cranes (*Antigone [=Grus] canadensis*) in Arizona, includes both the Lesser (most numerous) and Greater subspecies, and has been designated by Audubon Society as an Important Bird Area[1]. In addition to sandhill cranes, Whitewater Draw's diverse habitats attract many kinds of ducks, geese, herons, egrets, shorebirds, gulls and terns, as well as prairie and peregrine falcons, wintering hawks, and many other raptors. The Department has concerns regarding the potential for bird fatalities or injuries (i.e. bird strikes) to occur if avian species mistake the solar panels for open water. Water-dependent species (loons, grebes, rails, coots, shorebirds, waterbirds, and waterfowl) have been postulated to be vulnerable to fatality at some solar facilities due to the potential for them to confuse arrays for bodies of water, i.e. the "lake effect" (Smith and Dwyer 2016[2]).

The Department understands that the axes of the PV panels will be situated in a north-south direction, allowing the panels to rotate 180 degrees, facing east in the morning, and turning west to follow the sun as the day progresses. At the end of each day, the panels re-orient to face east, in preparation for the next morning's sunrise. The Department also understands that the panels will have a non-reflective coating in order to retain maximum solar energy. Both the non-reflective coating, and the somewhat vertical (eastern) orientation of the panels at night, should serve to help limit the appearance of the panels as a body of water, but some daytime reflectivity can still occur despite the non-reflective panel surface (FAA 2018[3]).

Due to the sensitivity of the adjacent wetland habitats and number of birds migrating through the area annually, the Department requests the following design features, as well as monitoring and reporting of bird injuries and fatalities during operation of the facility.

- Recommendations for monitoring design and frequency can be found in the U.S. Geological Survey's 2016 Mortality Monitoring Design for Utility-Scale Solar Power Facilities[4]. Any avian injuries or fatalities should be reported using the U.S. Fish and Wildlife Service's Injury and Mortality Reporting[5] website and the Department. The Department looks forward to working with Silicon Ranch Corporation, Inc. and the Sulphur Springs Valley Electric Cooperative to further refine the monitoring and reporting recommendations in order to develop feasible and repeatable protocols to be implemented during operations.
- To the extent possible, the Department recommends leaving the vegetation and soil underneath the panels intact, instead of grading the entire site. In many portions of the site, the topography is flat and would require minimal trimming of shrubs and existing vegetation to install the panels. Keeping the existing soil and root structures intact would serve to minimize erosional run-off and maintain biotic diversity within the site.

[1] https://www.audubon.org/important-bird-areas/whitewater-draw-state-wildlife-area
[2] https://www.energy.gov/sites/prod/files/2019/03/f61/Smith%20and%20Dwyer%202016.pdf
[3] https://www.faa.gov/airports/environmental/policy_guidance/media/FAA-Airport-Solar-Guide-2018.pdf
[4] https://pubs.usgs.gov/of/2016/1087/ofr20161087.pdf
[5] https://ecos.fws.gov/imr/welcome

Based on the information provided in your Project Evaluation Request dated March 31, 2022, and a subsequent telephone conversation on April 15, 2022, the Department has the following additional recommendations to minimize impacts to wildlife and habitat:

- To the extent possible, the Department encourages pre-construction surveys and monitoring to determine species presence as referenced in our *Guidelines for Solar Development in Arizona*[6]. The Department is available to review survey designs, provide input on developing best-management practices, and are available to provide technical assistance in minimizing any potential impacts to wildlife during construction and operation of the facility.
- The Department recommends that a qualified biologist conduct a survey for nesting birds within the project area prior to removal or trimming of trees/vegetation, if the removal or trimming occurs during the breeding season. The trees and/or vegetation within the project area may provide nesting opportunities for avian species that are regulated under the Migratory Bird Treaty Act (MBTA) and protected under state law. Breeding season for birds is generally February through late August, depending on the species and habitat, and for raptors it is generally January through late June. If it is anticipated the project will not be in compliance with MBTA, the Department also recommends that you contact the U.S. Fish and Wildlife Service[7] (USFWS) for their Technical Assistance. The USFWS will provide options to comply with the MBTA.
- The Department understands that the property boundary will be fenced with chain-link fencing that will be at least six feet tall. The Department recommends leaving a 6-8-inch gap between the ground surface and bottom of the fence to allow for smaller wildlife species to move freely through the area and make use of any habitat within the project boundaries.
- Please minimize the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects and pathogens. Precautions should be taken to wash and/or decontaminate all equipment utilized in construction activities before entering and leaving the site. Please review the Arizona Department of Agriculture's website for a list of prohibited and restricted noxious weeds[8] and the Arizona Native Plant Society[9] for recommendations on control methods. To view a list of documented invasive species or to report invasive species in or near your project area visit iMapInvasives[10] - a national cloud-based application for tracking and managing invasive species.
    - To build a list: zoom to your area of interest, use the identify/measure tool to draw a polygon around your area of interest, and select "See What's Here" for a list of reported species. To export the list, you must have an account and be logged in. You can then use the export tool to draw a boundary and export the records in a csv file.
- For any areas to be revegetated, the Department recommends landscaping with drought-tolerant species that are native to Arizona. Landscaping with native plants can help support wildlife and pollinator species that inhabit rural and urbanized areas. A plant palette containing grassland species (forbs, low-growing shrubs, and bunch grasses) that are native

[6] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/FinalSolarGuidelines03122010.pdf
[7] https://www.fws.gov/office/arizona-ecological-services/contact-us
[8] https://agriculture.az.gov/pestspest-control/agriculture-pests/noxious-weeds
[9] https://aznps.com/invas
[10] https://imap.natureserve.org/imap/services/page/map.html

to the area could be planted in areas where grading occurs, to the extent feasible, along the edges of the property, as well as underneath the panels, to allow portions of the site to serve as habitat for wildlife species in the area that typically inhabit the area. The Southwest Monarch Study website has a list of native plant nurseries in the vicinity that may have plant material suitable for the project area.

- The Department would like to make you aware about the possible effects of facility lighting on nocturnal wildlife. Artificial night lighting, which may be intensified by the collection mirrors, may attract insects and the species that prey on them (e.g. bats). Artificial lighting could also impair the ability of nocturnal animals to navigate (e.g., owls, migratory birds, bats, and other nocturnal mammals), and may affect wildlife behavior and populations (Davies et. al. 2013[11]). Consider using only the minimum amount of light needed for safety, especially in areas immediately adjacent to open space or undeveloped lands. Motion sensing and narrow spectrum lighting are recommended and the Department encourages their use as often as possible to lower the range of species affected by lighting. Also, please consider shielding, canting, or cutting all lighting, where possible, to ensure that light reaches only areas needing illumination. This will minimize impacts to nocturnal wildlife.
- Although the project area is outside of the range for Sonoran desert tortoise, a number of other reptile species have potential to occur in the project vicinity, including the desert massasauga (*Sistrurus tergeminus edwardsii*) and desert box turtle (*Terrapene ornata luteola*), which are Arizona Species of Greatest Conservation Need (SGCN). During construction and operation of the solar project, personnel should refer to the *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects*[12] should a reptile be encountered. Additionally, the Department recommends personnel (both construction and operation) take rattlesnake safety training from a reputable source so any snakes that may enter the site can be safely relocated out of harm's way without injury or mortality to the animal.

Thank you for the opportunity to review preliminary information on the Silicon Ranch Corporation McNeal Solar Power Project. At this time, the Department requests continued coordination as project design elements and bird strike monitoring protocols are developed. Please contact Cheri Bouchér at cboucher@azgfd.gov or 623-236-7615.

Sincerely,

Luke Thompson
Branch Chief, Habitat, Evaluation, and Lands Branch

AZGFD # M22-03312154

[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3657119/
[12] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2014%20Tortoise%20handling%20guidelines.pdf

Cochise County Development Services, Planning Division
1415 Melody Lane, Bldg. F
Bisbee, AZ 85603

McNeal Solar, LLC ("McNeal Solar"), a wholly owned subsidiary of Silicon Ranch Corporation ("SRC") and is proposing the development of a 20 MWac solar generation facility located on roughly 159 acres of private land approximately 3 miles southwest of the town of McNeal in Cochise County, Arizona ("Project").

On March 31, 2022 Tetra Tech, on behalf of McNeal Solar and SRC, submitted a Project Evaluation Request to the Arizona Department of Game and Fish ("Department") requesting that the Department review the Project and provide its comments and recommendations.

The Department provided a response on April 20, 2022 and having had an opportunity to review the Department's comments and recommendations, McNeal Solar is providing the following responses.

1. "Recommendations for monitoring design and frequency can be found in the U.S. Geological Survey's 2016 Mortality Monitoring Design for Utility-Scale Solar Power Facilities4. Any avian injuries or fatalities should be reported using the U.S. Fish and Wildlife Service's Injury and Mortality Reporting5 website and the Department. The Department looks forward to working with Silicon Ranch Corporation, Inc. and the Sulphur Springs Valley Electric Cooperative to further refine the monitoring and reporting recommendations in order to develop feasible and repeatable protocols to be implemented during operations."

- McNeal Solar agrees to report any avian injuries or fatalities using the Department's designated portals.

2. "To the extent possible, the Department recommends leaving the vegetation and soil underneath the panels intact, instead of grading the entire site. In many portions of the site, the topography is flat and would require minimal trimming of shrubs and existing vegetation to install the panels. Keeping the existing soil and root structures intact would serve to minimize erosional run-off and maintain biotic diversity within the site."

- McNeal Solar does not anticipate the need to perform any mass grading of the project area. Vegetation inside the road and array network will need to be removed though to construct a sound solar facility; leaving roots and low vegetation is a safety concern. The use of machinery and worker foot traffic will have unavoidable impacts on undisturbed vegetation but any vegetation that can be preserved will be preserved to the greatest

extent possible. McNeal Solar will develop a full SWPPP plan to combat any potential erosion and will work in concert with Cochise County and other affected agencies to ensure compliance with all applicable rules and regulations. Prior to completion of the project McNeal Solar will reseed the Project Area following the guidance provided by both Cochise County ("County") and Department to minimize and prevent any post construction erosion.

3. "To the extent possible, the Department encourages pre-construction surveys and monitoring to determine species presence as referenced in our *Guidelines for Solar Development in Arizona*6. The Department is available to review survey designs, provide input on developing best-management practices, and are available to provide technical assistance in minimizing any potential impacts to wildlife during construction and operation of the facility."

- McNeal Solar engaged Tetra Tech to conduct a preliminary site screening using the Arizona Game and Fish Department Online Environmental Review Tool and HabiMap in February 2022. McNeal Solar subsequently engaged Tetra Tech to conduct a Biological Resources Assessment. A field survey was conducted on March 29, 2022 and final report completed in April 2022.

4. "The Department recommends that a qualified biologist conduct a survey for nesting birds within the project area prior to removal or trimming of trees/vegetation, if the removal or trimming occurs during the breeding season. The trees and/or vegetation within the project area may provide nesting opportunities for avian species that are regulated under the Migratory Bird Treaty Act (MBTA) and protected under state law. Breeding season for birds is generally February through late August, depending on the species and habitat, and for raptors it is generally January through late June. If it is anticipated the project will not be in compliance with MBTA, the Department also recommends that you contact the U.S. Fish and Wildlife Service7 (USFWS) for their Technical Assistance. The USFWS will provide options to comply with the MBTA."

- McNeal Solar retained Tetra Tech to perform a habitat assessment of the Project Area. The habitat assessment was conducted by a Tetra Tech biologist on March 29, 2022. The purpose of the survey was to verify the desktop assessment results, assess and record habitat for special-status species, and record important habitat features such as nests. The biologist also recorded wildlife and plant and observations and took representative photographs.

5. "The Department understands that the property boundary will be fenced with chain-link fencing that will be at least six feet tall. The Department recommends leaving a 6-8-inch gap between the ground surface and bottom of the fence to allow for smaller wildlife species to move freely through the area and make use of any habitat within the project boundaries."

- McNeal Solar will utilize wildlife friendly fencing, which will incorporate a 6-8 inch gap between the ground surface and the bottom of the fence, to secure the project area.

6. "Please minimize the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects and pathogens. Precautions should be taken to wash and/or decontaminate all equipment utilized in construction activities before entering and leaving the site. Please review the Arizona Department of Agriculture's website for a list of prohibited and restricted noxious weeds8 and the Arizona Native Plant Society9 for recommendations on control methods. To view a list of documented invasive species or to report invasive species in or near your project area visit iMapInvasives10 - a national cloud-based application for tracking and managing invasive species."

- Vehicle tracking pads will be installed at Project entrances and visual inspections will be conducted regular intervals. Native soil will be used for backfill and McNeal Solar will utilize a seed mixture recommended by the Department and/or County. A revegetation plan will include notes and details on combatting invasive species. We believe that this combination of best practices will minimize the potential introduction of any invasive species.

7. "For any areas to be revegetated, the Department recommends landscaping with drought-tolerant species that are native to Arizona. Landscaping with native plants can help support wildlife and pollinator species that inhabit rural and urbanized areas. A plant palette containing grassland species (forbs, low-growing shrubs, and bunch grasses) that are native to the area could be planted in areas where grading occurs, to the extent feasible, along the edges of the property, as well as underneath the panels, to allow portions of the site to serve as habitat for wildlife species in the area that typically inhabit the area. The Southwest Monarch Study website has a list of native plant nurseries in the vicinity that may have plant material suitable for the project area."

- McNeal Solar agrees to revegetate the Project area with native plants as recommended by the Department and County.

8. “The Department would like to make you aware about the possible effects of facility lighting on nocturnal wildlife. Artificial night lighting, which may be intensified by the collection mirrors, may attract insects and the species that prey on them (e.g. bats). Artificial lighting could also impair the ability of nocturnal animals to navigate (e.g., owls, migratory birds, bats, and other nocturnal mammals), and may affect wildlife behavior and populations (Davies et. al. 201311). Consider using only the minimum amount of light needed for safety, especially in areas immediately adjacent to open space or undeveloped lands. Motion sensing and narrow spectrum lighting are recommended and the Department encourages their use as often as possible to lower the range of species affected by lighting. Also, please consider shielding, canting, or cutting all lighting, where possible, to ensure that light reaches only areas needing illumination. This will minimize impacts to nocturnal wildlife.”

- The Project will not require, nor utilize any artificial night lighting.

9. “Although the project area is outside of the range for Sonoran desert tortoise, a number of other reptile species have potential to occur in the project vicinity, including the desert massasauga (*Sistrurus tergeminus edwardsii*) and desert box turtle (*Terrapene ornate luteola*), which are Arizona Species of Greatest Conservation Need (SGCN). During construction and operation of the solar project, personnel should refer to the *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects*12 should a reptile be encountered. Additionally, the Department recommends personnel (both construction and operation) take rattlesnake safety training from a reputable source so any snakes that may enter the site can be safely relocated out of harm’s way without injury or mortality to the animal.”

- McNeal Solar agrees to instruct its contractors on the proper protocols should any reptiles be encountered. Safety training will be provided to all employees to include rattlesnake safety training.

We appreciate the opportunity to work with the Department and County and would be happy to answer any additional questions as they may arise.

Adrian Markocic

Adrian Markocic
Senior Manager, Project Development
Silicon Ranch Corporation

APPENDIX F: Native Plant Survey Technical Memorandum

TETRA TECH

350 Indiana Street, Suite 500
Golden, CO 80401
Tel 303.217.5700 www.tetratech.com

Technical Memorandum

McNeal Solar Facility Native Plant Survey

To:	Bill Zahniser, Krista Dearing, Miles Hearn	**From:**	Keith Pohs
Project:	McNeal Solar Facility	**Date:**	April 25, 2022

This Technical Memorandum presents results of a survey of native plants listed under the Arizona Department of Agriculture's Native Plant Law at the proposed McNeal Solar Facility in Cochise County, Arizona, conducted on April 11, 2022. The rules of the Native Plant Law can be found in the Arizona Administrative Code, Department of Agriculture, Environmental Services Division, Title 3, Chapter 3, Article 11: Arizona Native Plants. Appendix A of the rules, Protected Native Plants by Category, lists the protected native plants by species. The site comprises 180 acres of private land approximately 6 miles southwest of McNeal, Arizona. The biotic community at the site is Chihuahuan Desertscrub as defined in Brown, D.E. and C.H. Lowe, 1994, *Biotic Communities of the Southwest*, University of Utah Press, Salt Lake City.

Two species at the site are considered salvage restricted native plants as prescribed in A.R.S. § 3-903(B)(2) and require a permit for removal:

- Soaptree yucca (*Yucca elata*), 886 individuals
- Cane cholla (*Cylindropuntia imbricata*), 3 individuals

One species at the site is considered 1) a salvage assessed native plant as prescribed in A.R.S. § 3-903(B)(3) and requires a permit for removal and 2) a harvest restricted native plant as prescribed at A.R.S. § 3- 903(B)(4) and requires a permit to cut or remove the plant for its by-products, fibers, or wood.

- Western honey mesquite (*Prosposis glandulosa*), 1,281 individuals

Figures 1-4 show representative photographs of the site including the three aforementioned species listed under the Arizona Native Plant Law.

Per the Arizona Department of Agriculture, private landowners have the right to destroy or remove plants growing on their land, but written notice 60 days prior to the destruction of any protected native plants (for sites greater than 40 acres) is required by the Department. The landowner also has the right to sell or give away any plant growing on the land. However, protected native plants may not be legally possessed, taken or transported from the growing site without a permit from the Arizona Department of Agriculture. Attachment A includes applicable forms for notification to the Arizona Department of Agriculture.

Figure 1. Western honey mesquite

Figure 2. Mixed soaptree yucca and western honey mesquite

Figure 3. Soaptree yucca

Figure 4. Cane cholla and soaptree yucca

Attachment A: Arizona Department of Agriculture Forms

Arizona Department of Agriculture (ADA)
Licensing and Registration Section
1688 West Adams, Phoenix, Arizona 85007
Phone: (602) 542-3578
Fax: (602) 542-0466

Application for Arizona Protected Native Plants and Wood Removal

Read all pages carefully before completing application. Never sign a blank application. Fields marked with an * are required.

Information requested must be completely filled out and is subject to verification. All entries must be in ink or typed. It is unlawful to falsify any application which gives any person permission to obtain a permit to take protected native plants. **Permits will expire 30 days from the date of issue, unless specified by owner. Parcel information can be found on your property's deed or tax records.

Originating Property Information:

Tax Parcel Identification*:_____-_____-_____ County*: _____ Total Acres*: _____

Section*: _____ Township*: _____ Range*: _____

Location in Section*: _____ (Lot, MCR or Legal Description)

Physical Location*: _____ (Address of Property, City, Zip Code)

Note: If property has been purchased within the last 18 months, copies of tax assessment or deed records must be presented with this application.

Mover Information:

Cactus Mover/Company Name*: _____ Mover's Phone #*: _____-_____-_____

Mover's Address*: _____ (Address, City, St, Zip Code)

Destination Information:

Address*: _____ (Address, City, St, Zip Code)

Is this the FINAL destination of the plant(s)*: ☐ Yes ☐ No

Purpose of plant movement*: ☐ Commercial ☐ Personal Use ☐ Municipality ☐ Donation

Plant Information:

Type of Plant(s)*	Number of Plants*	Type of Plants(s)*	Number of Plants*

This application was completed by the*: ☐ Land Owner ☐ Owner's Agent ☐ Mover

- Declaration by all undersigned parties: We hereby certify and declare that we have read and understand the instructions. We further certify to the accuracy of the statements appearing on this application under penalty of perjury.
- Declaration by Property Owner: I (we) hereby certify I (we) are the legal owner(s) of the above property and do grant permission to the above named mover to remove the above listed plant(s) protected under A.R.S. Title 3.
- If property is jointly owned, both signatures required.

Signature of Property Owner*:_____ Date*: _____

Signature of Property Co-Owner*:_____ Date*: _____

Print Name(s)*:_____

Address*: _____ Telephone Number*:_____-_____-_____

****Mover is authorized access to property until _____. *(Defaults to 30-days from issue if left blank.)***

Signature of Applicant (person completing this form)*: _____

Agents Title or Position: _____
An agent must submit documentation of authority to act on behalf of the landowner.

As a landowner, you have the right to destroy or remove any plant growing from your land, but if you are going to destroy these plants, you must notify the Arizona Department of Agriculture before you plan to initiate this action. You also have the right to sell or give away any plant growing on your land. However, no person may legally transport protected native plants from any land without first obtaining a permit from the Arizona Department of Agriculture.

State and Federal land leased to you does not give you the authority to remove and transport protected plants unless written permission is given by the land management agency.

Native plant permits are priced at $7.00 PLUS the cost of tags. Tags are priced as follows:

Saguaro	$8.00
Other protected native plants and trees	$6.00
Wood, per cord	$6.00
Pincushion, Coryphantha and Mammillaria (Under 8 inches)	$ .50

Seals are 15¢ each.

The following is a partial list of some of the generally accepted common names of Arizona protected native plants. Please list the plants as accurately as possible. Be sure that the protected native plants that you plan to remove are actually on the land described on this application.

CACTUS	Barrel	Night-Blooming Cereus	Cholla	
	Hedgehog	Prickly Pear	Mammillaria	Saguaro
OTHER PLANTS	Agave (Century Plant)	Palo Verde	Ironwood Tree	
	Joshua Tree	Mesquite	Ocotillo	Yucca

Permits Can Be Obtained From The Following Offices:

Phoenix Office
1688 W. Adams
Phoenix, AZ 8507
(602) 542-3578

Tucson Office
400 W. Congress, Ste. 124
Tucson, AZ 85701
(520) 628-6317
Hours M&F ONLY
8:00 a.m. - 11:30 a.m.

Print Form

Arizona Department of Agriculture (ADA)
Licensing and Registration Section
1688 West Adams, Phoenix, Arizona 85007
Phone: (602) 542-6408
Fax: (602) 542-0466

Application for Blue Seal Permit

Read both sides before completing this application. In order for a permit to be issued, all information requested must be completely filled out and is subject to verification. All entries must be in ink or typed. It is unlawful to falsify any application, which grants permission to obtain a permit to remove native plants. **Never sign a blank application.**

NOTE: **If property has been purchased within the last 18 months, a copy of the tax assessment or deed records must be presented with this application.**

☐ I hereby certify that the plants listed on this application are in my cultivated or landscaped yard and are not from their original or natural growing site.

Tax Parcel Identification Number _____

Owner's Name _____

Address (Plant's Location) _____

County _____ Telephone _____

Receiver's Name _____

Address _____

Telephone _____

Carrier's Name _____

Address _____

Telephone _____

Number of Plants To Be Removed—attach additional sheets if necessary.

Saguaro _____ Height _____ No.of Arms _____ | _____ Height _____ No.of Arms _____

_____ Height _____ No.of Arms _____ | _____ Height _____ No.of Arms _____

_____ Height _____ No.of Arms _____ | _____ Height _____ No.of Arms _____

_____ Height _____ No.of Arms _____ | _____ Height _____ No.of Arms _____

Organpipe _____ No. Of Branches _____ Senita _____ No. Of Branches _____

Barrel _____ Cholla _____ Hedgehog _____ Prickly Pear _____

Agave _____ Ocotillo _____ Yucca _____ Pincushion _____ Sotol _____

Other _____

Each property owner shall declare: I hereby certify and declare that I have read and understand the instructions. I further certify to the accuracy of the statements appearing on this application under penalty of perjury.

Signature of Property Owner _____ Date _____
Signature of Property Co-Owner _____ Date _____

The intended receiver must pick up the seals and string at one of the offices listed on the back of this form.

I acknowledge that I have received the following number of seals and string:

_____Seals _____String

Signature _____ Date _____

rev. 12/03

Recently the Arizona State Legislature amended Arizona State Law Chapter 7 Article 1 (3-906 B) to read as follows:

In addition to the requirements prescribed by this section, a person who moves or salvages a saguaro cactus (cereus giganterus) that is more than four feet tall, from other than its original growing location, must purchase a permit, tag and seal from the department. A person may move a saguaro cactus without obtaining a permit, tag and seal only if the person maintains documentation of a previous legal movement or if the department has record of a previous legal movement of the cactus by the person. Saguaro cacti that are propagated by humans are exempt from the requirements of this subsection.

As a home owner, you have the right to remove, sell or give way any native plant growing on your property. However, any Saguaro over four (4) feet tall must have a movement permit obtained from the Arizona Department of Agriculture.

Native plants, other than the Saguaro, that have had prior movement permits do not require a new permit. If requested the Arizona Department of Agriculture will issue a blue seal permit for native plants (except Saguaro) that have had prior movement permits. The cost would be a permit fee of $7.00 and $.15 for each seal.

The following is a partial list of some of the generally accepted common names of Arizona native plants. Please use these names as accurately as possible. Be sure that the native plants that you plan to remove are actually on the land described on this application.

Cactus

Barrel	Cholla	Hedgehog	Mammillaria	Night-blooming Cereus
Coryphantha	Prickly Pear	Saguaro		

Other Plants

Agave (Century Plant)	Desert Spoon (Sotol)	Ironwood Tree
Joshua Tree	Mesquite	Ocotillo
Palo Verde	Yucca	

Permits Can Be Obtained From The Following Offices:

Phoenix Office
1688 W. Adams
Phoenix, AZ 85007
(602) 364 – 0935
M-F 8:00 TO 4:30 p.m.

Tucson Office
400 W. Congress Ste.124
Tucson, AZ 85701
(520) 628-6317
M & F(ONLY) 8:00 TO 11:30 a.m.

Print Form

Arizona Department of Agriculture (ADA)
Licensing and Registration Section
1688 West Adams, Phoenix, Arizona 85007
Phone: (602) 542-6408
Fax: (602) 542-0466

Notice of Intent to Clear Land — ARS § 3-904

Pursuant to A.R.S. § 3-904 the undersigned, as Owner of the Property described herein, gives this Notice of Intent to Clear Land of protected native plants.

1. **Owner/landowner's agent.** The owner or landowner's agent of the Property upon which protected native plants will be affected:

   Owner's Name _____ Phone _____

   Address _____

   Agent's Name _____ Phone _____

   Address _____

2. **Property.** The description and location of the Property upon which protected native plants will be affected:

   County

   Name of Property/Project _____

   Address _____

   Physical Location (attach map) _____

   (Note: Map must also show surrounding land for 1/2 mile in each direction)

   Tax Parcel ID Nos. _____

   Legal Description (or attach copy) _____

   Number of Acres to be Cleared _____

3. **Owner's Intent.** Landowner's intentions when clearing private land of protected native plants.

   ☐ Owner intends to allow salvage of the plants, and agrees to be contacted by native plant salvagers.

   ☐ Owner intends to transplant the plants onto the same property, or to another property he also owns.

   ☐ Owner has already arranged for salvage of the plants.

   ☐ Owner does not intend to allow salvage of the plants.

   ☐ Other _____

4. **Approximate starting date.** _____
   (See notice period listed on reverse side)

The information contained in this application is true and accurate to the best of my knowledge. I understand that providing false information is a felony in Arizona

Signature _____ **Date** _____

Notice to salvagers: Consent of the landowner is required before entering any lands described in this notice.

Explanation Of This Form

1. **Notice of Intent to Clear Land.**
   The majority of the desert plants fall into one of four groups specially protected from theft, vandalism or unnecessary destruction. They include all of the cacti, the unique plants like Ocotillo, and trees like Ironwood, Palo Verde and Mesquite. In most cases the destruction of these protected plants may be avoided if the private landowner gives prior notice to the Arizona Department of Agriculture.

2. **Notice Period.**
   When properly completed, this form is to be sent to the Department within the time periods described below. Landowners/ developers are encouraged to salvage protected native plants whenever possible.

3. **Information to Interested Parties.**
   The information in this notice will be posted in the applicable state office of the Department and mailed to those parties (salvage operators, revegetation experts) who have an interest in these plants and may approach the landowner with the possibility of saving the plant(s) from unnecessary destruction.

Notice to Landowner:

1. The owner may not begin destruction of protected native plants until he receives confirmation from the Arizona Department of Agriculture and the time prescribed below has elapsed. The "Confirmed" stamp only verifies that the Notice has been filed.

Size of area over which the Destruction of Plants will occur	**Length of Notice Period**
Less than one acre	20 days, oral or written
One acre or more, but less than 40 acres	30 days, written
40 acres or more	60 days, written

2. If you are clearing land over an area of less than one acre, oral notice may be given by calling the applicable state office at the telephone number given below.
3. If the land clearing or plant salvage does not occur within one year, a new Notice is required.
4. This Notice must be sent to the applicable state office of the Department of Agriculture at the address given below:

Phoenix Office
1688 W. Adams
Phoenix, AZ 85007
(602) 364 -0935

Tucson Office
400 W. Congress Ste.124
Tucson, AZ 85701
(520) 628-6317
M-F 8a.m. - 11:30 a.m.

Notice to salvagers: Consent of the landowner is required before entering any lands described in this notice.

APPENDIX G: Cultural Resources Desktop Analysis

TETRA TECH

February 23, 2022

Ms. Ali Weaver
Director, Project Development
Silicon Ranch Corporation
1801 California Street, Suite 2400
Denver, Colorado 80202

Subject: Cultural Resources Due Diligence Desktop Study – SR McNeal Solar Power Project, Cochise County, Arizona

Tetra Tech, Inc. (Tetra Tech) has prepared this cultural resources due diligence desktop study for the proposed SR McNeal Solar Power Project (SR McNeal). SR McNeal will be a 20 megawatt (MW) solar generating facility with a Battery Energy Storage System (BESS), located near the town of McNeal, in Cochise County, Arizona. Based on conceptual facility layout information provided by Silicon Ranch Corporation (SRC), the project includes development of a utility-scale photovoltaic solar power generation facility located on the north and south sides of W Bagby Rd, west of N Central Hwy and W Bagby Rd, approximately 3.5 miles southwest of McNeal, Arizona. The SR McNeal development area consists of approximately 160 acres of potentially developable land. This is referred to as the Project Area. Based on the information provided, rows of solar panels will be installed across the project area within the property boundaries. Site improvements will also include construction of a substation, operations and maintenance facility, unpaved access roadways, and installation of a collection system to route power from the solar power generation facility to the existing power grid.

Tetra Tech conducted a site file search of the Project Area and surrounding 1-mile buffer, which is referred to as the Research Area. The Research Area covers portions of Township 21S Range 26 E, Sections 27-29 and 32-34, and Township 22S Range 26E, Sections 3-5 and 8-10 on the Mc Neal U.S. Geological Survey (USGS) 7.5 minute quadrangle map. Information was obtained from the AZSITE database, which is managed by a consortium of state agencies and which is available only to qualified professionals.

Within the Research Area, the AZSITE database shows that four prior investigations have been undertaken between 2003 and 2019 (Table 1; Figures 1 and 2). None of these investigations covered portions of the Project Area.

The AZSITE database shows that five cultural resources have been previously recorded within the Research Area (Table 2); all are archaeological sites. Of the five sites, one is a historic well, pump, and cistern likely representing the remains of a historic homestead. This site has been recommended not eligible for listing in the National Register of Historic Places (NRHP), but this recommendation has not received concurrence by the Arizona State Historic Preservation Office (SHPO). The remaining four sites in the Research Area have advanced ASM site numbers, indicating that they do not yet have formal documentation. These site numbers were assigned during the 2016 Whitewater Draw Survey

Tetra Tech, Inc.
350 Indiana St, Suite 500, Golden, CO 80401
Tel 303.980.3727 Fax 303.217-5705 tetratech.com

conducted by Environmental Planning Group, but no other data is available in AZSITE concerning these four sites. No previously documented sites are within the Project Area.

Sites that are determined or recommended as eligible, or that lack NRHP eligibility recommendations, must be avoided during all ground disturbing activities. Sites that are determined not eligible do not require additional management.

Table 1 – Previous Investigations in the Research Area

Report Number	Author(s)	Report Title	Year
2003-77.ASM	Jones, Jeffrey T., and Allen Dart	*Cultural Resources Survey of Proposed Construction and Improvement Areas at the Whitewater Draw Wildlife Area South of McNeal in Cochise County, Arizona*. Old Pueblo Archaeology Center Letter Report No. 2003.001. Tucson, Arizona.	2003
2006-29.ASM	McKee, Brian R.	*Cultural Resources Survey of 154.1 Acres Proposed for Fencing Improvements, Moist Soil Areas, and Water Pipeline in the Whitewater Wildlife Area South of McNeal in Cochise County, Arizona*. Old Pueblo Archaeology Center Letter Report No. 20052006.005. Old Pueblo Archaeology Center, Tucson.	2006
2019-34.ASM	Wolfe, Allison	*A Class III Cultural Resources Survey of 11 Acres at the Whitewater Draw Wildlife Area, near McNeal, Cochise County*. LSD Technical Report No. 185694. Logan Simpson Design, Inc., Tucson, Arizona.	2019
2016-43.ASM	Myers, Jordan, and Andrew M Vorsanger	*A Class III Cultural Resources Survey of 360 Acres at Whitewater Draw Wildlife Area in Cochise County, Arizona*. EPG Cultural Resource Services Technical Paper No. 2016-05. Environmental Planning Group, Phoenix, Arizona.	2016

Table 2 – Previously Documented Cultural Resources in the Research Area.

Site Number	Time Period	Site Type	NRHP Eligibility
AZ FF:6:33(ASM)	Historic	Well, Pump, and Cistern	Recommended Not Eligible
AZ FF:6:40(ASM)*	No Data Available	No Data Available	No Data Available
AZ FF:6:41(ASM) *	No Data Available	No Data Available	No Data Available
AZ FF:6:42(ASM) *	No Data Available	No Data Available	No Data Available
AZ FF:6:49(ASM) *	No Data Available	No Data Available	No Data Available
* Advanced ASM site			

The Housing and Urban Development Tribal Directory Assessment Tool [1]lists seven tribes that claim an ancestral affiliation with Cochise County, Arizona. These tribes include:

- Fort Sill Apache Tribe of Oklahoma
- Hopi Tribe of Arizona
- Kickapoo Tribe of Oklahoma

[1] U.S. Department of Housing and Urban Development HUD EGIS. 2021. Tribal Directory Assessment Tool (TDAT) Available at https://egis.hud.gov/TDAT/. Accessed February 18, 2022.

- Mescalero Apache Tribe of the Mescalero Reservation, New Mexico
- San Carlos Apache Tribe of the San Carlos Reservation, Arizona
- Tohono O'odham Nation of Arizona
- White Mountain Apache Tribe of the Fort Apache Reservation, Arizona

In addition, the Government to Government Consultation Toolkit[2] lists the following nine tribes that should be consulted for Projects located on the McNeal USGS quadrangle maps:

- Pueblo of Zuni, New Mexico
- Tohono O'odham Nation, Arizona
- Yavapai-Apache Nation, Arizona
- White Mountain Apache, Arizona
- San Carlos Apache Tribe
- Pascua Yaqui-Tribe, Arizona
- Hopi Tribe, Arizona
- Fort Sill Apache Tribe of Oklahoma
- Mescalero Apache Tribe of the Mescalero Reservation, New Mexico

It should be noted that these data, while useful for a high-level overview, are no substitute for performance of in-field investigations that would provide more complete results. Further, if a federal or state permit is required for Project development, regulatory agencies will likely require expanded background research and field efforts that could involve multiple phases of investigation (e.g., identification, testing, mitigation, etc.).

Sincerely,

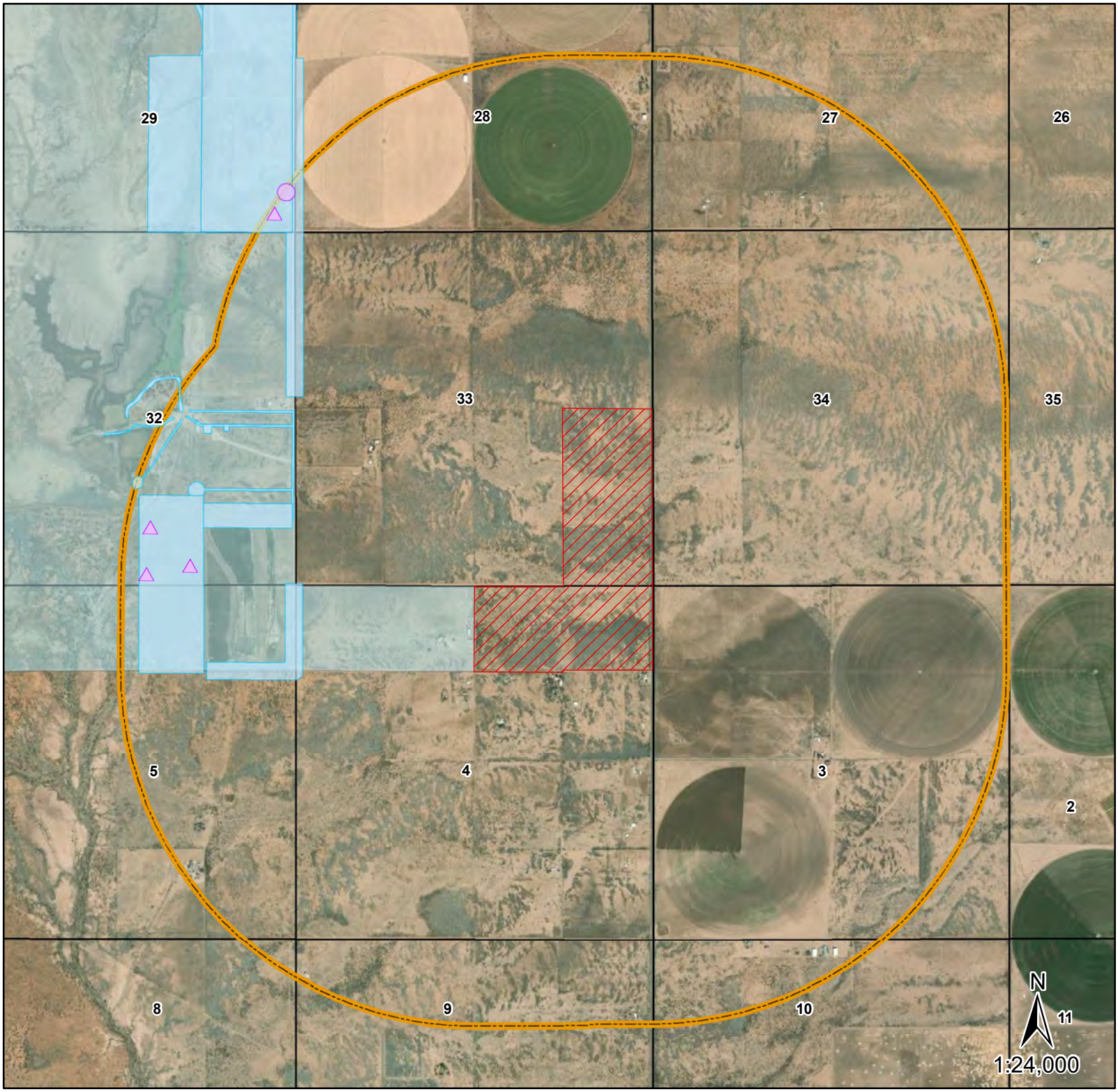
TETRA TECH, INC

Deborah Huntley, PhD, RPA
Principal Archaeologist – Southwest Region

Attachments: Figures 1 and 2

[2] Arizona State Historic Preservation Office and Salt River Pima-Maricopa Indian Community. N.D. Government to Government Consultation Toolkit. Available at https://sites.google.com/view/az-consultation-toolkit/home. Accessed February 21, 2022.

Figures



Silicon Ranch Project

Class I Cultural Resources

Cochise County, Arizona

TETRA TECH

ASM and SHPO Class I Resources

- ASM Sites
- ASM Projects
- Advanced ASM Sites

Land Managment

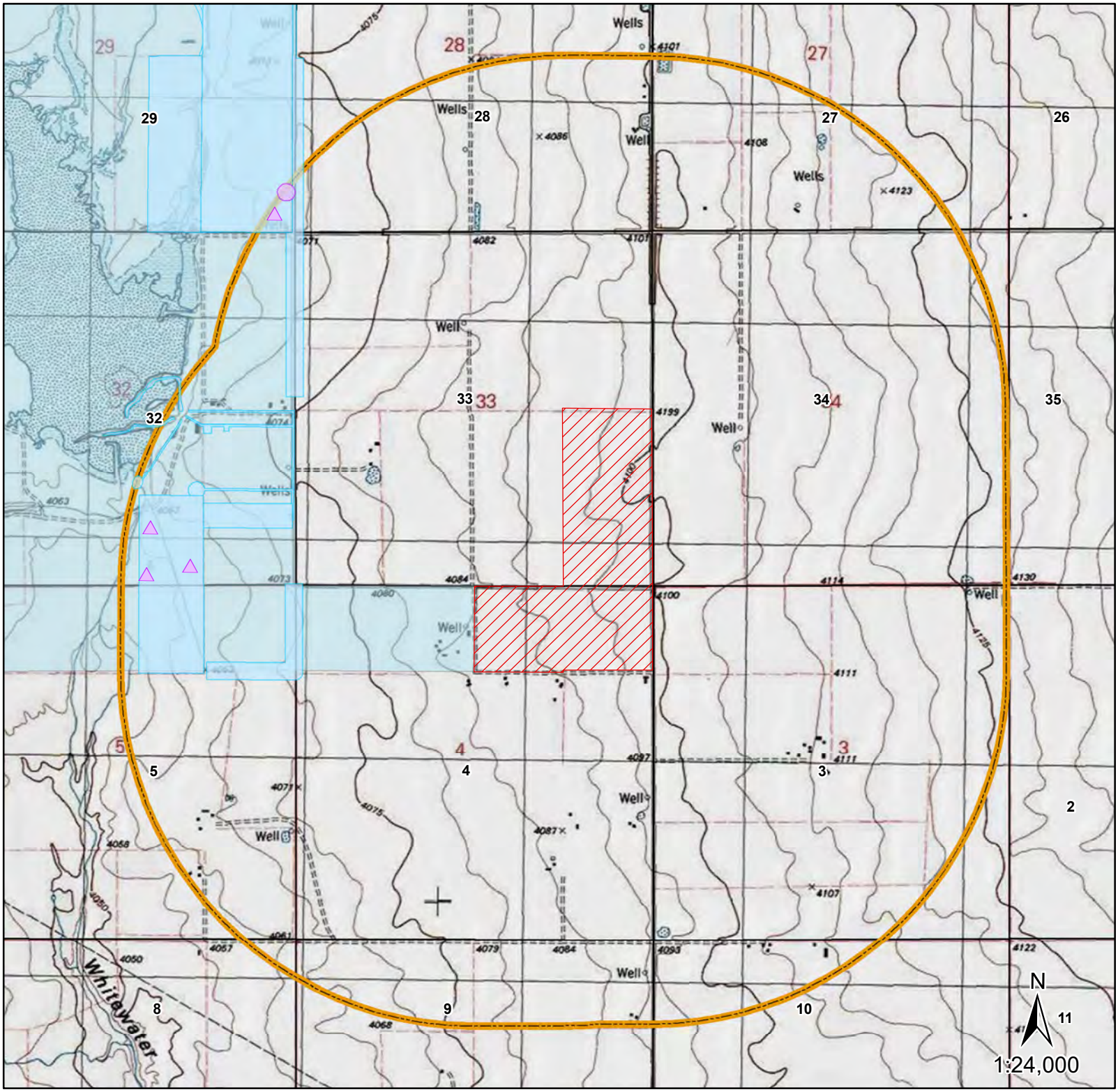
- Private (Clear, No Fill)
- State
- US Bureau of Reclamation

Project Components

- Project Boundary
- Research Area

Boundaries

- PLSS Section



Silicon Ranch Project

Class I Cultural Resources

Cochise County, Arizona

TETRA TECH

ASM and SHPO Class I Resources

- ASM Sites
- ASM Projects
- Advanced ASM Sites

Land Managment

- Private (Clear, No Fill)
- State
- US Bureau of Reclamation

Project Components

- Project Boundary
- Research Area

Boundaries

- PLSS Section

APPENDIX H: Community Outreach Mailing

PAULEY RICKIE ONAL
40505014A
4347 W COX RD
MCNEAL, AZ 85617

COCHISE COUNTY
40411076
C/O BOARD OF SUPERVISORS
1415 W MELODY LANE BLDG G
BISBEE, AZ 85603

CLOUD MARTIN JAMES & ELIZABETH ANNE
40505011B
PO BOX 72
BISBEE, AZ 85603

PAULEY RICKIE O
40505006
4347 W COX RD
MCNEAL, AZ 85617

SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE INC
40505002
350 N HASKELL AVE
WILLCOX, AZ 85643

PEREZ OCTAVIO
40423016E
7415 W MARYLAND AVE
GLENDALE, AZ 85303

POTTS GARY LEE
POTTS JAMES A ET AL
40411069D
7136 RAMADA DR
EL PASO, TX 79912

CALDWELL WILLIAM S
40505012
16 WINDMILL HILL SOUTH
PUTNEY, VT 05346

GARMAC PROPERTIES LP
GARBER PROPERTIES LP
40501004
1480 E BETHANY HOME RD STE 130
PHOENIX, AZ 85014

MITCHELL KENNETH RAY SR
40411069E
6450 E GOLF LINKS RD APT 1118
TUCSON, AZ 85730

RICHARDS PATTI MOSS
BYRD LINDA K
40411065
1194 ARRINGTON LN NE
BROOKHAVEN, GA 30319

CALDWELL WILLIAM S
40505016
16 WINDMILL HILL SOUTH
PUTNEY, VT 05346

RHYAN LEONA C
40505010
C/O VIRGINIA L LITTLE
1184 SALING DR
COLUMBUS, OH 43229

PEREZ OCTAVIO
40423016C
7415 W MARYLAND AVE
GLENDALE, AZ 85303

ELDRIDGE RANEE A
40411069B
4384 W BAGBY RD
MCNEAL, AZ 85617

LADD JUSTIN W
40505011A
4423 W BAGBY RD
MCNEAL, AZ 85617

VANN MELINDA
DARRAH RANDY
40505003
8348 N CENTRAL HWY
MCNEAL, AZ 85617

PEREZ OCTAVIO
40423016D
7415 W MARYLAND AVE
GLENDALE, AZ 85303

ENRIQUEZ THOMAS P & STEFANIE M
40423011A
238 W PURDY LN
BISBEE, AZ 85603

POTTS GARY LEE
POTTS JAMES A ET AL
40411069C
7136 RAMADA DR
EL PASO, TX 79912

GRIFFIN LARRY MERLE
40505013
8298 N CENTRAL HWY
MCNEAL, AZ 85617

GARMAC PROPERTIES LIMITED PARTNERSHIP
40501007
1480 E BETHANY HOME RD STE 110
PHOENIX, AZ 85014

GARMAC PROPERTIES LP
GARBER PROPERTIES LP
40431004
1480 E BETHANY HOME RD STE 130
PHOENIX, AZ 85014

RIGGS REBECCA LYNN
40505017
12507 S 191ST AVE
BUCKEYE, AZ 85326

CALDWELL WILLIAM S
40505004
16 WINDMILL HILL SOUTH
PUTNEY, VT 05346

ARIZONA GAME & FISH COMMISSION
40505001
5000 WEST CAREFREE HIGHWAY
PHOENIX, AZ 85086

SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE INC
40411070
350 N HASKELL AVE
WILLCOX, AZ 85643

SILICON RANCH

04/13/2022

Dear Friends and Neighbors,

My name is Adrian Markocic and I represent Silicon Ranch Corporation**.** Silicon Ranch Corporation has been in the solar development business since 2011 and since that time we have developed over 130 solar projects across the United States. We are an owner, operator and developer of all of our projects we are now looking to establish a new solar power generation facility in Willcox at the intersection of North Central Highway and West Bagby Road ("Project").

Our Project will generate 20 megawatts of electricity, or enough electricity to power over 4000 homes, along with a battery energy storage system to provide energy when the sun isn't shining. The Project will consist of single tilt solar panels, which will track the sun throughout the day, associated electrical equipment, and a containerized battery system, and all of this will be surrounded by wildlife friendly, chain-link fencing.

At this time, we are anticipating that the Project will take approximately five months to construct with an additional five months needed to conduct testing of the electronic equipment. During these phases we anticipate that over 100 trades people will be employed. The Project is planned to deliver electricity to the local grid starting in May of 2023 and once operational it will not create dust, odors, noise or traffic; any required water will be transported to the Project location.

The county requires us to go through the zoning process of acquiring a special use authorization. Part of that process includes getting feedback from you, our neighbors.

You will also be receiving a letter from the county, with contact information in case of objections to the project. If you have any concerns, questions or objections, we ask and encourage you to contact us first. We are happy to address them, and it may be something we haven't thought of that will make the project that much better.

I've attached some information about Silicon Ranch for your review along with a map of the general project location, and again, should you have any questions please do not hesitate to reach out to me. We hope that this will be the start of a very cooperative relationship.

Adrian Markocic

ADRIAN MARKOCIC
Senior Manager, Project Development | Silicon Ranch
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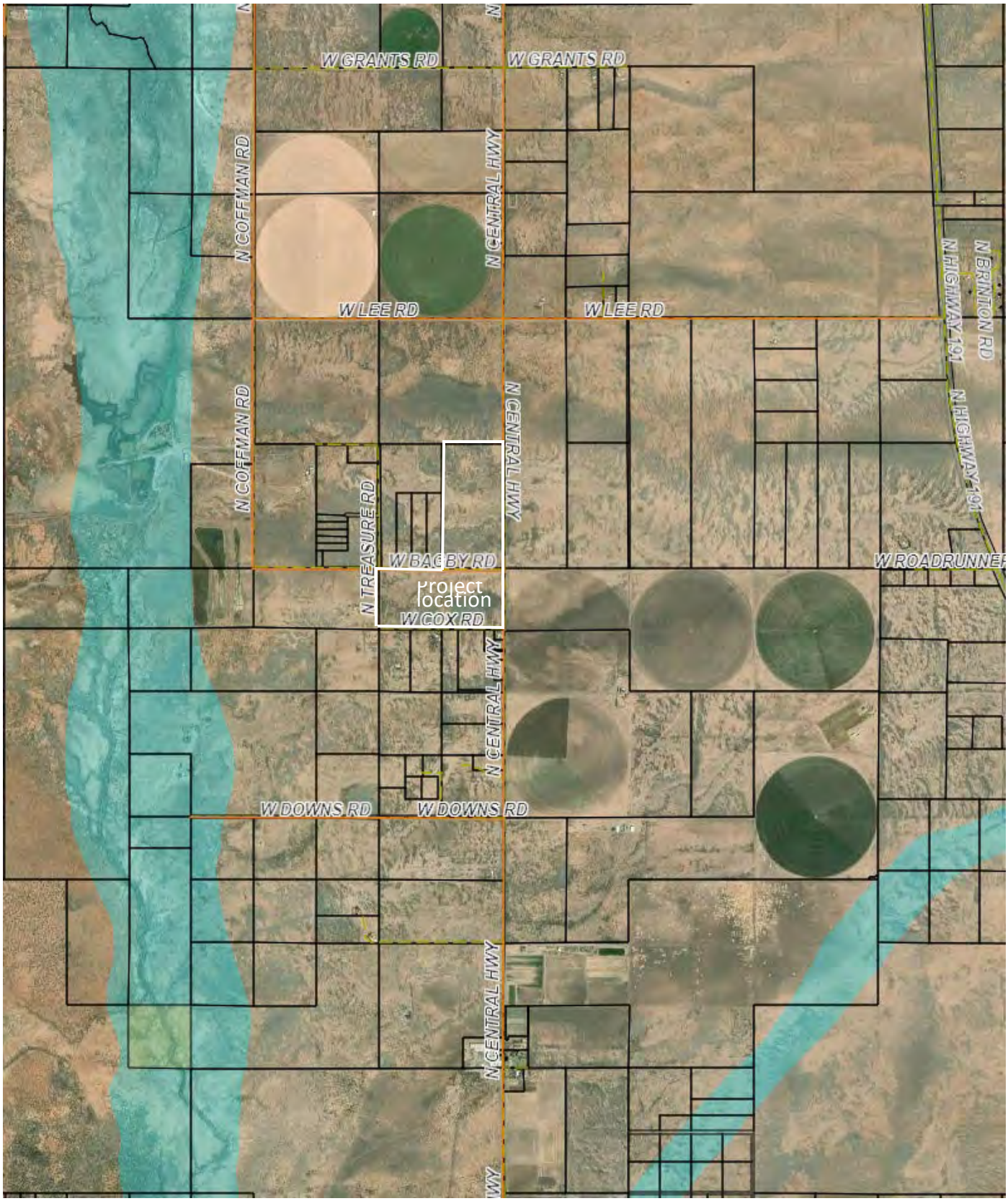
M. +1 412-297-1671
F. +1 615-577-4604 | www.siliconranch.com
222 Second Ave. S. Suite 1900 | Nashville, TN 37201


W GRANTS RD
W GRANTS RD
N COFFMAN RD
N CENTRAL HWY
N HIGHWAY 191
N BRINTON RD
W LEE RD
W LEE RD
N COFFMAN RD
N CENTRAL HWY
N TREASURE RD
W BAGBY RD
W ROADRUNNER
project location
W COX RD
N CENTRAL HWY
W DOWNS RD
W DOWNS RD
N CENTRAL HWY

SILICON RANCH®

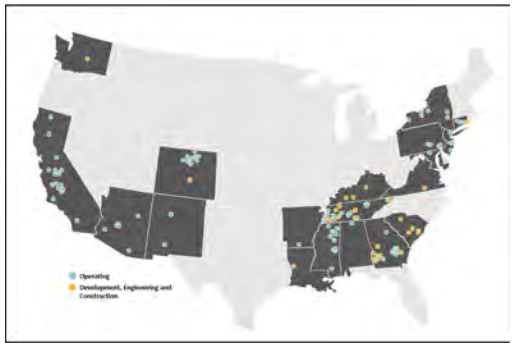
WHAT SETS US APART

BUSINESS MODEL

Unlike many solar developers who sell their projects to third parties, **we own and operate our entire portfolio for the long-term.**

This approach underscores our deep commitment to the partners and communities we serve and means we stand behind the performance of our facilities day in and day out.

GEOGRAPHIC REACH



Silicon Ranch has doubled our operating portfolio for 3 consecutive years, with more than 130 facilities commissioned in 15 states.

One of our founding principles is that "we do what we say we will do." Since we began operations in 2011, we have successfully executed **every** project for **every** power purchase agreement we have signed.

CONCERN FOR COMMUNITY

"When we decided to explore options for the farm that had been in our family for three generations, ***we sought out a partner who would respect the land, the community, and continue the tradition of being a good neighbor****. We found that partner in Silicon Ranch. From the outset of the project, and throughout the construction and operation of the solar array,* ***Silicon Ranch engaged the community, over-delivered on every commitment****... The solar facility is attractively designed, well-maintained, and has become a point of pride for the community. Based on my family's and our community's experience,* ***I strongly recommend Silicon Ranch as a reliable and trustworthy partner****."*

— Steve Ivey,
Landowner

BY THE NUMBERS

Founded in 2011 in Nashville, TN

3 Gigawatts of PV Systems
Enough to power +400k homes

130+ Facilities in 15 States

1st Large-Scale Solar Facilities in Multiple States

siliconranch.com

Making Solar Do More™

APPENDIX I: Decommissioning Plan

SR McNeal

Decommissioning Plan

Submitted to:

Cochise County
Planning and Zoning

Submitted on behalf of:

SR McNeal, LLC
222 2nd Ave South, Suite 1900
Nashville, TN 37201

615-577-4786

srcoperations@siliconranch.com

April 28, 2022

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Background

SR McNeal LLC (McNeal), will construct, own and operate a 20.0-megawatt (MW AC) (plant capacity at point of interconnection) solar photovoltaic (PV) power generation facility and associated electrical Collector Substation facility, collectively referred to as SR McNeal Solar ("Project"). The Project is situated on approximately 159 acres of land, with 126 acres being fenced in for the project boundary. The Project site is privately owned land, approximately 3 miles southwest of McNeal and 16 miles northwest of Douglas in Cochise County. The Project is located near the intersection of North Central Highway and West Bagby Road (Attachment 1).

This Facility Decommissioning Plan ("Decommissioning Plan") is developed for Cochise County. The Decommissioning Plan provides for the decommissioning and deconstruction of the facility, and for restoration of the Project site, collectively referred to as "decommissioning". The Decommissioning Plan is to be implemented upon completion of project lifecycle, discontinuance of operations or abandonment (i.e., no electricity has been generated for up to a period of 6 months) of the Project in whole or in part.

The Decommissioning Plan includes the following:

1. Removal of solar panel structures and all appurtenant above and belowground equipment located within the site including the Collector Substation (does not include new SSVEC Substation);

2. Removal of on-site above and below ground electricity lines within the Project area (does not include existing overhead Sulfur Springs Valley Electric Cooperative, Inc. (SSVEC) transmission line);

3. Restoration of any disturbed soil and re-vegetation of the site to the pre-construction condition, with native vegetation similar to the vegetation in the surrounding vicinity; and

4. Restoration or reclamation of project roads to their pre-construction condition unless the then- existing landowner of the property elects to retain the improved roads for access throughout the site

The Decommissioning Plan shall factor in the following items, some of which are redundant with those above:

1. Cost to remove solar panels and support structures, with allowance for salvage value for the support structures;

2. Replacement of disturbed soil from removal of support structures;

1.2 Decommissioning Plan Purpose

The purpose of this Decommissioning Plan is to clarify the process to conduct decommissioning activities for the permanent closure of the Project or a portion of the

Project. The facility is intended to operate for at least 40 years. This Decommissioning Plan describes the approach for removal and/or proper abandonment of facilities and equipment associated with the Project and describes anticipated land restoration activities at the end of the term or earlier if all or a portion of the Project is discontinued. Elements of this process may be adjusted based on baseline conditions at the time of decommissioning.

2 PROJECT COMPONENTS

The Project's components subject to decommissioning include the equipment summarized below. The decommissioning activities associated with these components are discussed in Section 3.0 of this Decommissioning Plan.

2.1 Site Construction Preparation

Construction facilities will be located off West Bagby Road and North Central Highway in Cochise County within the Project boundaries. The construction facilities will include the construction entrance/exit, roadway and the parking and staging areas for vehicle and equipment storage and maintenance. A laydown area will be used for pre-assembly of components and materials storage/staging. Space in the construction facility area will also provide construction worker parking. Two access points, one for each parcel, will be built for access to the site via new gates at each access point shown on the Site Plan. The site access driveways and gates will remain in place for the operational phase of the Project.

2.2 PV Equipment Installation

The PV equipment for the Project will consist of approximately 60,852 First Solar S6 PV modules (or modules of a similar quality) mechanically fastened onto a steel mounting system. The steel mounting system will include approximately 10,142 galvanized steel posts that will be driven into the ground. The project site will include a 69kV Collector Substation with a main power transformer and associated equipment on concrete foundations.

A “light-on-land” philosophy will be used for the grading and installation of the entire Project. Several features of this philosophy are as follows:

1. Minimal soil disturbance. Existing vegetation will be preserved where possible, and soil disturbance will be reduced to the extent practicable.

2. Preservation of property. Temporary fencing will be used to protect areas not to be disturbed. Existing improvements, properties, utilities, facilities, trees and plants that are not to be removed will be protected from damage.

3. Temporary staging areas will be utilized within the solar field during construction, and they will ultimately be built over with solar arrays or interconnection facilities. The areas will be seeded after construction is complete.

4. Site internal roads in the solar field will be constructed by compacting existing soil and placement of compacted gravel (where necessary).

2.3 Roads

Access to the project will be from North Central Highway and West Bagby Road as shown in the attached layout.

2.4 Vegetation Management

Vegetation will be monitored and controlled throughout the production term in order to provide adequate vegetative cover and reduce erosion. Control methods include mechanical control via typical mowing equipment and/or appropriate use of herbicide for noxious/invasive weed control.

3 PROJECT DECOMMISSIONING AND RECYCLING

The activities involved in the facility closure will depend on the expected future use of the site. Certain facility equipment may have future uses, such as roads. The currently envisaged plan involves completion of the initial decommissioning in a six-month period with full restoration requiring additional time for plant re-growth and establishment as required.

In general, decommissioning will attempt to maximize the recycling of all facility components. Specific opportunities for recycling (e.g., PV solar modules) are discussed below in the context of various site components. The individual Project components to be decommissioned will be recycled to the maximum extent practicable.

The key Project components to be affected by decommissioning activities are discussed below. The general decommissioning approach will be the same whether a portion of the Project or the entire Project is decommissioned.

3.1 Decommissioning Preparation

The first step in the decommissioning process will be to assess existing site conditions and prepare the site for demolition.

Site decommissioning and equipment removal can take several months. Therefore, access roads, fencing and electrical power will temporarily remain in place for use by the decommissioning and restoration workers until no longer needed. Re-vegetation of disturbed areas can take several years to establish.

Demolition debris will be placed in temporary onsite storage area(s) for no more than 120 days per location with no more than one 120-day extension per location if determined.

3.2 Equipment Removal and Recycling

During decommissioning, Project components will be removed from the site and recycled to the extent practicable. The PV solar panels, tracker and supports will be removed in their entirety from the site using forklifts, dump trucks, and flat-bed and rear-loader garbage trucks. The tracker support posts will be removed by backhoes with attachments. Cranes

will be required to remove the inverters and transformers. Miscellaneous PV and Collector Substation equipment on concrete pads will be removed, and concrete pads broken up and removed for disposal. Cable and wiring shall be removed, unless otherwise agreed upon with landowners for buried cables deeper than 3 ft (approximate plow depth).

The First Solar S-6 Plus Modules (or modules of a similar quality) will be de-energized, disconnected and dismantled from the table mounts by sliding the panels off the table once the mounting clamps have been loosened. The panels will then be collected and loaded into standard enclosed trucks and transported to a recycling or disposal facility as appropriate.

The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried with the on-site equipment being used. The majority will be processed for transportation to an offsite recycling center. Steel, copper, and aluminum will be recycled to the extent practicable.

3.3 Roads

Onsite access roads will remain in place to accomplish decommissioning at the end of the facility's life. At the time of decommissioning, if the landowner(s) determines that certain roads will be beneficial for future use of the property, those roads may remain after decommissioning. Roads that will not be re-used will be restored to preconstruction conditions. The ground surface will be restored and revegetated as described in Section 3.4.

3.4 Site Restoration

Once removal of Project equipment is complete, the site will be restored to preconstruction conditions or as directed by applicable local, State or Federal regulations, and re-vegetated.

3.4.1 Evaluation of Restoration Requirements

Revegetation of disturbed areas can take several years to accomplish. The restoration will be enhanced by the operational vegetation management plan outlined in Section 2.4 above.

3.4.2 Restoration Plan

Decommissioning shall be completed with the appropriate dust suppression and erosion control methods utilized as appropriate and in accordance with local, State or Federal regulations. Based on the site conditions, a biologist will develop a restoration plan acceptable to the County at the time of decommissioning. The restoration plan will include de-compaction as appropriate and re-vegetation requirements to restore the site to pre-construction conditions. Any land that is to be returned to farming will not be re-vegetated, but instead will be cultivated. Any additional soil treatments will be indicated in the restoration plan. Because of the limited disturbance to soils and site contours by the construction of the Project, it is expected that restoration will largely involve reseeding. De-compaction, as required, may involve disking or similar method. Reseeding will be accomplished by broadcast, possibly using manually operated cyclone-type bucket spreaders, mechanical

seed spreaders, blowers, hydroseeders, rubber-tired all-terrain vehicles equipped with mechanical broadcast spreaders, or other similar or more effective measures. Seed in the spreader hoppers will be mixed to discourage separation of the component seed types. Where broadcast seeding is employed, seeded areas may be raked or harrowed to cover the seed.

Re-vegetation will be monitored to evaluate the recovery status of rehabilitated areas, identify the need for additional re-vegetation, and to make a final determination regarding re-vegetation success. Seeding efforts will be monitored during the first growing season after seeding to assess initial vegetation establishment, distribution, soil stability, and erosion control. Monitoring will occur annually during each successive growing season and cease when rehabilitation meets the criteria for success.

3.4.3 Monitoring

All rehabilitated areas will be visually inspected to 1) detect areas that require attention, such as areas in which erosion is occurring or invasive or other weeds and 2) identify areas that may require additional measures. Additional measures will be implemented, as necessary, to ensure vegetation growth/establishment. Temporary fencing, when necessary, will be installed to avoid adverse effects to rehabilitation efforts, such as vehicular use of these areas during growth establishment.

Following each growing season, the re-vegetated areas will be visually inspected to identify areas that may require additional measures. Monitoring will qualitatively assess the effectiveness of temporary and permanent erosion control structures in stabilizing disturbed areas and controlling runoff. Site areas requiring remedial work will be identified and any additional erosion control work will be performed. It is anticipated that any active erosion problems will be apparent during the first year or two following re-vegetation or after the first major storm or runoff event. It is anticipated that the monitoring process will continue for at least three growing seasons.

3.4.4 Criteria for Restoration Success

Success criteria for site restoration will be established prior to commencement of decommissioning activities as part of the restoration plan, based on the documented pre-construction conditions, experience gained with re-vegetation during operation and the condition of the site at the time of decommissioning. After a re-vegetated area meets success criteria, re-vegetation will be considered complete and re-vegetation monitoring will cease in that area.

3.4.5 Reporting and Schedule

Acceptable levels of re-vegetation success and the schedule for achieving them could vary based on various factors such as soil and rainfall conditions. It is expected that successful re-vegetation will be accomplished within three years of initiation of re-vegetation activities.

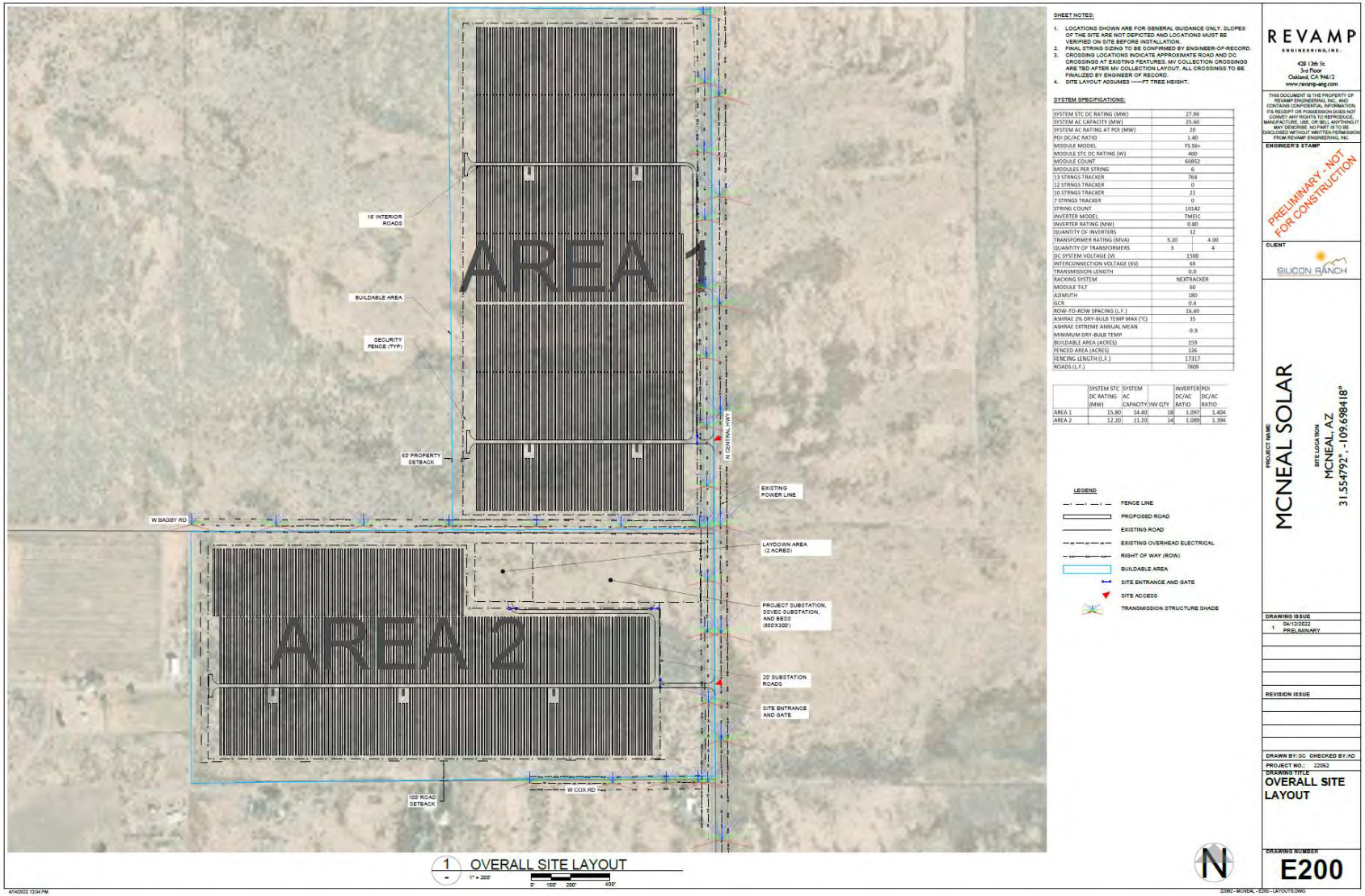
3.4.6 Fence

Following removal of all Project-related equipment, the chain link fence, posts and gates surrounding the project site can be removed and recycled or reused.

4 FUTURE LAND USE

The activities involved in the facility closure will depend on the expected future use of the site. Certain facility equipment may be utilized for future uses. Therefore, the extent of site closure activities will be determined at the time of the closure. Future uses of the lands occupied by the Project will be contingent on the County land use plans and regulations applicable to the site at the time such future use is proposed to be established.

ATTACHMENT 1
SITE LOCATION MAP
AND PROPOSED LAYOUT


AREA 1
AREA 2
15' INTERIOR ROADS
BUILDABLE AREA
SECURITY FENCE (TYP.)
50' PROPERTY SETBACK
N CENTRAL HWY
EXISTING POWER LINE
W BAGBY RD
LAYDOWN AREA (2 ACRES)
PROJECT SUBSTATION, 69/34.5 SUBSTATION, AND BESS (650'X300')
20' SUBSTATION ROADS
SITE ENTRANCE AND GATE
100' ROAD SETBACK
W COX RD
1 OVERALL SITE LAYOUT
1" = 200'
0' 100' 200' 400'
SHEET NOTES:
1. LOCATIONS SHOWN ARE FOR GENERAL GUIDANCE ONLY. SLOPES OF THE SITE ARE NOT DEPICTED AND LOCATIONS MUST BE VERIFIED ON SITE BEFORE INSTALLATION.
2. FINAL STRING SIZING TO BE CONFIRMED BY ENGINEER-OF-RECORD.
3. CROSSING LOCATIONS INDICATE APPROXIMATE ROAD AND DC CROSSINGS AT EXISTING FEATURES. MV COLLECTION CROSSINGS ARE TBD AFTER MV COLLECTION LAYOUT. ALL CROSSINGS TO BE FINALIZED BY ENGINEER OF RECORD.
4. SITE LAYOUT ASSUMES ------FT TREE HEIGHT.
SYSTEM SPECIFICATIONS:
SYSTEM STC DC RATING (MW) 27.99
SYSTEM AC CAPACITY (MW) 25.60
SYSTEM AC RATING AT POI (MW) 20
POI DC/AC RATIO 1.40
MODULE MODEL FS S6+
MODULE STC DC RATING (W) 460
MODULE COUNT 60852
MODULES PER STRING 6
13 STRNGS TRACKER 764
12 STRNGS TRACKER 0
10 STRNGS TRACKER 21
7 STRNGS TRACKER 0
STRING COUNT 10142
INVERTER MODEL TMEIC
INVERTER RATING (MW) 0.80
QUANTITY OF INVERTERS 32
TRANSFORMER RATING (MVA) 3.20 4.00
QUANTITY OF TRANSFORMERS 3 4
DC SYSTEM VOLTAGE (V) 1500
INTERCONNECTION VOLTAGE (KV) 69
TRANSMISSION LENGTH 0.0
RACKING SYSTEM NEXTRACKER
MODULE TILT 60
AZIMUTH 180
GCR 0.4
ROW-TO-ROW SPACING (L.F.) 16.60
ASHRAE 2% DRY-BULB TEMP MAX (°C) 35
ASHRAE EXTREME ANNUAL MEAN MINIMUM DRY-BULB TEMP -9.9
BUILDABLE AREA (ACRES) 159
FENCED AREA (ACRES) 126
FENCING LENGTH (L.F.) 17317
ROADS (L.F.) 7809
AREA 1 15.80 14.40 18 1.097 1.404
AREA 2 12.20 11.20 14 1.089 1.394
LEGEND:
FENCE LINE
PROPOSED ROAD
EXISTING ROAD
EXISTING OVERHEAD ELECTRICAL
RIGHT OF WAY (ROW)
BUILDABLE AREA
SITE ENTRANCE AND GATE
SITE ACCESS
TRANSMISSION STRUCTURE SHADE
N
REVAMP ENGINEERING, INC.
428 13th St. 3rd Floor Oakland, CA 94612 www.revamp-eng.com
PRELIMINARY - NOT FOR CONSTRUCTION
CLIENT
SILICON RANCH
PROJECT NAME
MCNEAL SOLAR
SITE LOCATION
MCNEAL, AZ
31.554792° , -109.698418°
DRAWING ISSUE
1 04/12/2022 PRELIMINARY
REVISION ISSUE
DRAWN BY: SC CHECKED BY: AD
PROJECT NO.: 22062
DRAWING TITLE
OVERALL SITE LAYOUT
DRAWING NUMBER
E200