USDA

United States Department of Agriculture

Natural Resources
Conservation Service

State Office

101 S. Main Street
Temple, TX 76501
Voice 254.742.9800
Fax 254.742.9819

July 28, 2019

Burns & McDonnell
tjademski@burnsmcd.com

Attention: Thomas J. Ademski, Project Manager, *via email*

Subject: LNU-Farmland Protection
Alamito Creek to Fort Davis 138-kV Transmission Line Project
Environmental Assessment of Natural Resources
Jeff Davis and Presidio Counties, Texas

We have reviewed the information provided in your correspondence dated July 3, 2019 concerning the proposed transmission line project located in Jeff Davis and Presidio Counties, Texas. This review should be considered as supporting documentation to the subject application with the Public Utilities Commission of Texas (PUCT). We have evaluated the proposed site and provided technical resources related to soil and land use limitations for consideration within an Environmental Assessment (EA).

The proposed site does not involve a USDA-NRCS Wetland Reserve Easement (WRE), a component of the Agricultural Conservation Easement Program (ACEP).

Please find the attached Custom Soil Resources Report. The soil physical and chemical properties are presented, along with additional restrictions or interpretations for the project area.

The major concerns within the study area involve depth to restrictive layer. More areas in Jeff Davis County involves soils that are very shallow to moderately deep (less than 25 centimeters to 100 centimeters, respectively) to indurated limestone bedrock or petrocalcic layers. Construction activities should be planned to accommodate these areas.

To reduce erosion during construction, we strongly recommend the use of approved erosion control methods, including the use of erosion control equipment near heavily disturbed soil and reducing the amount of bare ground.

If you have further questions, please contact me at 254.742.9836 or by email at Carlos.Villarreal@usda.gov (Preferred).

Sincerely,

USDA

United States Department of Agriculture

CARLOS VILLARREAL

Digitally signed by CARLOS VILLARREAL
Date: 2019.07.28 11:01:24 -05'00'

Carlos J. Villarreal
NRCS Soil Scientist

Attachment: **Custom Soil Resource Report for Jeff Davis County, Texas**
Custom Soil Resource Report for Presidio County, Texas

United States Department of Agriculture

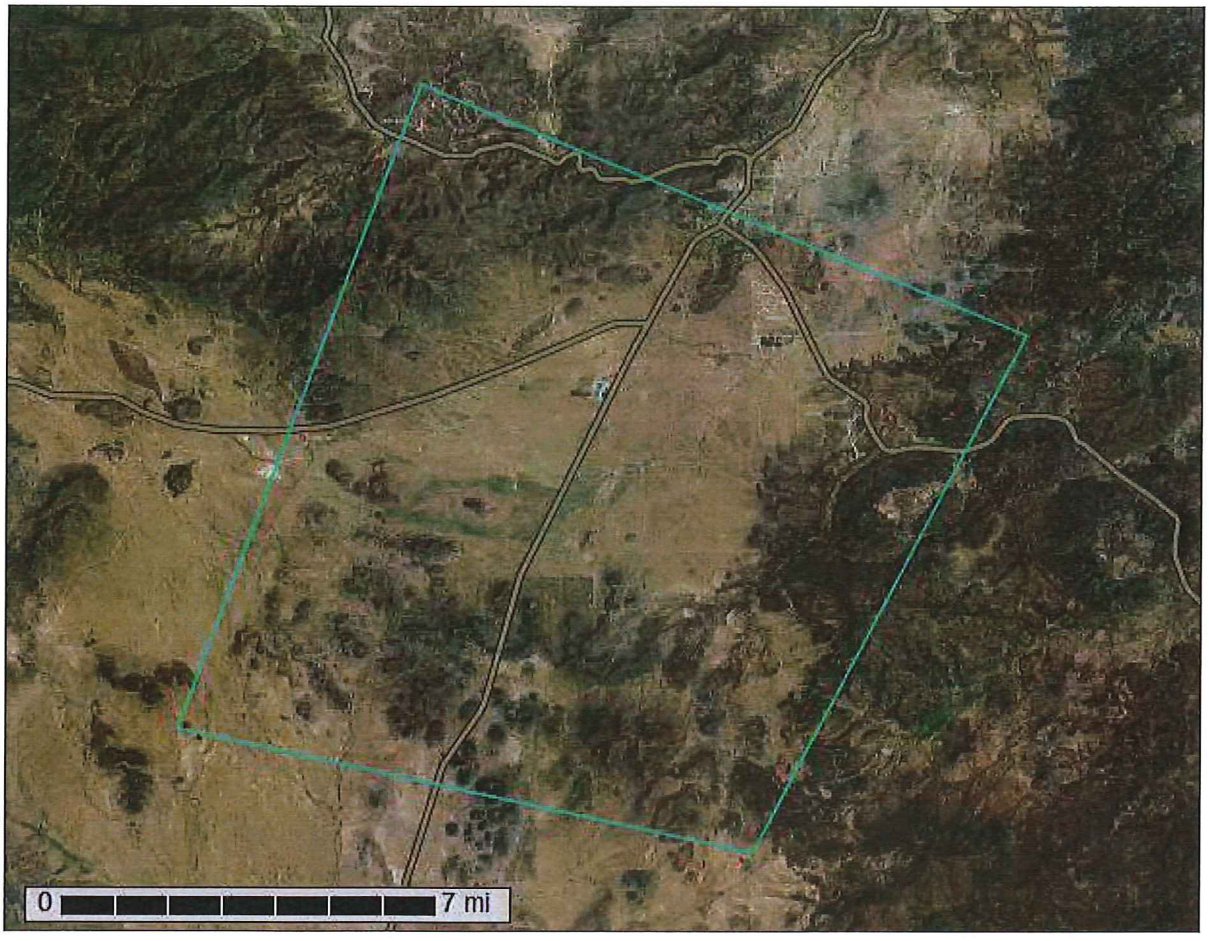
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Jeff Davis County, Texas

Alamita Creek to Ft. Davis 138kV Transmission Line Project



July 28, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

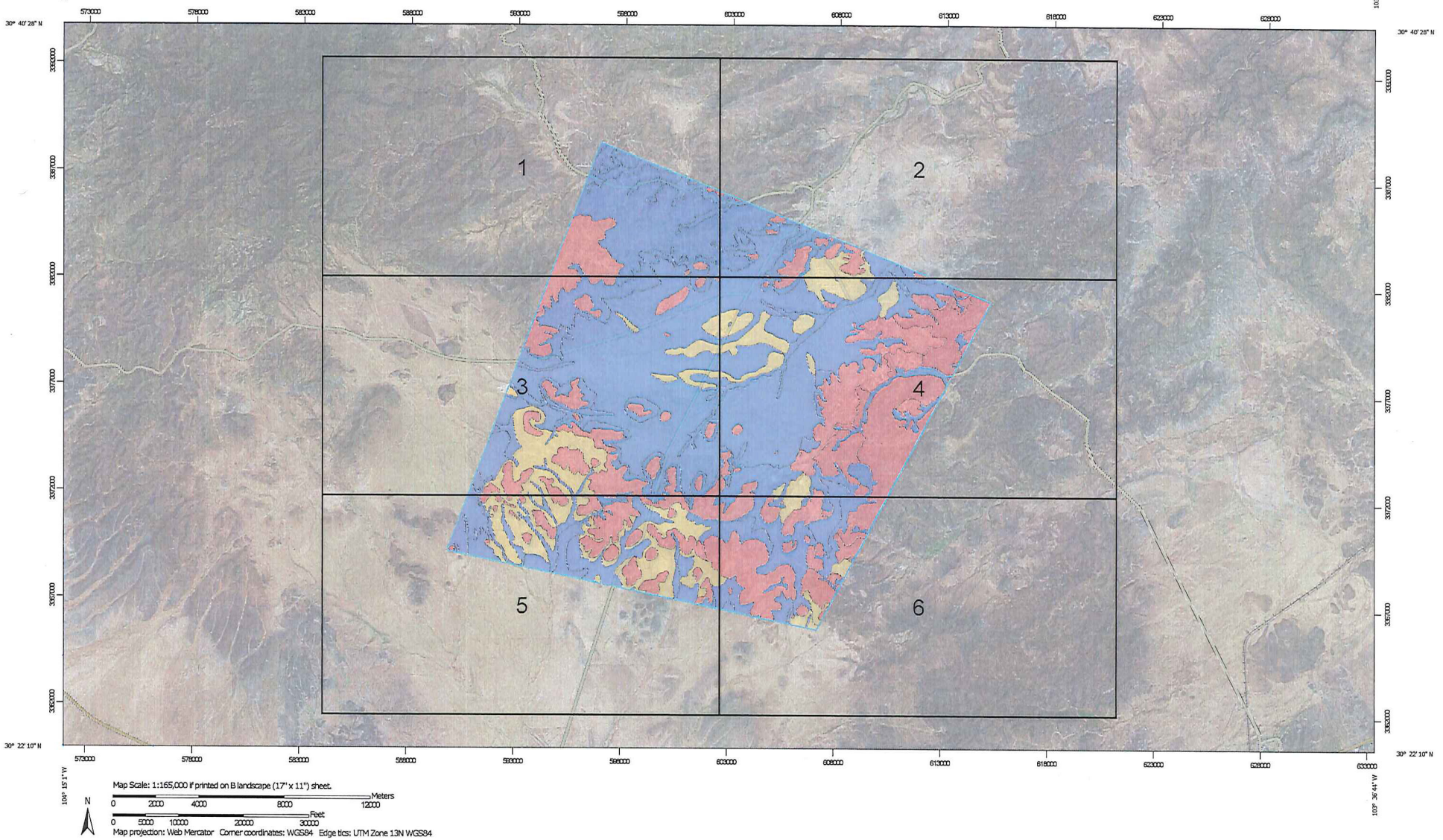
Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

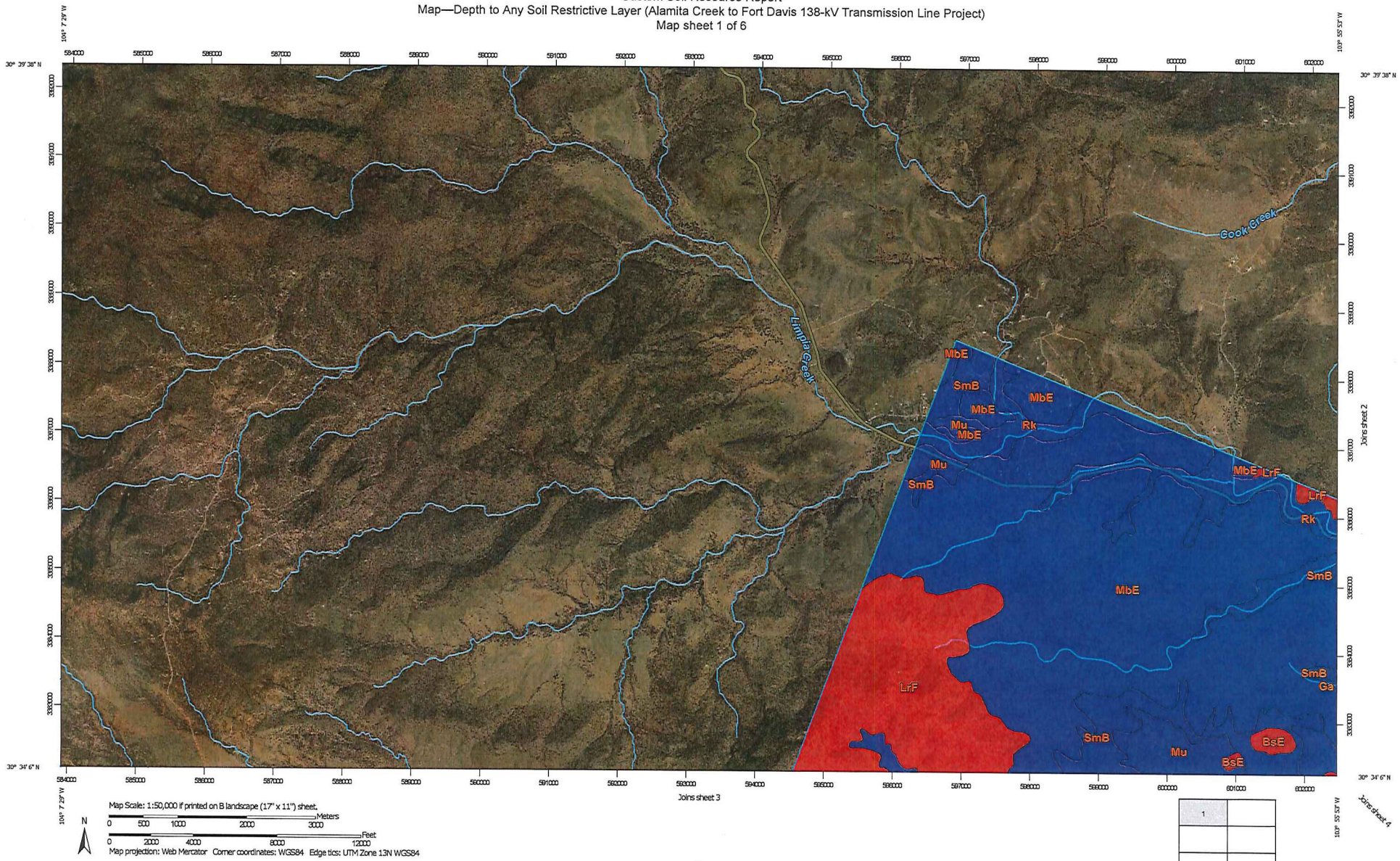
This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

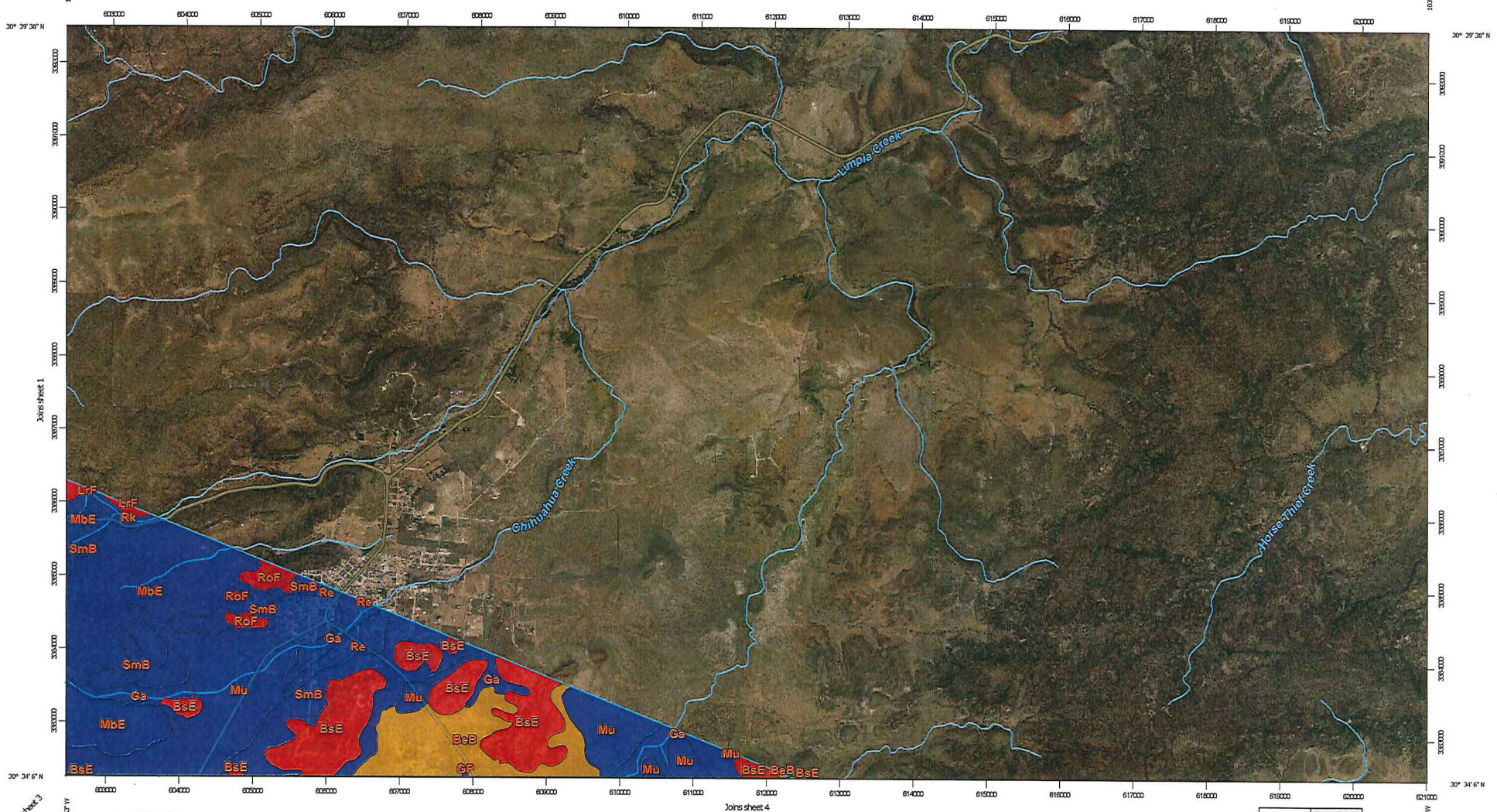
Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)
Index Sheet



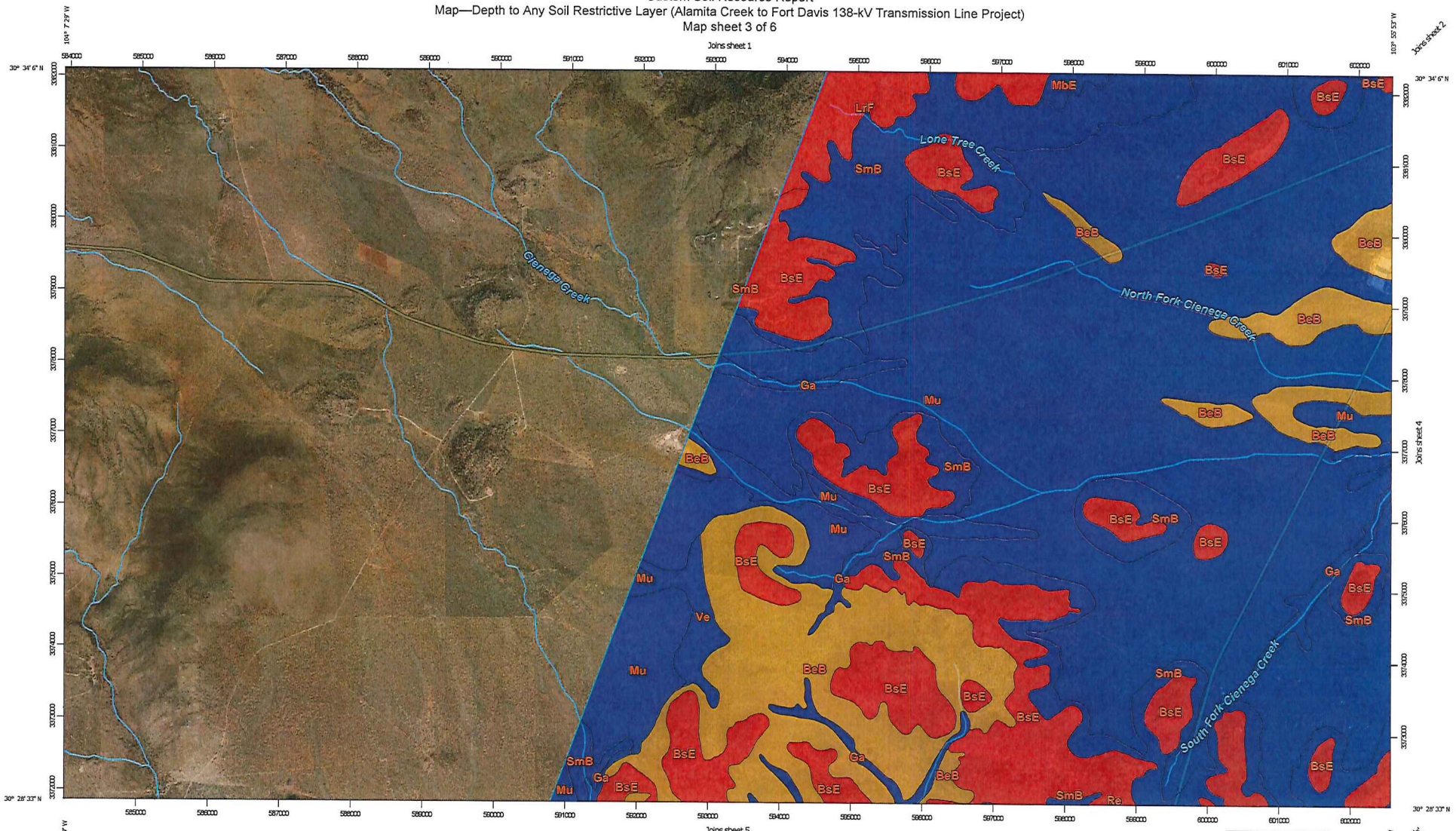
Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)
Map sheet 1 of 6



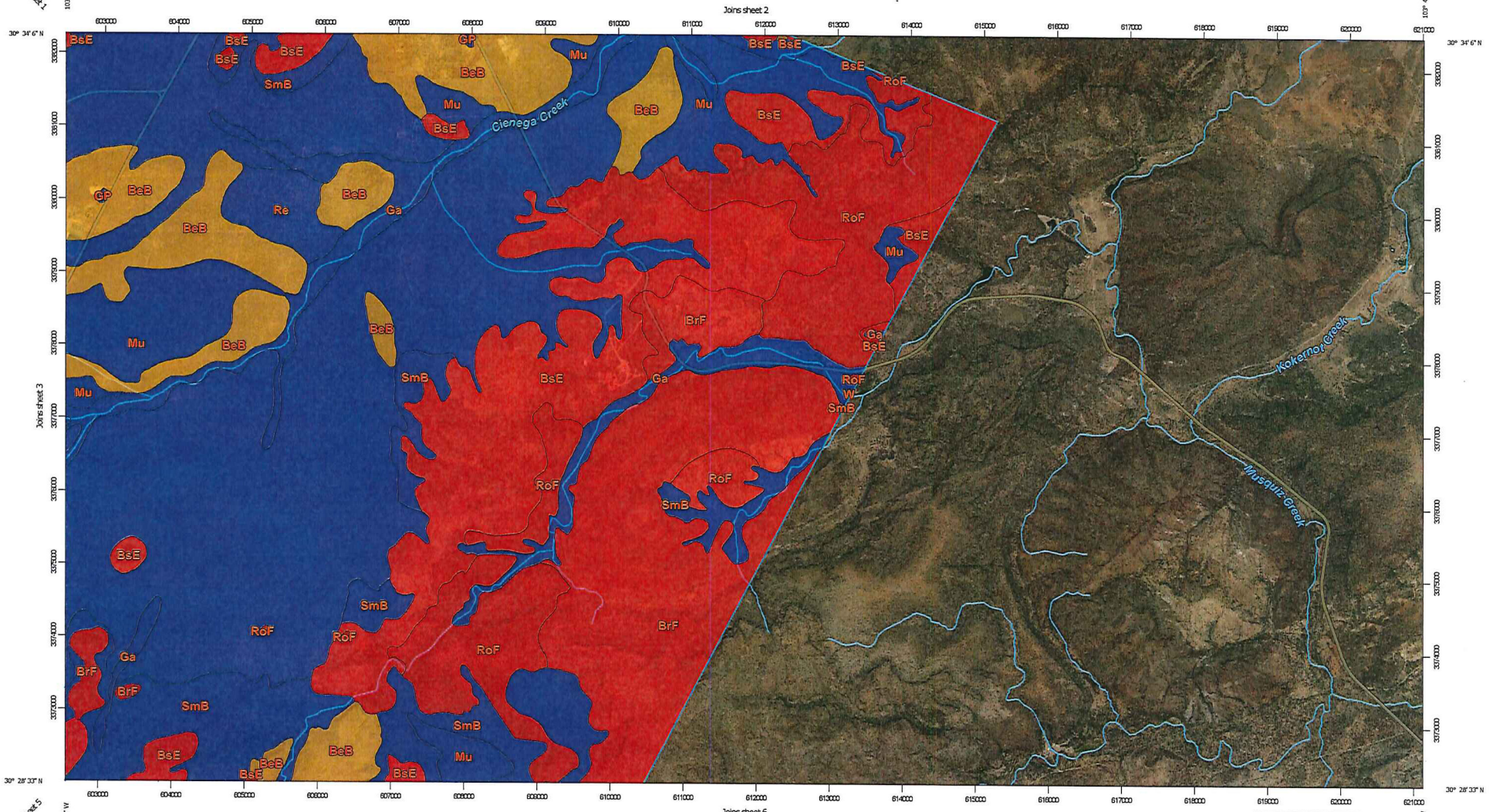
Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)
Map sheet 2 of 6



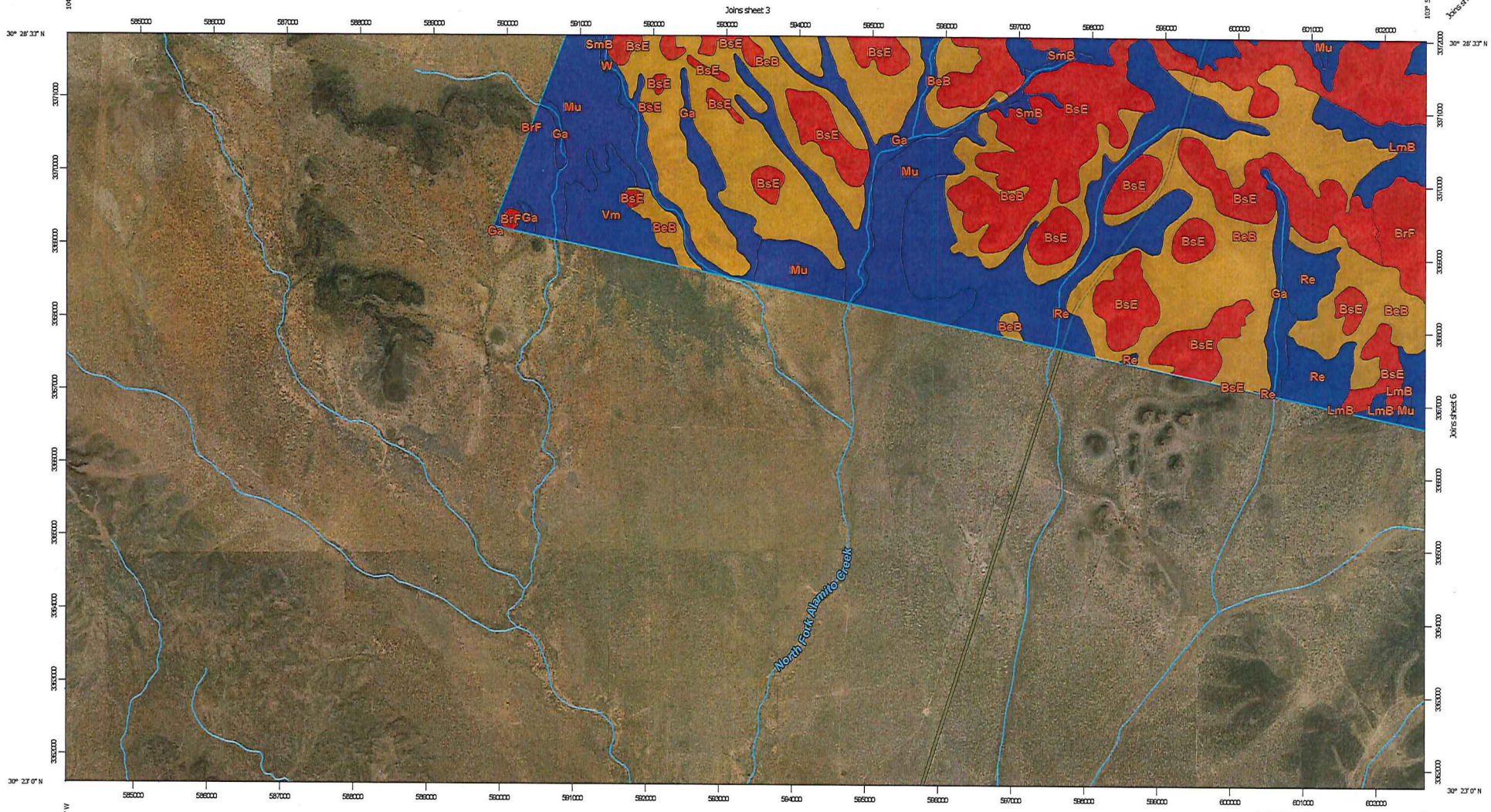
Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)
Map sheet 3 of 6



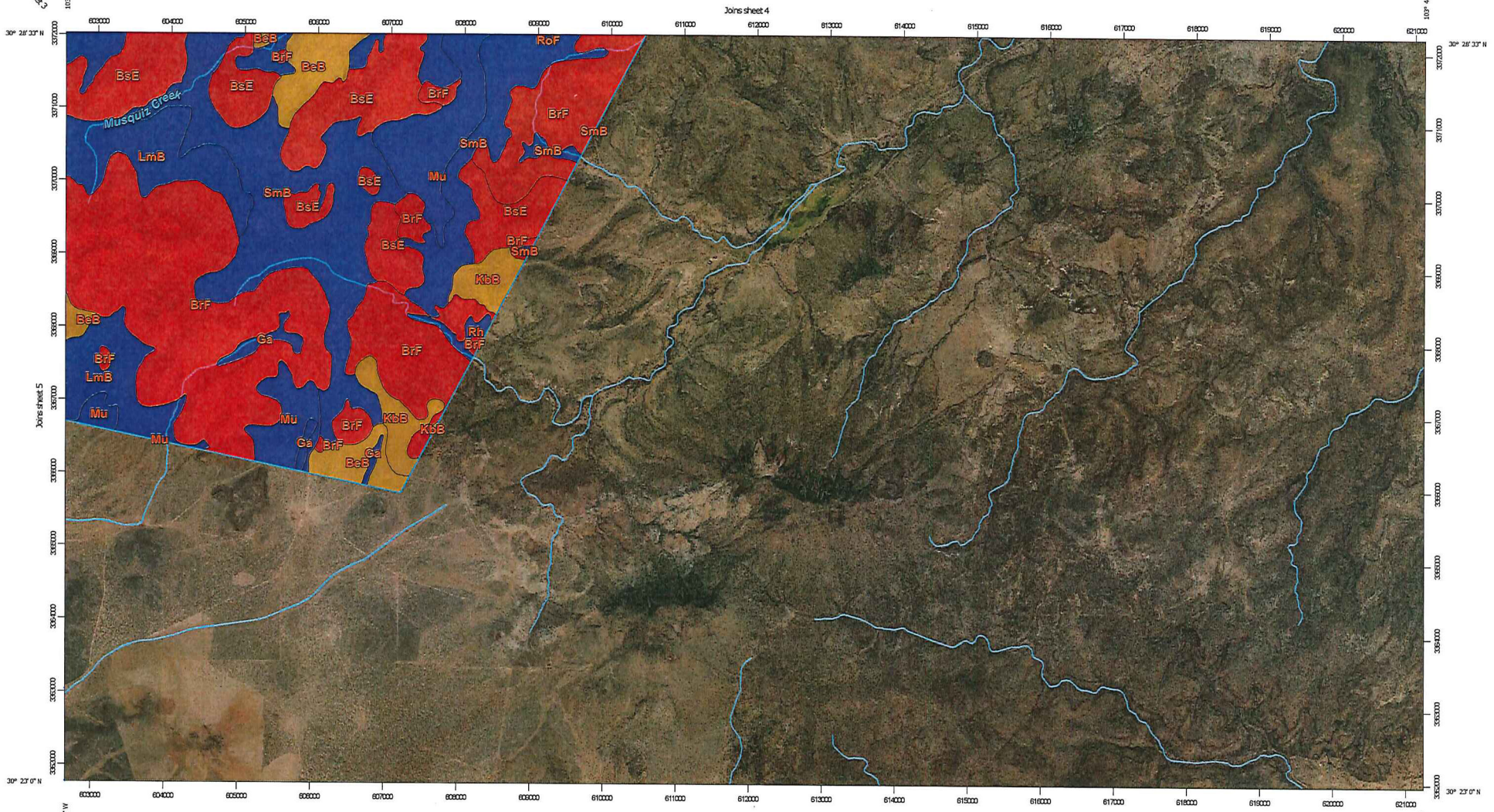
Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)
Map sheet 4 of 6



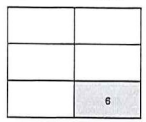
Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)
Map sheet 5 of 6



Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)
Map sheet 6 of 6



Map Scale: 1:50,000 if printed on B landscape (17" x 11") sheet.
Meters: 0 500 1000 2000 3000
Feet: 0 2000 4000 8000 12000
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



Map Sheet Location

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:31,700.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jeff Davis County, Texas
Survey Area Data: Version 18, Sep 14, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 3, 2015—Jun 12, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
BeB	Boracho-Espy complex, 1 to 8 percent slopes	30	10,628.8	12.3%
BrF	Brewster-Rock outcrop association, steep	18	6,825.3	7.9%
BsE	Brewster association, hilly	18	13,273.0	15.3%
Ga	Bigetty association	>200	3,657.3	4.2%
GP	Pits, gravel	>200	11.5	0.0%
KbB	Kokernot-Brewster association, gently sloping	46	277.5	0.3%
LmB	Limpia and Mitre soils, gently sloping	>200	1,148.3	1.3%
LrF	Liv-Mainstay-Rock outcrop association, steep	0	2,083.9	2.4%
MbE	Mainstay-Brewster association, hilly	>200	6,480.5	7.5%
Mu	Musquiz clay loam, 0 to 3 percent slopes	>200	26,313.0	30.4%
Re	Redona association	>200	1,944.1	2.2%
Rh	Rockhouse association	>200	46.0	0.1%
Rk	Rockhouse-Bigetty association	>200	922.1	1.1%
RoF	Rock outcrop-Brewster association, steep	0	2,886.7	3.3%
SmB	Sanmoss-Medley complex, 1 to 5 percent slopes	>200	9,476.5	11.0%
Ve	Verhalen clay	>200	240.3	0.3%
Vm	Verhalen-Dalby association	>200	294.1	0.3%
W	Water	>200	4.2	0.0%
Totals for Area of Interest			**86,513.2**	**100.0%**

Rating Options—Depth to Any Soil Restrictive Layer (Alamita Creek to Fort Davis 138-kV Transmission Line Project)

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

United States Department of Agriculture

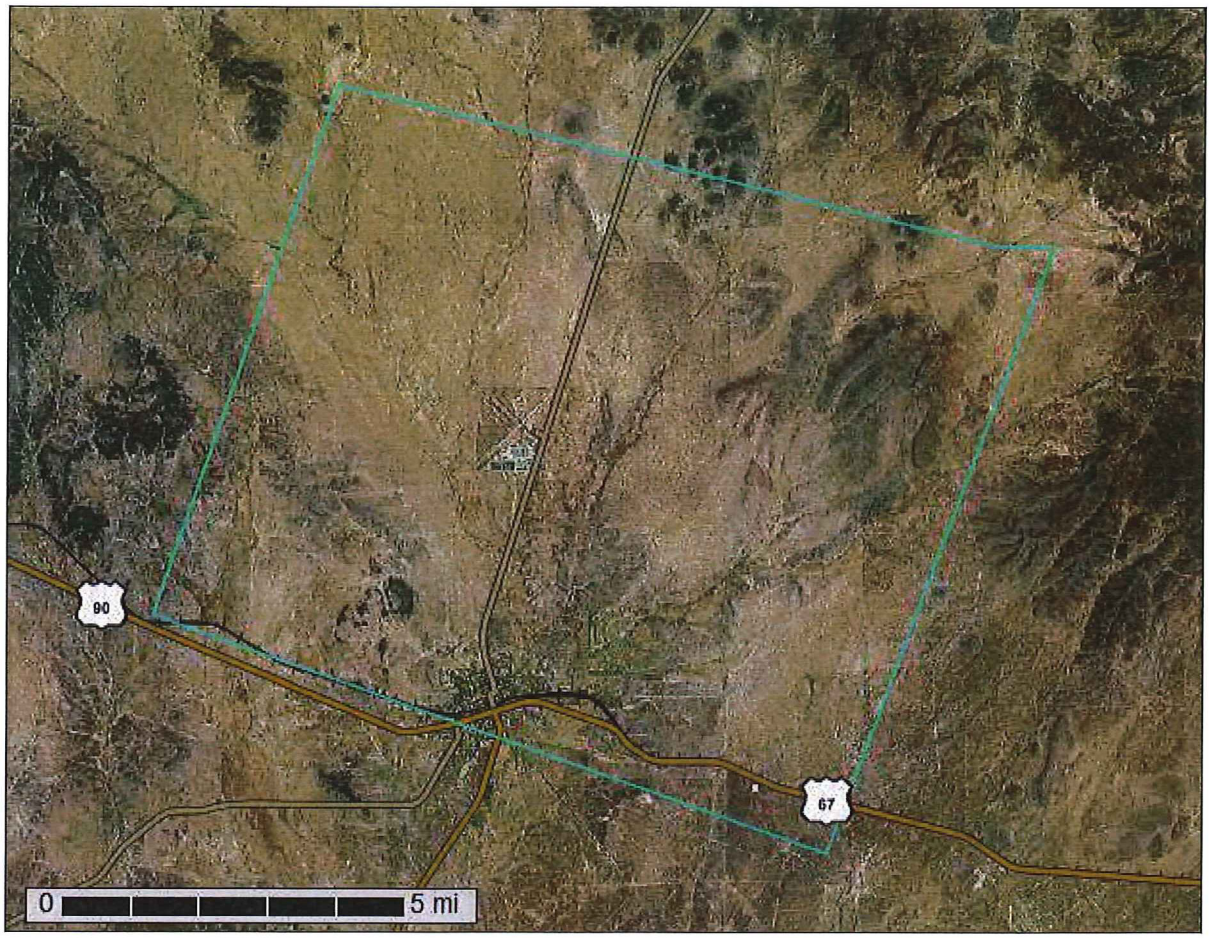
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Presidio County, Texas

Alamito Creek to Fort Davis 138kV Transmission Line Project



July 28, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

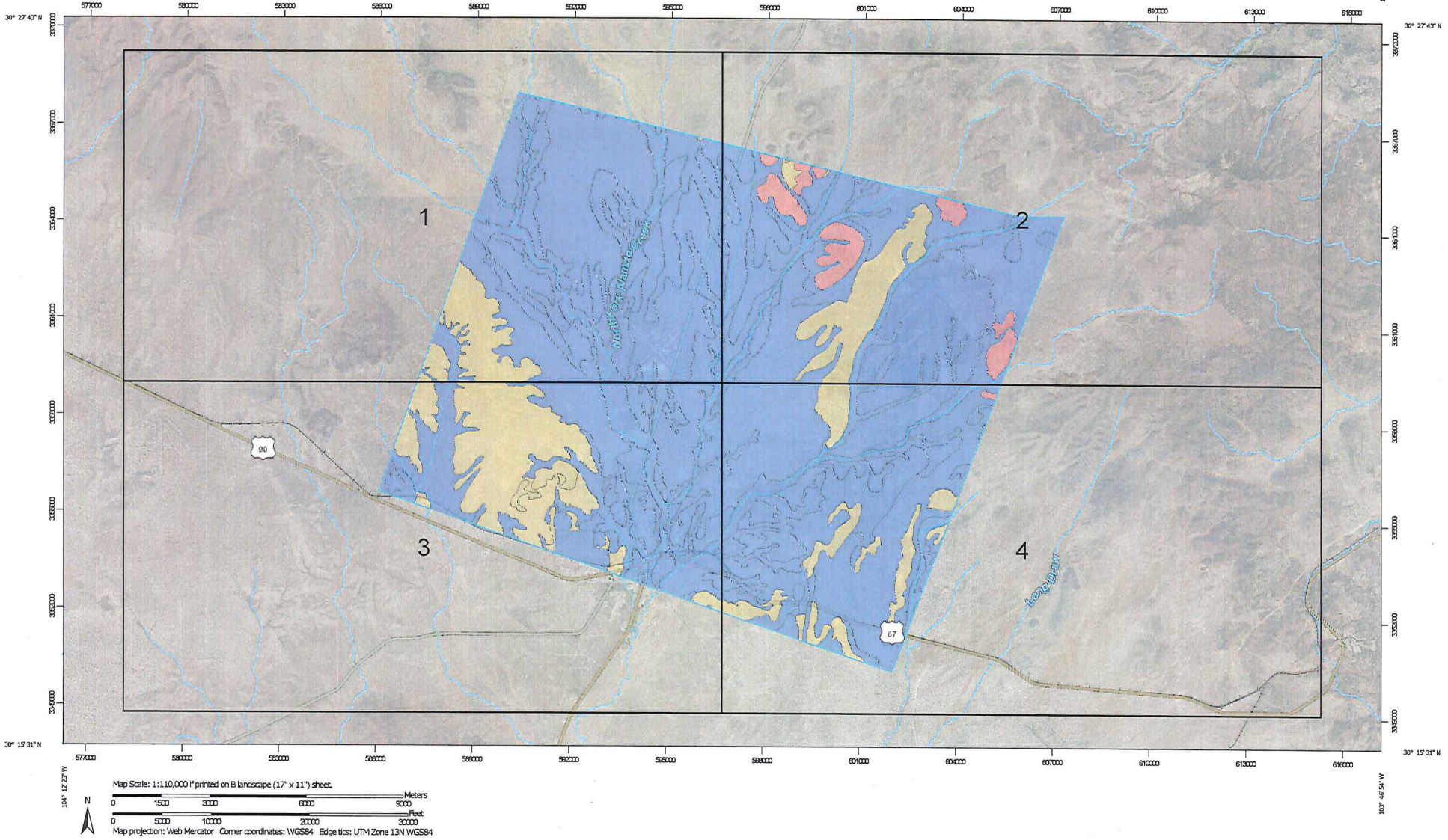
Depth to Any Soil Restrictive Layer (Alamito to Fort Davis 138kV Trnsmission Line Project)

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamito to Fort Davis 138kV Trnsmission Line Project)
Index Sheet



Map Scale: 1:110,000 if printed on B landscape (17" x 11") sheet.

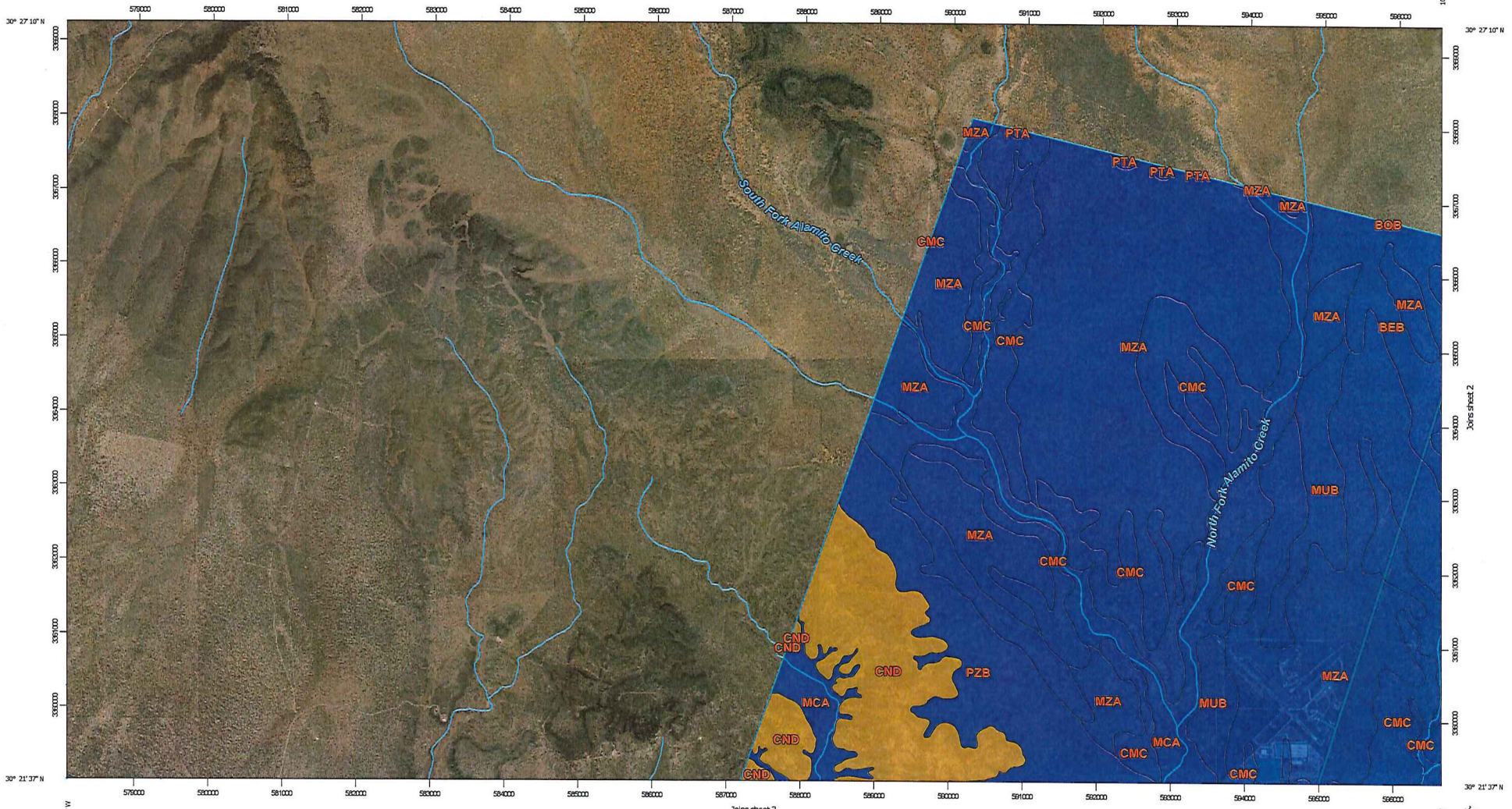
N

Meters: 0 1500 3000 6000 9000

Feet: 0 5000 10000 20000 30000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

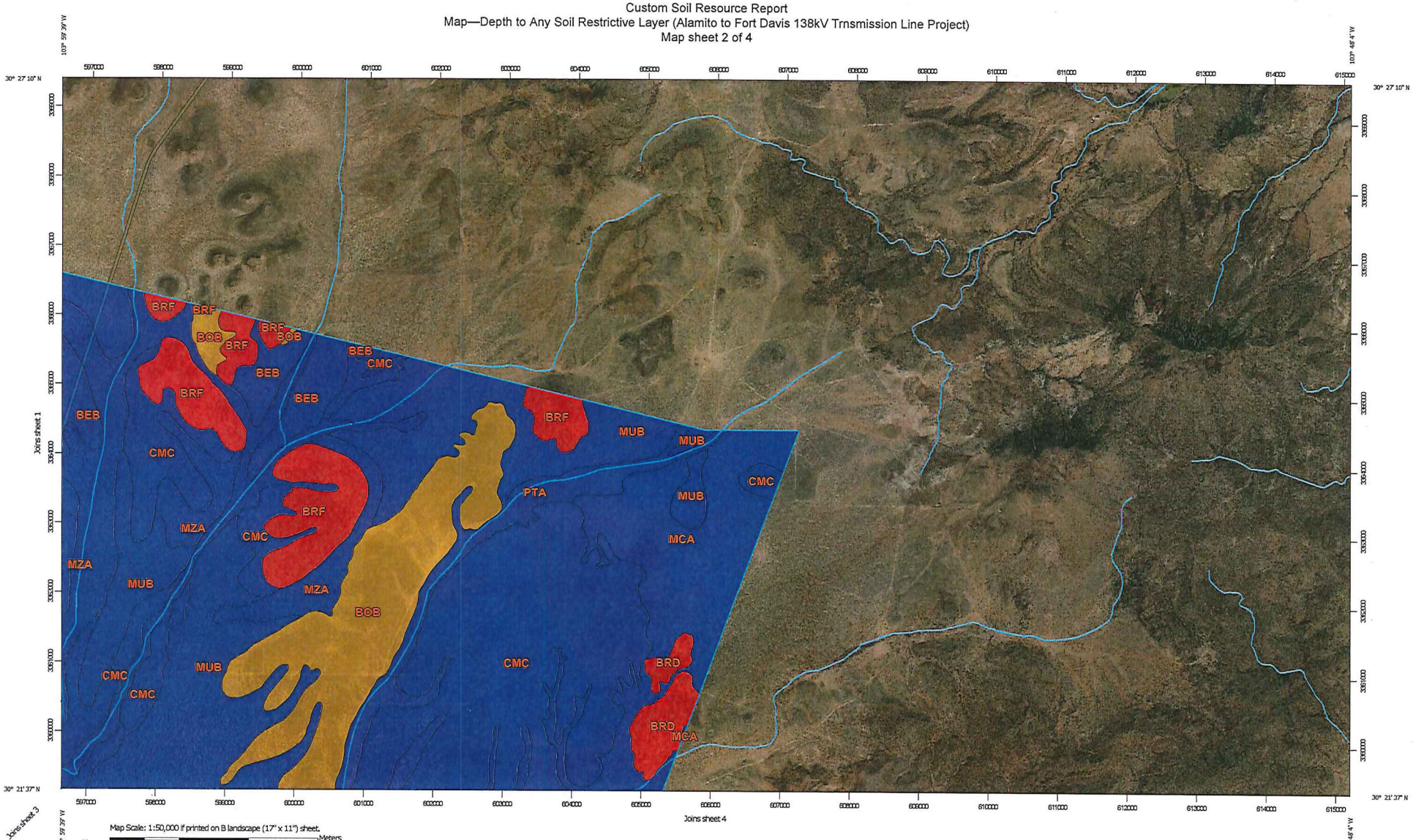
Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamito to Fort Davis 138kV Trnsmission Line Project)
Map sheet 1 of 4



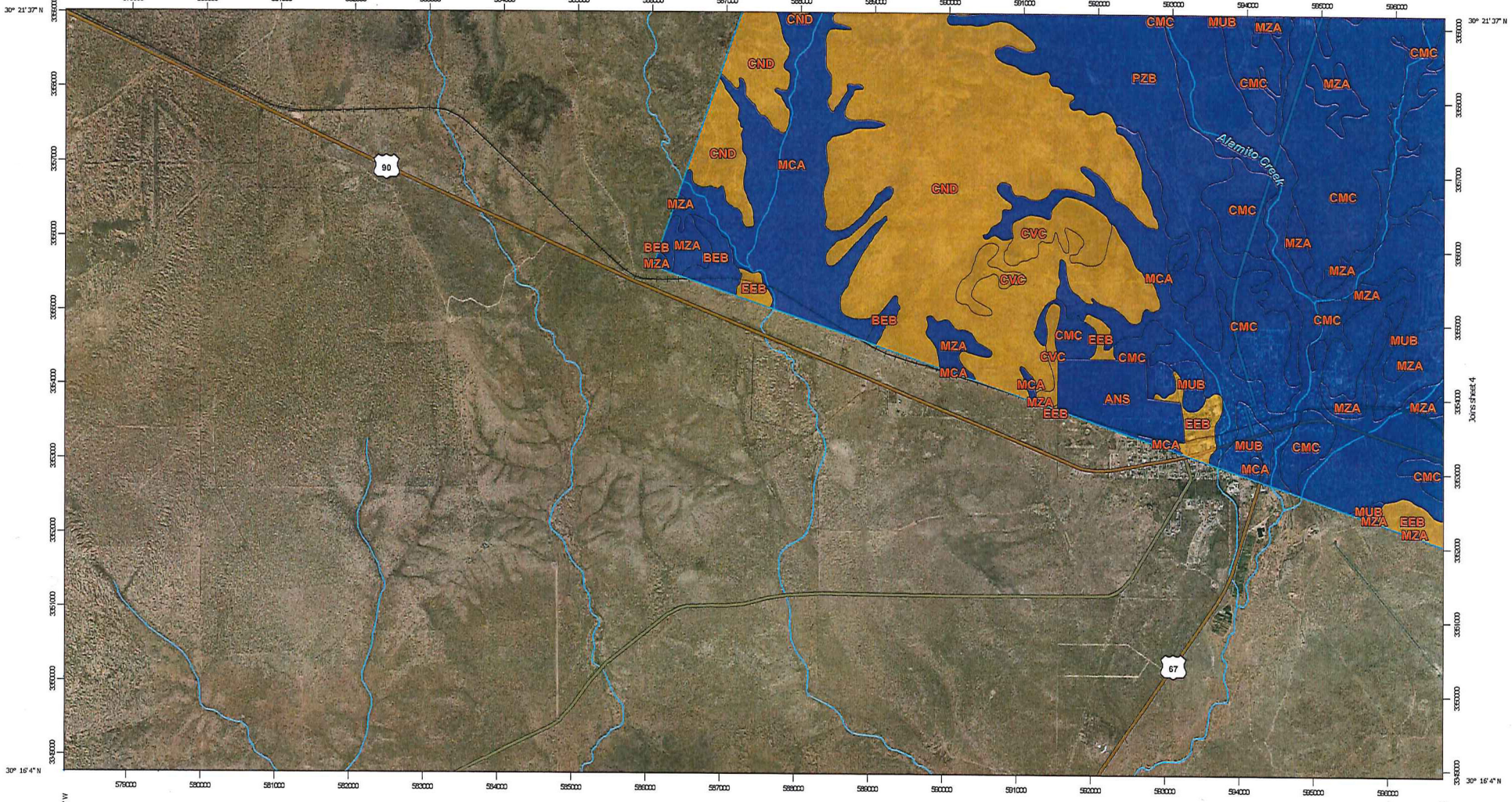
Map Scale: 1:50,000 if printed on B landscape (17" x 11") sheet.
Meters 0 500 1000 2000 3000
Feet 0 2000 4000 8000 12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

Map Sheet Location

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamito to Fort Davis 138kV Trnsmission Line Project)
Map sheet 2 of 4



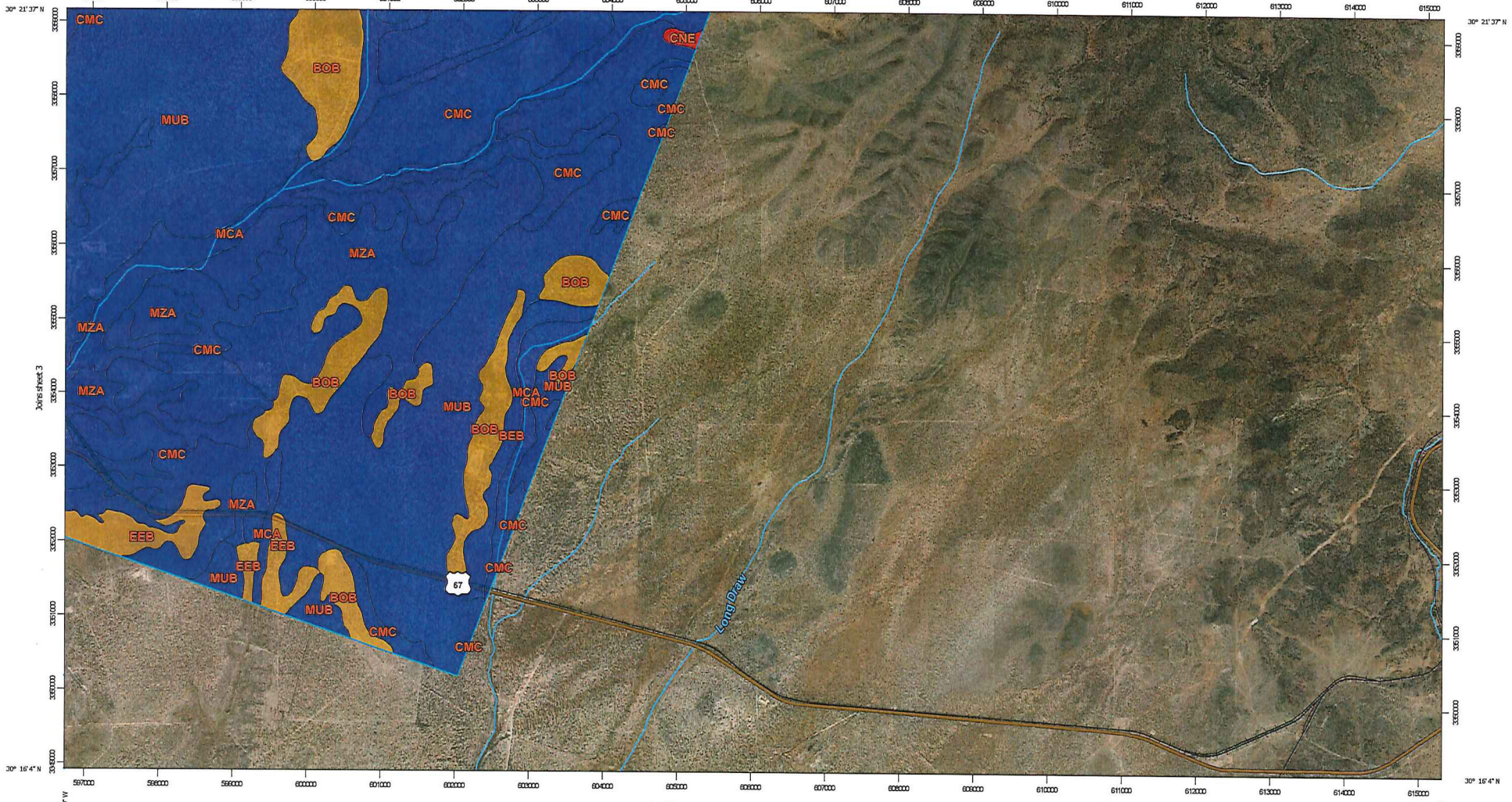
Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamito to Fort Davis 138kV Trnsmission Line Project)
Map sheet 3 of 4



Map Scale: 1:50,000 if printed on B landscape (17" x 11") sheet.
Meters: 0 500 1000 2000 3000
Feet: 0 2000 4000 8000 12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

Map Sheet Location

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Alamito to Fort Davis 138kV Trnsmission Line Project)
Map sheet 4 of 4



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:31,700.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Presidio County, Texas
Survey Area Data: Version 21, Sep 16, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 3, 2015—Jun 12, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer (Alamito to Fort Davis 138kV Trnsmission Line Project)

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
ANS	Area not surveyed, access denied	>200	327.4	0.6%
BEB	Berrend and Espy soils, 1 to 5 percent slopes	>200	1,817.9	3.1%
BOB	Boracho-Espy complex, 1 to 8 percent slopes	30	3,074.4	5.2%
BRD	Brewster very gravelly loam, 1 to 12 percent slopes	10	277.2	0.5%
BRF	Brewster-Rock outcrop complex, 10 to 30 percent slopes	11	1,064.1	1.8%
CMC	Chilimol-Boracho-Berrend complex, 1 to 8 percent slopes	>200	11,828.7	20.1%
CND	Chinati-Boracho-Berrend association, 1 to 15 percent slopes	30	5,356.0	9.1%
CNE	Chinati-Boracho complex, 5 to 20 percent slopes	22	23.2	0.0%
CVC	Costavar and Volco soils, 1 to 8 percent slopes	33	317.3	0.5%
EEB	Espy-Eppenauer complex, 1 to 5 percent slopes	40	618.5	1.0%
MCA	Marfa clay loam, 0 to 2 percent slopes, occasionally flooded	>200	11,089.0	18.8%
MUB	Murray-Marfa-Boracho association, 1 to 5 percent slopes	>200	9,957.3	16.9%
MZA	Musquiz clay loam, 0 to 3 percent slopes	>200	10,376.5	17.6%
PTA	Phantom clay loam, 0 to 2 percent slopes, occasionally flooded	>200	451.7	0.8%
PZB	Phantom-Musquiz complex, 1 to 5 percent slopes	>200	2,328.6	4.0%
Totals for Area of Interest			**58,907.6**	**100.0%**

Rating Options—Depth to Any Soil Restrictive Layer (Alamito to Fort Davis 138kV Trnsmission Line Project)

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
3500 DEFENSE PENTAGON
WASHINGTON, DC 20301-3500

SUSTAINMENT

August 7, 2019

Thomas Ademski
Project Manager, Environmental Services
Burns & McDonnell
8911 Capital of Texas Highway
Building 3, Suite 3100
Austin, TX 78759

Dear Mr. Ademski,

As requested, the Military Aviation and Installation Assurance Siting Clearinghouse coordinated within DoD an informal review of the Alamito Creek to Ft Davis 138 kV Transmission Line Project. The results of our review indicated that the transmission line project located in Presidio and Jeff Davis Counties, Texas, as proposed, will have minimal impact on military operations conducted in the area.

Please note that this informal review by the DoD Military Aviation and Installation Assurance Siting Clearinghouse does not constitute an action under 49 United States Code Section 44718 and that the DoD is not bound by the conclusion arrived at under this informal review. To expedite our review in the Obstruction Evaluation Airport Airspace Analysis (OE/AAA) process, please add the project number 2019-07-T-ERC-01 in the comments section of the filing. If you have any questions, please contact Mr. Steve Sample, Deputy Director of the Siting Clearinghouse, at steven.j.sample4.civ@mail.mil or at 703-571-0076.

Sincerely,

Ronald E. Tickle
Executive Director
Military Aviation and Installation
Assurance Siting Clearinghouse

United States Department of the Interior

NATIONAL PARK SERVICE
Fort Davis National Historic Site
P.O. Box 1379
Fort Davis, Texas 79734
Voice (432) 426-3224 ex. 220
FAX (432) 426-3122
www.nps.gov/foda

September 4, 2019

To: Thomas Ademski, tjademski@burnsmcd.com
Subject: Request for Information: AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project (Jeff Davis and Presidio Counties, Texas)

Dear Mr. Ademski:

Thank you for your letter dated July 3, 2019 and received July 9, 2019 regarding the American Electric Power Texas, Inc. and the proposed transmission line between the existing Alamito Creek Substation and Fort Davis Substation. As portions of Fort Davis National Historic Site (NHS), which is also a National Historic Landmark (NHL), are located adjacent to and within the proposed study area, the National Park Service appreciates your request for information at this early stage of the process.

Today, as evidenced in its designation as an NHS and NHL, Fort Davis is one of best remaining examples of a frontier military post and is a vivid reminder of the significant role played by the military in the settlement and development of the western frontier. The park protects 24 roofed buildings and more than 100 ruins and foundations, and Historic land uses, such as a cemetery, a garden, and trees from the period, are visible on the largely intact landscapes, both within and surrounding the historic site. The relatively undeveloped area surrounding the park, some of which is protected by Davis Mountains State Park, allows for intact viewsheds and dark night skies, which also contribute to the historic setting.

Fort Davis National Historic Site makes this valuable part of America's heritage available to thousands of visitors annually for their enjoyment, understanding, education, and appreciation. The components of the historic setting allow visitors to become immersed in a variety of events and experiences that occurred in the U.S. Southwest during the 19th century; these include the conflict between the United States and American Indians, the hardships of life on the western frontier, the life and service of soldiers in the U.S. military, including the black regulars, and civilian life in a military complex.

More specifically, approximately 55 acres in the farthest western section of the NHS, which was obtained in 2009, falls within the proposed study area. The property contains two known archaeological sites. One is a stone quarry that was used to supply the post with structural foundation material for buildings. The other is remnants of the telegraph system installed by the U.S. Army when the Fort was occupied.

We appreciate your interest in preserving our nation's historic resources and look forward to further partnership and consultation with your office. We would like to offer technical assistance and support as you develop the details of this project and any related environmental compliance documents. If you have any questions, or if we can be of further assistance at this time, please contact me at (432) 426-3224, ext. 221.

Sincerely,

David H. Larson

David H. Larson
Acting Superintendent, Fort Davis National Historic Site

TEXAS GENERAL LAND OFFICE
GEORGE P. BUSH, COMMISSIONER

July 11, 2019

Thomas J. Ademski
Burns McDonnell
8911 North Capital of Texas Highway, Building 3, Suite 3100
Austin, TX 78759-7285

Re: Request for Information
AEP Texas Alamito Creek to Fort Davis 138-kV Transmission Line Project
Jeff Davis and Presidio Counties, Texas

Dear Mr. Ademski:

On behalf of Commissioner Bush, I would like to thank you for your letter concerning the above-referenced project.

Using your map depicting the project's study area, it does not appear that the General Land Office will have any environmental issues or land use constraints at this time.

When a final route for this proposed project has been determined, please contact me and we can assess the route to determine if the project will cross any streambeds or Permanent School Fund (PSF) land that would require an easement from our agency.

In the interim, if you would like to speak to me further about this project, I can be reached by email at glenn.rosenbaum@glo.texas.gov or by phone at (512) 463-8180.

Again, thank you for your inquiry.

Sincerely,

Glenn Rosenbaum

Glenn Rosenbaum
Manager, Right-of-Way Department
Leasing Operations

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

July 19, 2019

Thomas J. Ademski, Project Manager
Burns & McDonnell
8911 North Capital of Texas Highway
Building 3, Suite 3100
Austin, TX 78759

Re: Proposed 138 kV Transmission Line Project
American Electric Power Texas, Inc (AEP Texas)
Alamito Creek to Fort Davis
Jeff Davis and Presidio Counties, Texas

Dear Mr. Ademski:

We received your letter dated July 8, 2014, requesting environmental and land use constraint information within the study area for the referenced proposed transmission line. Information is available on the Railroad Commission's Geographic Information System concerning existing oil and gas well and pipeline locations. You may access this information at http://www.rrc.state.tx.us/about-us/resource-center/research/gis-viewers/.

With respect to proposed development projects, for oil and gas drilling permits you may wish to contact Lorenzo Garza at Lorenzo.garza@rrc.texas.gov. For pipelines, you may wish to contact Stephanie Weidman at stephanie.weidman@rrc.texas.gov.

Sincerely,

Leslie Savage, P.G.
Chief Geologist
Oil & Gas Division
Railroad Commission of Texas

Cc: Stephanie Weidman, Pipeline Safety Department
Oversight and Safety Division
Lorenzo Garza, Manager of Drilling Permits
Oil and Gas Division

TEXAS HISTORICAL COMMISSION

real places telling real stories

July 19, 2019

Thomas J. Ademski
Project Manager
Burns & McDonnell
8911 North Capital of Texas Highway
Building 3, Suite 3100
Austin, TX 78759

Re: Request for Information: *AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project Jeff Davis and Presidio Counties, Texas. (THC Tracking No. 201910516)*

Dear Mr. Ademski:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed project from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Drew Sitters, has examined our records and identified multiple, previously recorded archeological sites (≥12) within, or in the immediate vicinity of (≥21; one mile radius), the proposed study area. Additionally, several (≥5) properties and districts listed on the National Register of Historic Places, as well as cemeteries (≥3), are present within the proposed study area. However, much of the area has never been surveyed by a professional archeologist and is likely to contain additional (pre)historic archeological sites. Moreover, there exists a high potential for undocumented archeological resources due to the numerous natural waterways, including Alamito, Chihuahua, Musquiz, and Cienega Creeks, crossing the study area.

Once a route is selected, the proposed **Alamito Creek to Ft. Davis 138-kV Transmission Line Project will need to be surveyed** by a professional archeologist prior to initiating any ground disturbance to demonstrate a good faith effort to identify historic properties that may be adversely affected by these activities, as defined in 36 CFR 800. We recommend consulting with a professional archeologist in the early stages of project planning to perform a records search and to identify high probability areas for archeological resources. By consulting with a professional archeologist, previously recorded archeological resources may be avoided. Please submit these results, recommend survey areas, and a scope of work to our office for concurrence.

The work should meet the minimum archeological survey standards posted on-line at www.thc.state.tx.us. A report of investigations should be produced in conformance with the Secretary of the Interior's Guidelines for Archaeology and Historic Preservation, and submitted to this office for review. In addition, any buildings 45 years old or older that are located within the Alamito Creek to Ft. Davis 138-kV Transmission Line Project should be documented with photographs and included in the report. You may obtain a list of archeologists in Texas on-line at: www.counciloftexasarcheologists.org or www.rpanet.org. Please note that other potentially qualified archeologists not included on these lists may be used.

If any of the work will be performed on public land or within a public easement your archeological principal investigator must obtain an Antiquities Permit from our office before any investigations are undertaken. An Antiquities Permit can be issued as soon as we have received a completed permit application.

Thank you for your cooperation in this federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning this review, please contact **Drew Sitters** at **(512) 463-6252** or **Drew.Sitters@THC.Texas.Gov.**

Sincerely,

for
Mark Wolfe, State Historic Preservation Officer
MW/ds

TEXAS PARKS & WILDLIFE

Life's better outside.®

Commissioners

Ralph H. Duggins
Chairman
Fort Worth

S. Reed Morian
Vice-Chairman
Houston

Arch "Beaver" Aplin, III
Lake Jackson

Oliver J. Bell
Cleveland

Anna B. Galo
Laredo

Jeanne W. Latimer
San Antonio

James H. Lee
Houston

Dick Scott
Wimberley

Kelcy L. Warren
Dallas

Lee M. Bass
Chairman-Emeritus
Fort Worth

T. Dan Friedkin
Chairman-Emeritus
Houston

Carter P. Smith
Executive Director

August 14, 2019

Mr. Thomas J. Ademski
Project Manager
Burns & McDonnell
8911 North Capital of Texas Highway, Bldg. 3 Ste. 3100
Austin, TX 78759

RE: American Electric Power Texas, Inc. Proposed Alamito Creek to Fort Davis 138-kilovolt Transmission Line Project; Jeff Davis and Presidio Counties, Texas

Dear Mr. Ademski:

Texas Parks and Wildlife Department (TPWD) received the preliminary information request regarding the above-referenced proposed transmission line project. TPWD staff has reviewed the information provided and offers the following comments concerning this project.

Please be aware that a written response to a TPWD recommendation or informational comment received by a state governmental agency may be required by state law. For further guidance, see the Texas Parks and Wildlife (TPW) Code, Section 12.0011. For tracking purposes, please refer to TPWD project number 42155 in any return correspondence regarding this project.

Project Description

American Electric Power Texas, Inc. (AEP Texas) will be filing an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to construct new electric transmission facilities in Jeff Davis and Presidio Counties. The proposed transmission facilities will include a new single circuit 138-kilovolt (kV) transmission line between the existing Alamito Creek Substation located in the northeastern portion of the City of Marfa, and the existing Fort Davis Substation located in the southern portion of the community of Fort Davis. The proposed transmission line will be approximately 20 miles in length and will require a 100-foot wide right-of-way (ROW).

Burns & McDonnell is preparing an Environmental Assessment (EA) and Alternative Routing Study for the proposed project that will support AEP Texas's CCN application with the PUC. Burns & McDonnell is in the process of collecting and evaluating information to identify environmental, cultural, and land use constraints that exist in the study area. Burns & McDonnell will consider and evaluate these constraints when developing and evaluating potential alternative routes between the project's endpoints.

Recommendation: TPWD recommends using existing facilities whenever possible. Where new construction is the only feasible option, TPWD recommends routing new transmission lines along existing roads, pipelines, transmission lines, or other utility ROW and easements to reduce habitat fragmentation. By utilizing previously disturbed, existing utility corridors, county roads, and highway ROW, adverse impacts to fish and wildlife resources would be mitigated by avoiding and/or minimizing the impacts to undisturbed habitats. Please see the attached *TPWD Recommendations for Electrical Transmission/Distribution Line Design and Construction.* Please review the recommendations and incorporate these measures into design and construction plans.

Conservation Easements

There is one conservation easement (known to TPWD) located within the study area (Marfa Plateau Grassland Megasite Easement managed by The Nature Conservancy). A conservation easement is a legal agreement between a landowner and a land trust or governmental agency that permanently limits uses of the land (including future fragmentation) to protect and conserve the land's natural values such as fertile soils, mature trees, and wildlife habitat. Lands with conservation easements protect existing wildlife habitat from future fragmentation and therefore have greater environmental integrity than comparable lands without conservation easements. Potential fragmentation of wildlife habitat from transmission line construction on properties where conservation agreements serve to protect the state's natural resources now and in the future is of concern to TPWD. TPWD notes that although there is one conservation easement known to TPWD within the study area, there still may be more conservation easements located within the study area. A managed areas map showing this conservation easement (as well as adjacent conservation easements) is attached for your reference.

Recommendation: TPWD recommends properties protected by conservation easements be identified in the constraints analysis and avoided during development of alternative routes. Data sources for the location of these properties include online databases such as the Protected Areas Data Portal and the National Conservation Easement Database, as well as available county records. If properties protected by conservation easements would be affected, TPWD recommends the length of routes through these properties be included in any accounting of alternative route impacts presented in the EA.

Managed Areas

The following publicly managed areas tracked by TPWD are present within the study area. A map showing these managed areas (as well as adjacent managed areas) is attached for your reference.

Davis Mountains State Park (TPWD)
Indian Lodge (TPWD)
Fort Davis National Historic Site (National Park Service)
Coffield Park (City of Marfa)

Chapter 26 of the TPW Code provides that a department, agency, political subdivision, county, or municipality of this state may not approve any program or project that requires the use or taking of public lands unless it holds a public hearing and determines that there is "no feasible and prudent alternative to the use or taking of such land", and the project "includes all reasonable planning to minimize harm to the land…resulting from the use or taking."

Lands owned by TPWD are not subject to the condemnation authority granted by Public Utility Regulatory Act (PURA). An easement required for a transmission line on TPWD property must be approved by the Texas Parks and Wildlife Commission after holding a public hearing as required by TPW Code Chapter 26. If TPWD Park Grant funds were used for any potentially impacted parks, then coordination with the Grants-In-Aid Branch of TPWD and local park administrators is necessary to prevent conversion of grant assisted lands to other than public outdoor recreation use – as prohibited by Section 6(f) of the Land and Water Conservation Act.

> **Recommendation:** TPWD recommends avoiding route placement in or near public recreation areas, in particular those owned or managed by TPWD. TPWD is concerned with the placement of transmission lines in close proximity to these sites and the potential for visual impacts to the view shed. Therefore, TPWD recommends considering route alternatives that avoid areas that are owned or managed by this agency.

Water Resources

Federal Law: Clean Water Act

Section 404 of the Clean Water Act establishes a federal program to regulate the discharge of dredged and fill material into the waters of the United States, including wetlands. The U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency are responsible for regulating water resources

under this act. Although the regulation of isolated wetlands has been removed from the USACE permitting process, both isolated and jurisdictional wetlands provide habitat for wildlife and help protect water quality.

As seen on the attached water resources map, there are several water crossings (including Cuevro Draw, Greenlee Draw, Fourmile Draw, Ponder Draw, South Fork Alamito Creek, North Fork Alamito Creek, Cienega Creek, North Fork, South Fork, and Middle Fork Cienega Creek, Musquiz Creek, and Chihuahua Creek) and wetlands located within the study area.

Recommendation: If the proposed project would impact waterways or associated wetlands, TPWD recommends consulting with the USACE for potential impacts to waters of the United States including jurisdictional determinations, delineations, and mitigation. All waterways and associated floodplains, riparian corridors, springs, and wetlands, regardless of their jurisdictional status, provide valuable wildlife habitat and should be protected to the maximum extent possible. Natural buffers contiguous to any wetlands or aquatic systems should remain undisturbed to preserve wildlife cover, food sources, and travel corridors. During construction, trucks and equipment should use existing bridge or culvert structures to cross creeks, and equipment staging areas should be located in previously disturbed areas outside of riparian corridors.

Destruction of inert microhabitats in waterways such as snags, brush piles, fallen logs, creek banks, pools, and gravel stream bottoms should be avoided, as these provide habitat for a variety of fish and wildlife species and their food sources. Erosion controls and sediment runoff control measures should be installed prior to construction and maintained until disturbed areas are permanently revegetated using site-specific native vegetation. Measures should be properly installed in order to effectively minimize the amount of sediment and other debris entering the waterway.

Migratory Birds

Federal Law: Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The U.S. Fish and Wildlife Service (USFWS) Migratory Bird Office can be contacted at (505) 248-7882 for more information on potential impacts to migratory birds.

As discussed above, several water features are located within the study area. Please note that birds typically establish flight corridors along and within river and creek drainages. There is potential for electrocution and collision of large-bodied waterfowl and avian predators with electrical wires near these water features.

Recommendation: TPWD recommends routing the transmission line to avoid crossing or disturbing water resources in the project area to the extent feasible. Lines that cross or are located near rivers, creeks, drainages, and wetlands should have line markers installed at the crossings or closest points to the drainages to reduce potential collisions by birds flying along or near the drainages.

For additional information, please see the guidelines published by the USFWS and the Avian Power Lines Interaction Committee (APLIC) in the updated guidance document *Reducing Avian Collisions with Power Lines: State of the Art in 2012*. This manual, released on December 20, 2012, identifies best practices and provides specific guidance to help electric utilities and cooperatives reduce bird collisions with power lines. A companion document, *Suggested Practices for Avian Protection on Power Lines*, was published by APLIC and the USFWS in 2006. For more information on both documents, please visit the APLIC website.

Recommendation: If migratory bird species are found nesting on or adjacent to the project area, they must be dealt with in a manner consistent with the MBTA. TPWD recommends excluding vegetation clearing activities during the general bird nesting season, March 15 through September 15, to avoid adverse impacts to breeding birds. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends surveying the area proposed for disturbance, as close to the date of construction as possible, to ensure that no nests with eggs or young will be disturbed by operations. TPWD recommends that a minimum 150-foot buffer of vegetation remain around any nests that are observed prior to disturbance. Any vegetation (such as trees, shrubs, and grasses) or other open areas where occupied nests are located should not be disturbed until the eggs have hatched and the young have fledged.

State-listed Species

State Law: Parks and Wildlife Code – Chapter 64, Birds

TPW Code Section 64.002, regarding protection of nongame birds, provides that no person may catch, kill, injure, pursue, or possess a bird that is not a game bird. TPW Code Section 64.003, regarding destroying nests or eggs, provides that, no

person may destroy or take the nests, eggs, or young and any wild game bird, wild bird, or wild fowl. TPW Code Chapter 64 does not allow for incidental take and therefore is more restrictive than the MBTA.

Recommendation: Please review the *Federal Law: Migratory Bird Treaty Act* section above for recommendations as they are also applicable for Chapter 64 of the TPW Code compliance.

State Law: Parks and Wildlife Code, Section 68.015

Section 68.015 of the Parks and Wildlife Code regulates state-listed species. Please note that there is no provision for the capture, trap, take, or kill (incidental or otherwise) of state-listed species. A copy of *TPWD Guidelines for Protection of State-Listed Species*, which includes a list of penalties for take of species, is attached for your reference. State-listed species may only be handled by persons with authorization obtained through TPWD. For more information, please contact the Wildlife Permits Office at (512) 389-4647.

Texas Natural Diversity Database (TXNDD) records within and just outside of the study area are shown on the attached TXNDD map for your reference.

Texas horned lizard (*Phrynosoma cornutum*)

The study area may provide suitable habitat for the state-listed Texas horned lizard. TPWD also notes that there are two Texas Natural Diversity Database (TXNDD) records for this species located within the study area. If present in the project area, the Texas horned lizard could be impacted by ground disturbing activities from construction. A useful indication that the Texas horned lizard may occupy the site is the presence of harvester ant (*Pogonomyrmex barbatus*) nests since harvester ants are the primary food source of Texas horned lizards. Texas horned lizards may hibernate on-site in loose soils a few inches below ground during the cool months from September/October to March/April. Construction in these areas could harm hibernating lizards. Horned lizards are active above ground when temperatures exceed 75 degrees Fahrenheit. If horned lizards (nesting, gravid females, newborn young, lethargic from cool temperatures or hibernation) cannot move away from noise and approaching construction equipment in time, they could be affected by construction activities.

Recommendation: TPWD recommends having a qualified biologist survey the PUC-selected route for any Texas horned lizards that may be in the area that is proposed for disturbance. As previously mentioned, a useful indication that the Texas horned lizard may occupy the site is the presence of harvester ant nests. The survey should be performed during the warm months of the year when the

horned lizards are active. If horned lizards are found on-site, TPWD recommends relocating them off-site to an area that is close-by and contains similar habitat. TPWD recommends that any translocations of reptiles be the minimum distance possible no greater than one mile, preferably within 100 to 200 yards from the initial encounter location. After horned lizard removal, the area that will be disturbed during active construction and project specific locations should be fenced off to exclude horned lizards and other reptiles.

The exclusion fence should be constructed and maintained as follows:

a. The exclusion fence should be constructed with metal flashing or drift fence material.
b. Rolled erosion control mesh material should not be used.
c. The exclusion fence should be buried at least 6 inches deep and be at least 24 inches high.
d. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated.
e. Any open trenches or excavation areas should be covered overnight and/or inspected every morning to ensure no Texas horned lizards or other wildlife have been trapped. For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Also, inspect excavation areas for trapped wildlife prior to refilling.

Recommendation: TPWD recommends a permitted biological monitor be present during clearing and construction activities to relocate any Texas horned lizards that may be encountered during construction. TPWD also recommends providing contractor training where feasible. Because the biological monitor cannot oversee all construction activity at the same time, it's important for the contractor to be able to identify protected species and to be on the lookout for them during construction. TPWD also recommends avoiding impacts to harvester ant mounds where feasible. TPWD understands that ant mounds in the direct path of construction would be difficult to avoid, but contractors should be mindful of these areas when deciding where to place project specific locations and other disturbances associated with construction. If the presence of a biological monitor during construction is not feasible, state-listed species observed during construction should be allowed to safely leave the site.

Trans-Pecos black-headed snake (*Tantilla cucullata*)

The study area may provide suitable habitat for the state-listed Trans-Pecos black-headed snake. TPWD also notes that there are two TXNDD records for this species

located within the study area. The state-listed Trans-Pecos black-headed snake can be found in steep-sided rocky canyons with pinyon pine, oak, and juniper; hilly grassland with juniper and cholla; streamside woodland with creosotebush, acacia, yucca, and grasses; and low hills of arid grassland with creosotebush, yucca, ocotillo, and agave. This secretive, fossorial snake is usually under cover, underground, or in crevices and may travel on the surface at night in summer when surface moisture is present.

Recommendation: Snakes are generally perceived as a threat and killed when encountered during clearing or construction. Therefore, TPWD recommends that personnel involved in clearing and construction be informed of the potential for the Trans-Pecos black-headed snake to occur in the project area. Personnel should be advised to avoid impacts to this snake as it is non-venomous and poses no threat to humans. TPWD recommends a permitted biological monitor be present during construction to try to relocate protected species if found (to an area that is preferably within 100 to 200 yards of the initial encounter location within similar habitat). If the presence of a permitted biological monitor during construction is not feasible, state-listed species observed during construction should be allowed to safely leave the site.

Species of Greatest Conservation Need

In addition to state- and federally-protected species, TPWD tracks Species of Greatest Conservation Need (SGCN) and other special features and natural communities that are not listed as threatened or endangered. These species and communities are tracked in the TXNDD, and TPWD actively promotes their conservation. TPWD considers it important to evaluate and, if necessary, minimize impacts to SGCNs and their habitat to reduce the likelihood of endangerment and preclude the need to list as threatened or endangered in the future.

There are TXNDD record(s) for the following plant SGCNs and rare vegetation communities located within the study area:

Warnock's coral-root (*Hexalectris warnockii*)

There is one TXNDD record for Warnock's coral-root located within the study area. This species is found in leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creek beds in canyons and flowers June through September.

Withered woolly loco (*Astragalus mollissimus var marcidus*)

There are three TXNDD records for withered woolly loco located within the study area. This plant SGCN is a Texas endemic and occurs in short to mid-grass

grasslands and occasionally shrublands on gravelly and sometimes clayey soils in basins, flats, and slopes at mid- to higher elevations among the mountains of the Trans-Pecos. This species flowers April through July.

Leafy rock-daisy (*Perityle rupestris ver. rupestris*)

There are three TXNDD records for leafy rock-daisy located within the study area. This species is found in igneous rock outcrops. Leafy rock-daisy is perennial and flowers May through November and fruits June through September.

Emory oak series (*Quercus emoryi*)

There is one TXNDD record for the Emory oak series (vegetation community) within the study area.

Cottonwood-willow series (*Populus* spp.-*Salix* spp.)

There is one TXNDD record for the cottonwood-willow series (vegetation community) within the study area.

New Mexico little bluestem series (*Schizachyrium scoparium var. neomexicanum*)

There is one TXNDD record for the New Mexico little bluestem series (vegetation community) within the study area.

Recommendation: TPWD recommends reviewing the TPWD Rare, Threatened, and Endangered Species of Texas by County online application (RTEST or TPWD county list) for Jeff Davis and Presidio Counties as plants, in addition to those listed above, may be present depending upon suitable habitat availability. TPWD recommends surveying the PUC-selected route for the above-listed species and vegetation communities (or any plant SGCNs that may be potentially impacted by the proposed project) where suitable habitat may be present, prior to construction. The survey should be performed by a qualified biologist at the time of year when the species is most likely to be found, usually during their respective flowering period. If any plant SGCNs or vegetation communities are present, plans should be made to avoid adverse impacts to the greatest extent possible. If plants are found within the proposed construction area, including in areas being considered for the placement of staging areas and other project related sites, this office should be contacted for further coordination and possible salvage of plants and/or seeds for seed banking. Plants not within the active construction area should be protected by markers or fencing and instructing construction crews to avoid any harm.

Mountain plover (*Charadrius montanus*)

There is one TXNDD record for the mountain plover located within the study area. Mountain plover breeding habitat consists of high plains or shortgrass prairie and non-breeding habitat consists of shortgrass plains and bare, dirt (plowed) fields.

> **Recommendation:** Please see recommendations in the *Federal Law: Migratory Bird Treaty Act* section of this letter, as those recommendations are applicable to the mountain plover as well.

Western burrowing owl (*Athene cunicularia hypugaea*)

TPWD notes that there are several eBird (www.ebird.org) observations for the western burrowing owl located within the study area. The western burrowing owl is a ground-dwelling owl that uses the burrows of prairie dogs and other fossorial animals for nesting and roosting. When natural burrows are limited, this species will breed in urban habitats which may lead to problems for the owls or their young. The owls opportunistically live and nest in road and railway ROWs, parking lots, baseball fields, school yards, golf courses, and airports. They have also been found nesting on campuses, in storm drains, drainage pipes, and cement culverts, on banks, along irrigation canals, under asphalt or wood debris piles, or openings under concrete pilings or asphalt. The western burrowing owl is protected under the MBTA, and take of these birds, their nests, and eggs is prohibited. Potential impacts to the western burrowing owl could include habitat removal as well as displacement and/or destruction of nests and eggs if ground disturbance occurs during the breeding season.

> **Recommendation:** TPWD recommends avoiding disturbance of mammal burrows or other suitable habitat during the construction of the proposed transmission line. As previously mentioned, TPWD recommends conducting project activities outside the breeding season (March 15 to September 15). Nesting areas and burrows should be protected from intensive disturbance during incubation. Excavation of an active nest burrow may destroy eggs, young owls, or even adults and is violation of the MBTA. If nesting owls are found inhabiting the project area, disturbance should be avoided until the eggs have hatched and the young have fledged.

Roundnose minnow *(Dionda episcopa)*

There is one TXNDD record for the roundnose minnow located within the study area. The roundnose minnow is found within the Pecos River system and inhabits spring-influenced headwater streams.

Recommendation: TPWD recommends taking measures to avoid impacts to aquatic and riparian habitats, which would help minimize impacts to the roundnose minnow. Waterways in the project area should be spanned, and care should be taken to avoid multiple crossings of creeks and rivers or installing lines parallel to waterways and therefore removing large sections of riparian habitat. River and creek crossings should be located in previously disturbed areas to avoid further fragmentation of the riparian corridors associated with these waterways. TPWD also recommends avoiding construction during the spawning period of this species if feasible. Avoiding construction during a species' spawning period may reduce the potential for adverse impacts to water quality and the habitat of these species.

Cave myotis bat (*Myotis velifer*)

There is one TXNDD record for the cave myotis bat located within the study area. This species is colonial and cave-dwelling, but also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned cliff swallow (*Hirundo pyrrhonota*) nests. Cave myotis bats roost in clusters of up to thousands of individuals and hibernate in limestone caves of the Edwards Plateau and gypsum caves of the Panhandle during winter. They are opportunistic insectivores.

Western yellow bat (*Lasiurus xanthinus*)

There is one TXNDD record for the western yellow bat located within the study area. This species forages over water both perennial and intermittent sources, found at low elevations (< 6,000 feet). The western yellow bat roosts in vegetation (yucca, hackberry, sycamore, cypress, and especially palm) and hibernates in palm.

Recommendation: TPWD recommends avoiding routing the proposed transmission line through areas that may contain suitable habitat for bats, such as caves, culverts, bridges, and vegetation that may be used as roosting habitat. If bats are found within the proposed project limits, TPWD recommends non-harmful exclusion devices be used to exclude bats from the structure prior to disturbance. If a maternity colony is present, exclusion activities should occur between September and May to avoid separating lactating females from nursing pups.

Western box turtle (*Terrapene ornata*)

There are three TXNDD records for the western box turtle located within the study area. The western box turtle occurs throughout Texas, typically in open habitats such as prairie grasslands, pastures, fields, sandhills, and open woodlands. Adults have a home-range size of approximately 6 to 14 acres. This species is active

spring through fall with courtship and mating occurring primarily in the spring. For shelter, they burrow into soil (e.g., under plants such as yucca) or enter burrows made by other species. Eggs are laid in nests dug in soft well-drained soil in open areas. Western box turtles are threatened by habitat loss and fragmentation, vehicle strikes on roads, and collection for the pet trade and food markets.

> **Recommendation:** TPWD recommends referring to the recommendations listed above for the Texas horned lizard as those recommendations are applicable to the western box turtle as well. TPWD recommends identifying locations of burrows within the areas proposed for disturbance and avoiding impacts to burrows if feasible. TPWD also recommends reducing the number of roads, both temporary and permanent, planned to be constructed for the proposed transmission line project. TPWD also recommends reducing speed limits in the project area to at least 15 mph to help prevent vehicle-induced mortality of this species.

Davis Mountains cottontail (*Sylvilagus floridanus robustus*)

There is one TXNDD record for the Davis Mountains cottontail located within the study area. This species is found in brushy pastures, brushy edges of cultivated fields, and well-drained streamsides. The Davis Mountains cottontail is active mostly at dusk and at night, where they may forage in a variety of habitats, including open pastures, meadows, or even lawns. This species rests during the daytime in thickets or in underground burrows and small culverts. They feed on grasses, forbs, twigs, and bark and are not sociable and seldom seen feeding together.

Yellow-nosed cotton rat (*Sigmodon ochrognathus*)

There is one TXNDD record for the yellow-nosed cotton rat located within the study area. The yellow-nosed cotton rat is found at higher elevations in the Chisos Mountains, Davis Mountains, and Sierra Vieja. This species inhabits rocky slopes with scattered bunches of grass. They have underground dens and aboveground nests in various locations, including at the base of agaves or roots of junipers. They are active in the daytime.

Hooded skunk (*Mephitis macroura*)

There is one TXNDD record for the hooded skunk located within the study area. The hooded skunk is found in grasslands, deserts, and in the foothills of mountains, avoiding high elevations. This species tends to live near a water source, such as a river.

Western hog-nosed skunk (*Conepatus leuconotus*)

There is one TXNDD record for the western hog-nosed skunk located within the study area. The western hog-nosed skunk inhabits a wide variety of habitats within its range, including woodlands, grasslands, deserts, brushy areas, and rocky canyons in mountainous regions. Dens are in rock crevices, hollow logs, underground burrows, caves, mine shafts, woodrat houses, or under buildings.

Western spotted skunk *(Spilogale gracilis)*

There is one TXNDD record for the western spotted skunk located within the study area. The western spotted skunk can be found in open fields, prairies, croplands, fence rows, forest edges, and woodlands.

Recommendation: If during construction the project area is found to contain the mammal SGCNs listed above, TPWD recommends that precautions be taken to avoid impacts to them and their dens.

Evaluation of Species in the Environmental Assessment

TPWD notes that the species mentioned in this letter were discussed due to the presence of known occurrences within the study area. For the sake of brevity, not every species listed on the TPWD county list for Jeff Davis and Presidio Counties was evaluated to determine if suitable habitat is present within the study area. It is the responsibility of the project proponent to evaluate all of the species listed on the TPWD county list (not just state- and federally-listed species) and to determine if those species have habitat within the study area and if those species have the potential to be impacted by the construction of the proposed project. The presence of known occurrences of species in the study area does not provide a definitive statement as to the presence or absence of these species within the study area and cannot be substituted for field surveys.

Recommendation: Please review the TPWD county list for Jeff Davis and Presidio Counties because species in addition to those discussed in this letter could be present within the project area depending upon habitat availability. Please note that the TPWD county list was majorly updated in April 2019. Please review the updated county list for this project and all projects moving forward. TPWD strongly recommends including a discussion and evaluation of potential impacts to SGCNs (in addition to state-listed and federally-listed species) in the EA and Alternative Routing Study for this project. The USFWS should be contacted for species occurrence data, guidance, permitting, survey protocols, and mitigation for federally-listed species.

Determining the actual presence of a species in a given area depends on many variables including daily and seasonal activity cycles, environmental activity cues, preferred habitat, transiency and population density (both wildlife and human). The absence of a species can be demonstrated only with great difficulty and then only with repeated negative observations, considering all the variable factors contributing to the lack of detectable presence. If encountered during construction, measures should be taken to avoid impacting all wildlife, regardless of listing status.

Vegetation

Based on a review of the Ecological Mapping Systems of Texas (also known as the Texas Ecological Systems Classification Project), the following ecological systems are found within the study area:

- Barren
- Native Invasive: Catclaw Shrubland
- Native Invasive: Mesquite – Creosotebush Shrubland
- Native Invasive: Mesquite Shrubland
- Open Water
- Southwest: Tobosa - Mesquite Grassland
- Southwest: Tobosa Grassland
- Trans-Pecos: Cliff and Outcrop
- Trans-Pecos: Deciduous Chaparral
- Trans-Pecos: Desert Volcanic Rockland
- Trans-Pecos: Desert Wash Evergreen Shrubland
- Trans-Pecos: Gray Oak Savanna and Woodland
- Trans-Pecos: Hill and Foothill Grassland
- Trans-Pecos: Juniper Savanna and Woodland
- Trans-Pecos: Loamy Plains Grassland
- Trans-Pecos: Lower Montane Riparian Grassland
- Trans-Pecos: Lower Montane Riparian Shrubland
- Trans-Pecos: Lower Montane Riparian Woodland
- Trans-Pecos: Mixed Desert Shrubland
- Trans-Pecos: Mixed Oak Savanna and Woodland
- Trans-Pecos: Montane Mesic and Canyon Evergreen Shrubland
- Trans-Pecos: Montane Mesic and Canyon Hardwood-Pine-Juniper Forest
- Trans-Pecos: Montane Mesic and Canyon Hardwood Forest
- Trans-Pecos: Montane Mesic and Canyon Pine-Juniper Forest
- Trans-Pecos: Montane Mesic and Canyon Shrubland

- Trans-Pecos: Mountain Grassland
- Trans-Pecos: Pinyon-Juniper-Oak Woodland
- Trans-Pecos: Pinyon-Juniper Shrubland
- Trans-Pecos: Pinyon-Juniper Woodland
- Trans-Pecos: Ponderosa/Arizona Pine Woodland
- Trans-Pecos: Riparian Shrubland
- Trans-Pecos: Riparian Woodland
- Trans-Pecos: Shallow Plains Grassland
- Trans-Pecos: Succulent Desert Scrub
- Urban High Intensity
- Urban Low Intensity

A map of the ecological systems in the study area is attached for your reference. Additional information about the Ecological Mapping Systems of Texas, including a link to download digital data, can be found at on the TPWD GIS Gallery website.

Recommendation: TPWD recommends minimizing impacts to native vegetation to the extent feasible during project design and construction. Unavoidable loss of native vegetation should be mitigated by revegetating areas disturbed by project activities with site-specific native species. A list of native plant species suitable for use in the project area can be developed to fit your specific site needs using the Lady Bird Johnson Wildflower Center Native Plant Database.

Texas Natural Diversity Database

The TXNDD is intended to assist users in avoiding harm to rare species or significant ecological features. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Absence of information in the database does not imply that a species is absent from that area. Although it is based on the best data available to TPWD regarding rare species, the data from the TXNDD do not provide a definitive statement as to the presence, absence or condition of special species, natural communities, or other significant features within your project area. These data are not inclusive and **cannot be used as presence/absence data**. They represent species that could potentially be in your project area. This information cannot be substituted for field surveys. The TXNDD is updated continuously based on new, updated and undigitized records; therefore, TPWD recommends requesting the most recent TXNDD data on a regular basis. For questions regarding a record or to request the most recent data, please contact TexasNatural.DiversityDatabase@tpwd.texas.gov.

Recommendation: To aid in the scientific knowledge of a species' status and current range, TPWD encourages project proponents and their contractors report all encounters of SGCN, state-listed, and federally-listed species to the TXNDD according to the data submittal instructions found on the Texas Natural Diversity Database website.

I appreciate the opportunity to provide preliminary input on potential impacts related to this project, and I look forward to reviewing the EA and Alternative Routing Study. Please contact me at (512) 389-8054 or Jessica.Schmerler@tpwd.texas.gov if you have any questions.

Sincerely,

Jessica E. Schmerler
Wildlife Habitat Assessment Program
Wildlife Division

JES:42155

Attachments (6)

cc: Ms. Karen Hubbard, PUC (w/out attachments)

TPWD Recommendations for Electrical Transmission/Distribution Line Design and Construction

Construction of the line should be performed to avoid adverse impacts not only to the environment but the local bird populations and to restore or enhance environmental quality to the greatest extent practical. In order to minimize the possible project effects upon wildlife, the following measures are recommended.

TPWD recommends that each electrical company develop an Avian Protection Plan to minimize the risks to avian species that are protected by the Migratory Bird Treaty Act.

Avian Electrocution Risks

Birds can be electrocuted by simultaneously contacting energized and/or grounded structures, conductors, hardware, or equipment. Electrocutions may occur because of a combination of biological and electrical design. Biological factors are those that influence avian use of poles, such as habitat, prey and avian species. The electrical design factor is most crucial to avian electrocutions is the physical separation between energized and/or grounded structures, conductors, hardware, or equipment that can be bridges by birds to complete a circuit. As a general rule, electrocution can occur on structures with the following:

- Phase conductors separated by less than the wrist-to-wrist or head-to-foot (flesh-to-flesh) distance of a bird;
- Distance between grounded hardware (e.g. grounded wires, metal braces) and any energized phase conductor that is less than the wrist-to-wrist or head-to-foot (flesh-to-flesh) distance of a bird (Avian Power Line Interaction Committee 2006).

To protect raptors and eagles, procedures should be followed as outlined in:

Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006. by Avian Power Line Interaction Committee (APLIC). 2006. Distributed by the Avian Power Line Interaction Committee (APLIC).

Mitigating Bird Collisions with Power Lines: the State of the Art in 1994.
Avian Power Line Interaction Committee (APLIC). 1994. Edison Electric Institute. Washington D.C.

Line alterations to prevent bird electrocutions should not necessarily be implemented after such events occur, as all electrocutions may not be known or documented. Incorporation of preventative measures along portions of the routes that are most attractive to birds (as indicated by frequent sightings) prior to any electrocutions is much preferred.

Preventative measures include: phase covers, bushing cover, arrester covers, cutout covers, jumper wire hoses, and covered conductors. In addition, perch discouragers may be used to deter birds from landing on hazardous (to birds) pole locations where isolate, covers, or other insulating techniques cannot be used (Avian Power Line Interaction Committee 2006).

Use wood or non-conducting cross arms, for distribution lines, to minimize the possibility of electrical contact with perching birds.

When possible, for distribution lines, install electrical equipment on the bottom cross arm to allow top cross arm for perching.

TPWD recommends using nest management strategies which include installing nesting platforms on or near power structures to provide nesting sites for several protected species while minimizing the risks of electrocution, equipment damage, or outages (Avian Power Line Interaction Committee 2006).

Avian Collision Risks

Birds typically establish flight corridors along and within river and creek drainages. Transmission lines that cross or are located very near these drainages should have line markers installed at the crossings or closest points to the drainages to reduce the potential of collisions by birds flying along or near the drainage corridors.

If transmission lines are located in an area with tall trees, the height of the transmission line should not be taller than the trees to reduce collision risks.

Transmission lines should be located to avoid separating feeding and nesting areas. If this cannot be avoided lines should be clearly marked to minimize avian collisions with the lines (Avian Power Line Interaction Committee 1994).

Transmission lines should be buried, when practical, to reduce the risks of avian collisions.

Habitat Impacts

Construction should avoid identified wetland areas. Coordination with appropriate agencies should be accomplished to ensure regulatory compliance. Construction should occur during dry periods.

Construction should attempt to minimize the amount of flora and fauna disturbed. Reclamation of construction sites should emphasize replanting with native grasses and leguminous forbs.

Existing rights-of-way should be used to upgrade facilities, where possible, in order to avoid additional clearing and prevent adverse impacts associated with habitat loss and fragmentation of existing blocks of wooded habitat.

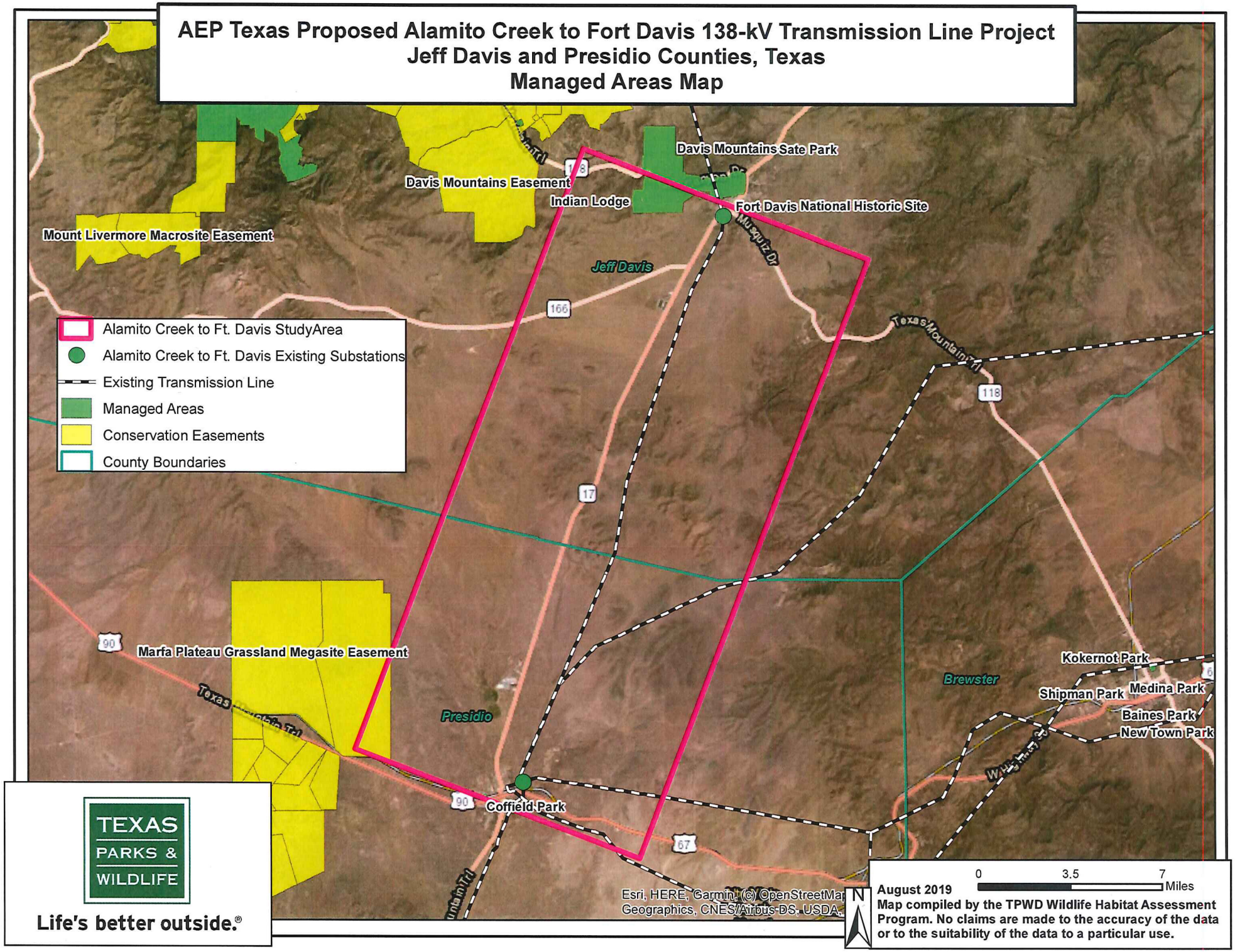
Forest and woody areas provide food and cover for wildlife, these cover types should be preserved. Mature trees, particularly those which produce nuts or acorns, should be retained. Shrubs and trees should be trimmed rather than cleared.

Transmission lines should be designed to cross streams at right angles, at points of narrowest width, and/or at the lowest banks whenever feasible to provide the least disturbance to stream corridor habitat.

Implementation of wildlife management plans along rights-of-way should be considered whenever feasible.

All pole design should be single phase (without arms), where possible, to preserve the aesthetics of the area.

AEP Texas Proposed Alamito Creek to Fort Davis 138-kV Transmission Line Project
Jeff Davis and Presidio Counties, Texas
Managed Areas Map



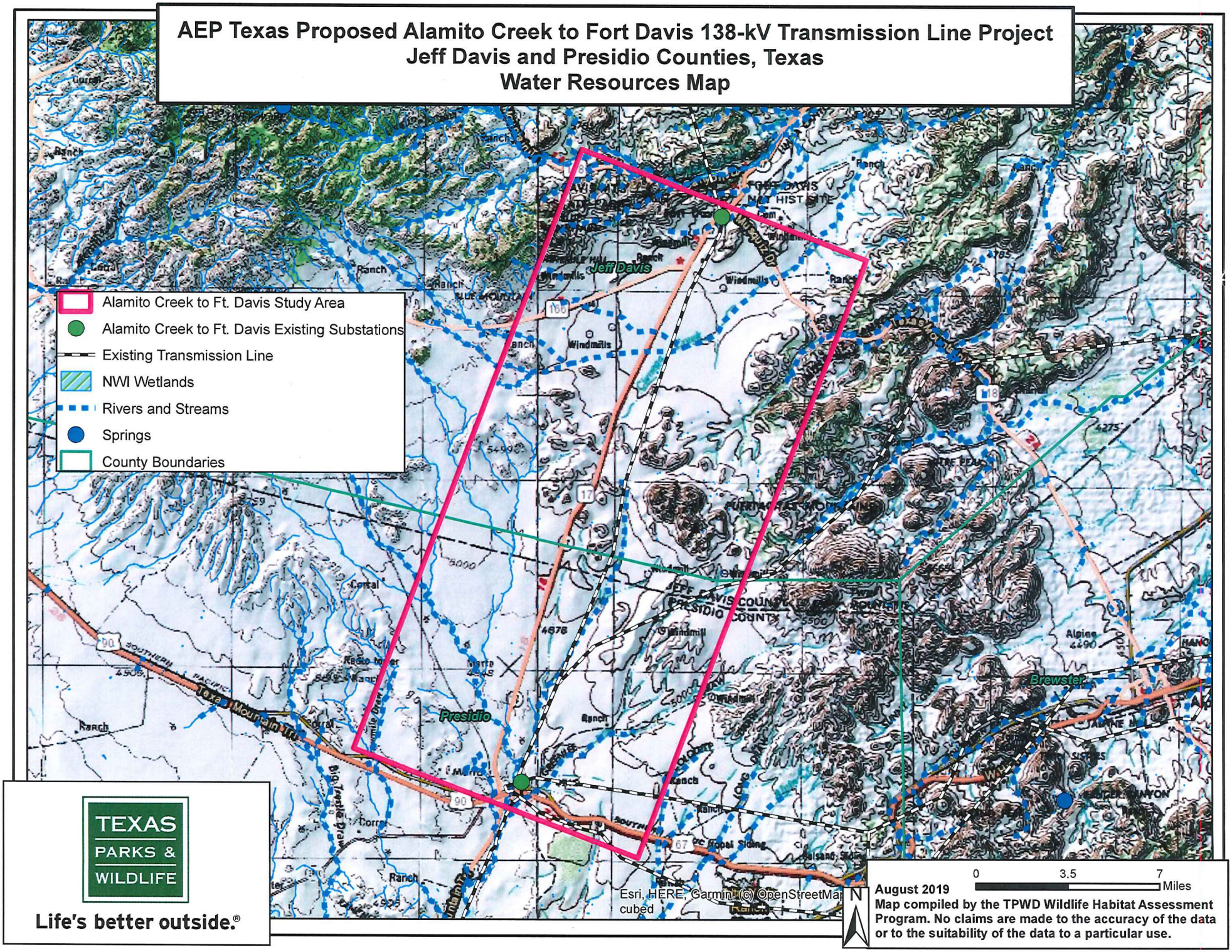
TEXAS PARKS & WILDLIFE

Life's better outside.®

August 2019

Map compiled by the TPWD Wildlife Habitat Assessment Program. No claims are made to the accuracy of the data or to the suitability of the data to a particular use.

AEP Texas Proposed Alamito Creek to Fort Davis 138-kV Transmission Line Project
Jeff Davis and Presidio Counties, Texas
Water Resources Map



TEXAS PARKS & WILDLIFE

Life's better outside.®

August 2019

Map compiled by the TPWD Wildlife Habitat Assessment Program. No claims are made to the accuracy of the data or to the suitability of the data to a particular use.

Protection of State-Listed Species
Texas Parks and Wildlife Department Guidelines

Protection of State-Listed Species

State law prohibits any take (incidental or otherwise) of state-listed species. State-listed species may only be handled by persons possessing a **Scientific Collecting Permit** or a **Letter of Authorization** issued to relocate a species.

- **Section 68.002 of the Texas Parks and Wildlife (TPW) Code** states that species of fish or wildlife indigenous to Texas are endangered if listed on the United States List of Endangered Native Fish and Wildlife or the list of fish or wildlife threatened with statewide extinction as filed by the director of Texas Park and Wildlife Department. Species listed as Endangered or Threatened by the Endangered Species Act are protected by both Federal and State Law. The State of Texas also lists and protects additional species considered to be threatened with extinction within Texas.

- **Animals -** Laws and regulations pertaining to state-listed endangered or threatened animal species are contained in **Chapters 67 and 68 of the Texas Parks and Wildlife (TPW) Code** and **Sections 65.171 - 65.176 of Title 31 of the Texas Administrative Code (TAC).** State-listed animals may be found at **31 TAC §65.175 & 176.**

- **Plants** - Laws and regulations pertaining to endangered or threatened plant species are contained in **Chapter 88 of the TPW Code and Sections 69.01 - 69.9 of the TAC**. State-listed plants may be found at **31 TAC §69.8(a) & (b).**

Prohibitions on Take of State Listed Species

Section 68.015 of the TPW Code states that no person may capture, trap, take, or kill, or attempt to capture, trap, take, or kill, endangered fish or wildlife.

Section 65.171 of the Texas Administrative Code states that except as otherwise provided in this subchapter or **Parks and Wildlife Code, Chapters 67 or 68**, no person may take, possess, propagate, transport, export, sell or offer for sale, or ship any species of fish or wildlife listed by the department as endangered or threatened.

"Take" is defined in **Section 1.101(5) of the Texas Parks and Wildlife Code** as:

> *"Take," except as otherwise provided by this code, means collect, hook, hunt, net, shoot, or snare, by any means or device, and includes an attempt to take or to pursue in order to take.*

Penalties

The penalties for take of state-listed species (**TPW Code, Chapter 67 or 68**) are:

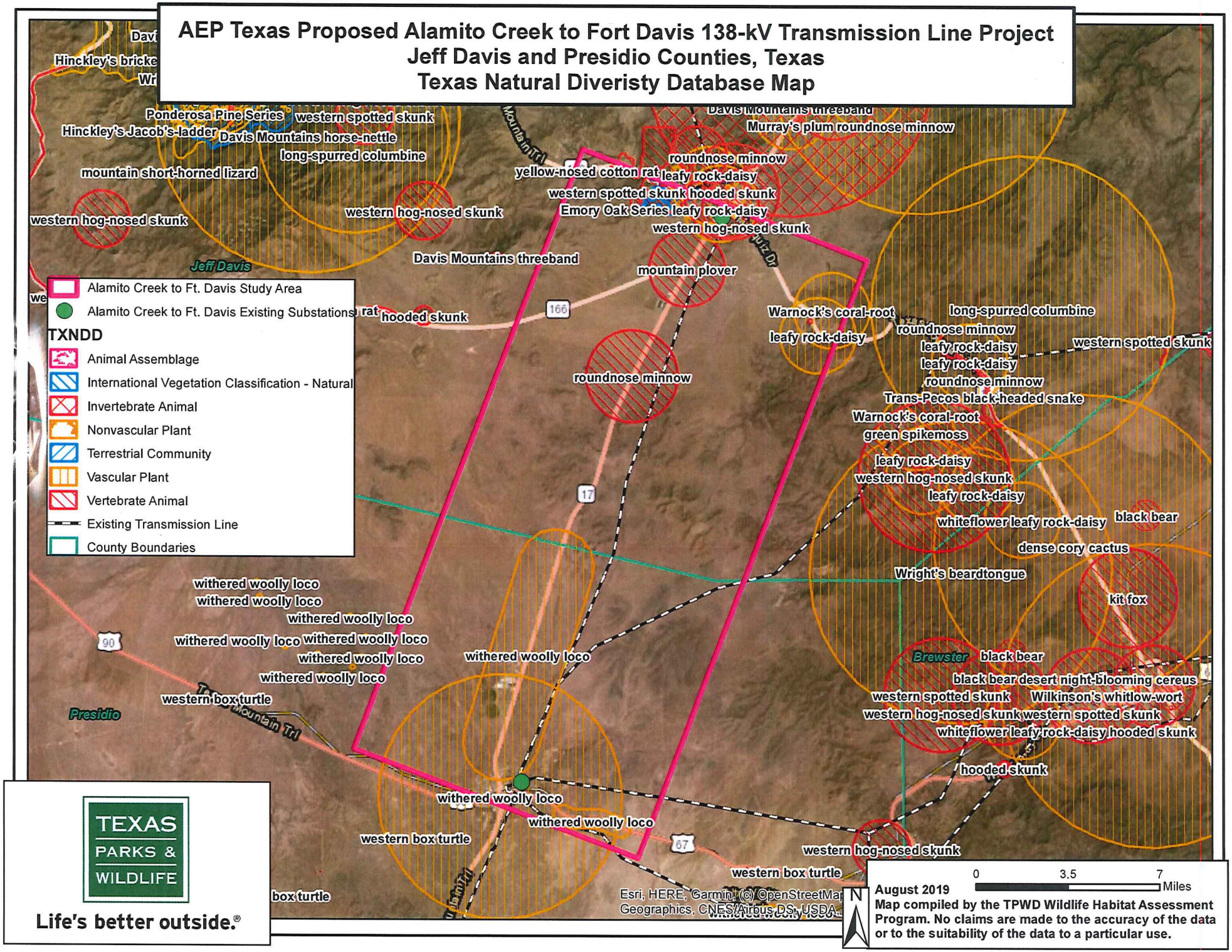
- 1ST Offense = Class C Misdemeanor:
  $25-$500 fine

- One or more prior convictions = Class B Misdemeanor
  $200-$2,000 fine and/or up to 180 days in jail.

- Two or more prior convictions = Class A Misdemeanor
  $500-$4,000 fine and/or up to 1 year in jail.

Restitution values apply and vary by species. Specific values and a list of species may be obtained from the TPWD Wildlife Habitat Assessment Program.

AEP Texas Proposed Alamito Creek to Fort Davis 138-kV Transmission Line Project
Jeff Davis and Presidio Counties, Texas
Texas Natural Diveristy Database Map



TEXAS PARKS & WILDLIFE

Life's better outside.®

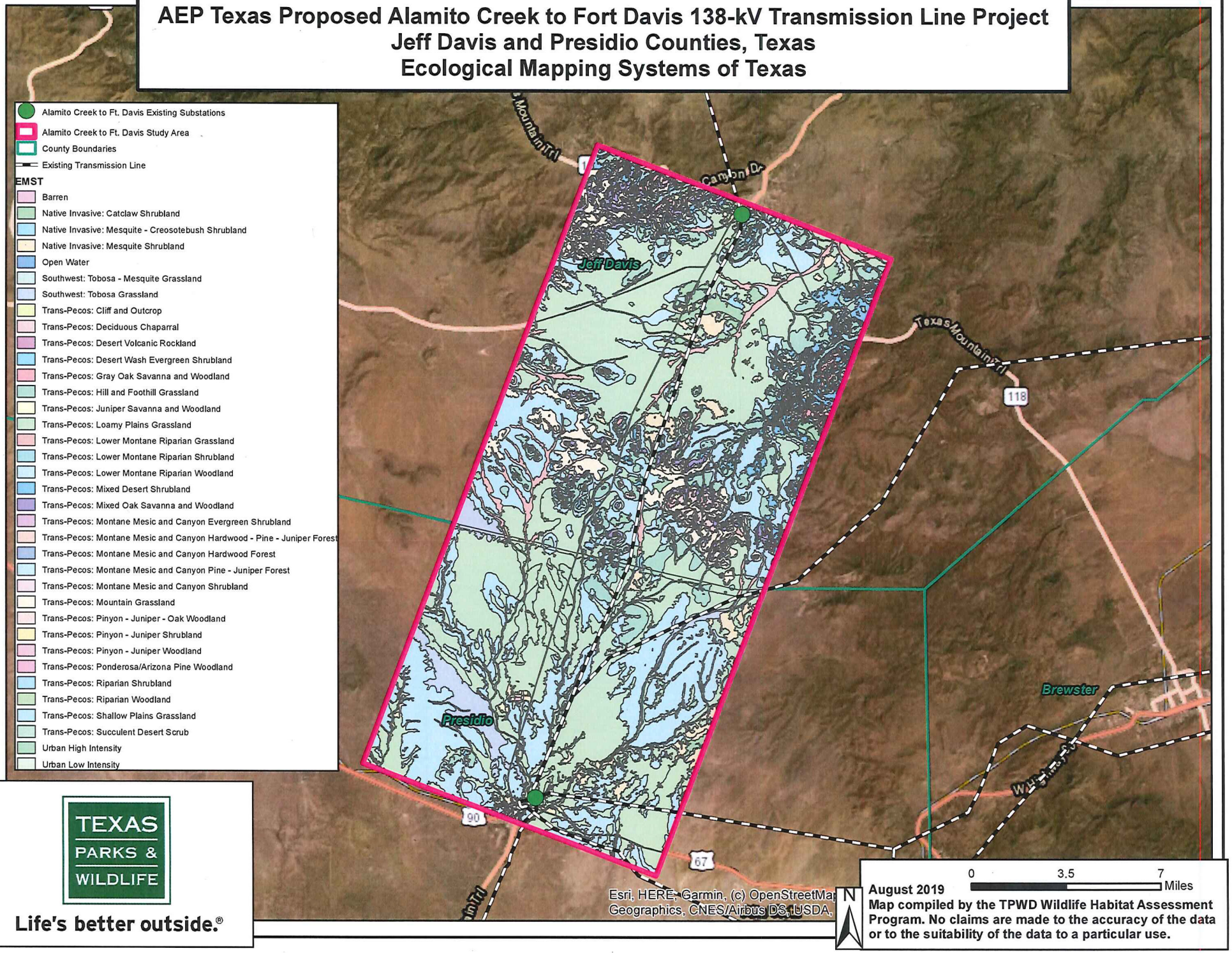
0 3.5 7 Miles

N

August 2019

Map compiled by the TPWD Wildlife Habitat Assessment Program. No claims are made to the accuracy of the data or to the suitability of the data to a particular use.

AEP Texas Proposed Alamito Creek to Fort Davis 138-kV Transmission Line Project
Jeff Davis and Presidio Counties, Texas
Ecological Mapping Systems of Texas



TEXAS PARKS & WILDLIFE

Life's better outside.®

August 2019

Map compiled by the TPWD Wildlife Habitat Assessment Program. No claims are made to the accuracy of the data or to the suitability of the data to a particular use.

TEXAS
PARKS &
WILDLIFE

Life's better outside.®

March 25, 2022

Mr. Thomas J. Ademski
Project Manager, Enviromental Services
Burns & McDonnell
8911 North Capital of Texas Highway, Bldg. 3 Ste. 3100
Austin, TX 78759

RE: American Electric Power Texas, Inc. Proposed Alamito Creek to Fort Davis 138-kilovolt Transmission Line Project; Jeff Davis and Presidio Counties, Texas (2022 Re-coordination)

Dear Mr. Ademski:

Texas Parks and Wildlife Department (TPWD) received the coordination request regarding the above-referenced proposed transmission line project. TPWD staff has reviewed the information provided and offers the following comments and recommendations concerning this project.

Please be aware that a written response to a TPWD recommendation or informational comment received by a state governmental agency may be required by state law. For further guidance, see the Texas Parks and Wildlife Code section 12.0011. We are providing input on this proposed project to facilitate incorporation of voluntary measures during construction, operation, and maintenance that may assist the project proponent in minimizing impacts to the state's natural resources. For tracking purposes, please refer to TPWD Project Number 48179 in any return correspondence regarding this project.

Previous Coordination

TPWD provided information and recommendations regarding the preliminary study area for this project to Burns & McDonnell on August 14, 2019. Email correspondence from Burns & McDonnell in February 2022 stated "AEP's project was initiated in 2019 but was placed on hold for a lengthy period. It was restarted last fall, and we have recently completed public outreach meetings. I did want to ask if TPWD may want to provide any updates to the 2019 response letter." Therefore, TPWD is providing this letter as an update and supplement to the August 2019 letter. TPWD notes that study area has not changed since the coordination that took place in August 2019.

Recommendation: Please review the TPWD correspondence dated August 14, 2019, and consider the recommendations provided, as they remain applicable to the project as currently proposed. Recommendations made in the 2019 letter are not repeated in this letter unless there have been changes to standard recommendations for that species or resource.

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.texas.gov

Project Description

According to the American Electric Power Texas, Inc. (AEP Texas) project website "The Alamito Creek to Fort Davis Transmission Improvements Project involves replacing an existing 69-kilovolt power line in Presidio and Jeff Davis counties. The existing line was constructed in 1929 and is past its service life."

The project description provided in the 2019 coordination letter from Burns & McDonnell states "AEP Texas will be filing an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to construct new electric transmission facilities in Jeff Davis and Presidio Counties. The proposed transmission facilities will include a new single circuit 138-kilovolt (kV) transmission line between the existing Alamito Creek Substation located in the northeastern portion of the City of Marfa, and the existing Fort Davis Substation located in the southern portion of the community of Fort Davis. The proposed transmission line will be approximately 20 miles in length and will require a 100-foot wide right-of-way (ROW).

Burns & McDonnell is preparing an Environmental Assessment (EA) and Alternative Routing Study for the proposed project that will support AEP Texas's CCN application with the PUC. Burns & McDonnell is in the process of collecting and evaluating information to identify environmental, cultural, and land use constraints that exist in the study area. Burns & McDonnell will consider and evaluate these constraints when developing and evaluating potential alternative routes between the project's endpoints."

General Construction Recommendations

TPWD would like to provide the following general construction recommendations to assist in project planning.

Recommendation: Where new construction is the only feasible option, TPWD recommends routing new transmission and distribution lines along existing roads, pipelines, transmission lines, or other utility ROW and easements to reduce habitat fragmentation. By utilizing previously disturbed, existing utility corridors, county roads and highway ROW, adverse impacts to fish and wildlife resources would be reduced by avoiding and minimizing the impacts to undisturbed habitats.

Recommendation: Where trenching or other excavation is involved in construction, TPWD recommends that contractors keep trenching and excavation and backfilling crews close together to minimize the number of trenches or excavation areas left open at any given time during construction.

TPWD recommends that any open trenches or excavation areas be covered overnight and inspected every morning to ensure no wildlife species have been trapped. Trenches left open for more than two daylight hours should be inspected for the presence of trapped wildlife prior to backfilling. If trenches and excavation areas cannot be backfilled the day of initial excavation, then escape ramps should be installed at least every 90 meters (approximately 295 feet). Escape ramps can be short lateral trenches or wooden planks sloping to the surface at an angle less than 45 degrees (1:1).

Recommendation: For soil stabilization and revegetation of disturbed areas within the proposed project area, TPWD recommends erosion and seed and mulch stabilization materials that avoid entanglement hazards to snakes and other wildlife species. Because the mesh found in many erosion control blankets or mats pose an entanglement hazard to wildlife, TPWD recommends the use of no-till drilling, hydromulching, or hydroseeding rather than erosion control blankets or mats due to a reduced risk to wildlife. If erosion control blankets or mats will be used, the product should contain no netting or contain loosely woven, natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic mesh matting and hydromulch containing microplastics should be avoided.

Recommendation: During construction, operation, and maintenance of the proposed transmission line, TPWD recommends observing slow (25 miles per hour, or less) speed limits within the project area. Reduced speed limits would allow personnel to see wildlife in the vehicle path and avoid wildlife injury or death.

Recommendation: TPWD recommends the judicious use and placement of sediment control fence to exclude wildlife from the construction area. In many cases sediment control fence placement for the purposes of controlling erosion and protecting water quality can be modified minimally to also provide the benefit of excluding wildlife access to active construction areas. The exclusion fence should be buried at least six inches and be at least 24 inches high. The exclusion fence should be maintained during active construction and only be removed after the construction is completed. Construction personnel should be encouraged to examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the active construction area and provide safe egress opportunities prior to initiation of daily construction activities.

International Dark Skies Designation/Lighting

The International Dark Sky Places (IDSP) Program was founded in 2001 to encourage communities, parks, and protected areas around the world to preserve and protect dark sites through responsible lighting polices and public education. As of January 2022, there are over 195 certified IDSPs in the world with 16 certified IDSPs in Texas. The International Dark-sky Association utilizes a rigorous designation process to designate IDSPs. The IDSP Program offers five types of designations: IDS Communities, IDS Parks, IDS Reserves, IDS Sanctuaries, and Urban Night Sky Places. Sky glow as a result of light pollution can have negative impacts on wildlife and ecosystems by disrupting natural day and night cycles inherent in managing behaviors such as migration, reproduction, nourishment, sleep, and protection from predators. Wildlife impacts from light pollution and potential impacts to IDSPs is of concern to TPWD.

Recommendation: TPWD recommends certified IDSPs be identified in the constraints analysis and avoided during development of alternative routes. The locations of certified IDSPs can be found on the International Dark-Sky Association website. If certified IDSPs would be affected, TPWD recommends the length of routes through these properties/places/communities be included in any accounting of alternative route impacts presented in the EA. TPWD recommends committing to dark-sky lighting practices for the proposed transmission line project, including lighting for substations (if lighting is proposed for this project). When lighting is added, TPWD recommends minimizing sky glow by focusing light downward, with full cutoff luminaires to avoid light emitting above the horizontal. TPWD recommends using the minimum amount of night-time lighting needed for safety and security and to use dark-sky friendly lighting that is on only when needed, down-shielded, as bright as needed, and minimizing blue light emissions. Appropriate lighting technologies and beneficial management practices (BMPs) can be found on the International Dark-Sky Association website.

Migratory Birds

Federal Law: Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits taking, attempting to take, capturing, killing, selling, purchasing, possessing, transporting, and importing of migratory birds, their eggs, parts, or nests, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The U.S. Fish and Wildlife Service (USFWS) Migratory Bird Office can be contacted at (505) 248-7882 for more information on potential impacts to migratory birds.

Within the project area, potential impacts to migratory birds may occur during site preparation and grading activities through the disturbance of existing vegetation and bare ground that may be occupied by active bird nests, including nests that may occur in grass, shrubs, and trees and on bare ground.

Recommendation: TPWD recommends any vegetation clearing be scheduled outside of the general bird nesting season of March 15th to September 15th. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends surveying the area proposed for disturbance to ensure that no nests with eggs or young will be disturbed by construction. Nest surveys should be conducted not more than five days prior to clearing activities in order to maximize detection of active nests. TPWD generally recommends a 100-foot radius buffer of vegetation remain around active nests until the eggs have hatched and the young have fledged; however, the size of the buffer zone depends on various factors and can be coordinated with the local or regional USFWS office. Raptor nesting occurs late winter through early spring; TPWD recommends construction activities be excluded from a minimum zone of 100 meters (approximately 328 feet) surrounding any raptor nest during the period of February 1 through July 15. The USFWS can be contacted at the number listed above for further information.

The potential exists for birds to collide with power lines and associated guy wires and static lines. Bird fatalities can also occur due to electrocution if perching birds simultaneously contact energized and grounded structures.

Recommendation: TPWD recommends routing transmission lines to avoid crossing riparian areas, wetlands, and open water habitat, to the extent feasible. TPWD recommends crossing streams in a perpendicular manner and avoiding placement of lines parallel to streams and their associated wooded corridors. Where lines cross or are located near creeks, drainages, wetlands, and lakes, TPWD recommends line markers be installed at the crossings or closest points to the drainages to reduce potential bird collisions.

Recommendation: TPWD recommends bird collision and electrocution risks be considered during project routing and design and recommends incorporating design features that will minimize those risks. For additional information, please see the guidelines published by USFWS and the Avian Power Lines Interaction Committee (APLIC) in the updated guidance document *Reducing Avian Collisions with Power Lines: State of the Art in 2012*. This manual, released on December 20, 2012, identifies beneficial practices and provides specific guidance to help electric utilities and cooperatives reduce bird collisions with power lines. A companion document, *Suggested Practices for Avian Protection on Power Lines*, was published by APLIC and the USFWS in 2006.

Managed Areas

State Law: Parks, Public Recreation Areas, Scientific Areas, Wildlife Refuges, or Historic Sites

The following publicly managed areas tracked by TPWD are present within the study area.

Davis Mountains State Park (TPWD)
Indian Lodge (TPWD)
Fort Davis National Historic Site (National Park Service)
Coffield Park (City of Marfa)

Parks and Wildlife Code chapter 26 requires that before a state agency can approve any project that will result in the use or taking of public land designated and used as a park, public recreation area, scientific area, wildlife refuge, or historic site, that state agency must provide certain notices to the public, conduct a hearing, and render a finding that there is no feasible and prudent alternative and that the project includes all reasonable planning to minimize harm to the property. Additionally, per Section 6(f) of the U.S. Land and Water Conservation Fund Act (LWCF), no public outdoor recreation areas acquired or developed with LWCF assistance can be converted to non-recreational uses without Department of Interior approval. The conversion must be in accordance with the statewide outdoor recreation plan and replaced with other recreation land of reasonable equivalent usefulness and location.

> **Recommendation:** TPWD recommends avoiding lands owned or managed for conservation or recreation by city, county, state, and federal entities. Such entities should be contacted early in the planning process to determine if the proposed transmission line may impact their property. In cases where a park or similar recreation facility has received grant funds from TPWD, replacement of any land converted from recreational use is required.

State listed Species

Parks and Wildlife Code, Section 68.015 – State listed Species

Texas Parks and Wildlife Code regulates state listed threatened and endangered animal species. The capture, trap, take, or killing of state listed threatened and endangered animal species is unlawful unless expressly authorized under a permit issued by USFWS or TPWD. The *TPWD Guidelines for Protection of State Listed Species*, which includes a list of penalties for take of species, can be found on the Wildlife Habitat Assessment Program website. State listed species may only be handled by persons with authorization obtained through TPWD. For more

information on this permit, please contact the Wildlife Permits Office at (512) 389-4647.

Texas horned lizard (*Phrynosoma cornutum*)

The study area may provide suitable habitat for the state listed Texas horned lizard. There are three Texas Natural Diversity Database (TXNDD) records for this species located within the study area, with several additional records located just outside of the study area. The Texas horned lizard inhabits open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees and soil may vary in texture from sandy to rocky.

If present in the project area, the Texas horned lizard could be impacted by ground disturbing activities from construction. A useful indication that the Texas horned lizard may occupy the site is the presence of harvester ant (*Pogonomyrmex barbatus*) mounds since harvester ants are the primary food source of Texas horned lizards. Texas horned lizards may hibernate on-site in loose soils a few inches below ground during the cool months from September/October to March/April. Construction in these areas could harm hibernating lizards. Horned lizards are active above ground when temperatures exceed 75 degrees Fahrenheit. If horned lizards (nesting, gravid females, newborn young, lethargic from cool temperatures or hibernation) cannot move away from noise and approaching construction equipment in time, they could be affected by construction activities.

Recommendation: TPWD recommends implementing the following BMPs to assist in minimizing potential impacts to the Texas horned lizard. TPWD notes that implementing the following BMPs could also help minimize impacts to a variety of native wildlife species that may inhabit the project area:

Contractor Training for Protected Species – TPWD recommends providing training for project contractors prior to the construction of the proposed project. Wildlife training should consist of identification of Texas horned lizards and their primary food source (harvester ants), and the proper protocol to avoid impact if a Texas horned lizard or other rare or protected species is encountered. TPWD recommends instructing contractors to avoid impacts to harvester ant mounds where feasible. TPWD understands that ant mounds in the direct path of construction would be difficult to avoid, but contractors should be mindful of these areas when deciding where to place project specific locations and other disturbances associated with construction.

Biological Monitor and Horned Lizard Encounters – TPWD recommends a biological monitor be present during construction to identify and relocate Texas horned lizards or other state listed species if found. If the presence

of a biological monitor during construction is not feasible, state listed species observed during construction should be allowed to safely leave the site on their own or be relocated to a nearby area with similar habitat that would not be disturbed during construction. Individuals handling listed species will need to abide by applicable federal or state law and can contact the TPWD Wildlife Permits Office for additional information. TPWD recommends that any translocations of reptiles be the minimum distance possible no greater than one mile, preferably within 100 to 200 yards from the initial encounter location. After horned lizard removal, the area that will be disturbed during active construction and project specific locations should be fenced off to exclude horned lizards and other reptiles.

The exclusion fence should be constructed and maintained as follows:

- The exclusion fence should be constructed with metal flashing or drift fence material. Rolled erosion control mesh material should not be used.
- The exclusion fence should be buried at least 6 inches deep and be at least 24 inches high.
- The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated with site-specific native species.

Work During Cold Weather – If construction activities take place during cold weather, it is recommended that construction personnel stay observant of activities that may harm the Texas horned lizard, such as disruption of burrows. In cold weather, this species will use burrows or pallets near the base of vegetation for shelter. Their slow metabolism in cold weather can reduce movements, restricting their ability to flee from danger.

No Kill Wildlife Policy – TPWD recommends implementing a "No Kill Wildlife Policy" during the construction and operation of the project. This policy prevents inadvertently killing protected species that may be mistaken for common species.

Trans-Pecos black-headed snake (*Tantilla cucullata*)

The study area may provide suitable habitat for the state listed Trans-Pecos black-headed snake. TPWD notes that there are four TXNDD records for this species located within the study area. The state listed Trans-Pecos black-headed snake can be found in steep-sided rocky canyons with pinyon pine, oak, and juniper; hilly grasslands with juniper and cholla; streamside woodlands with creosotebush,

acacia, yucca, and grasses; and low hills of arid grasslands with creosotebush, yucca, ocotillo, and agave. This secretive, fossorial snake is usually under cover, underground, or in crevices and may travel on the surface at night during the summer when surface moisture is present.

> **Recommendation:** Because snakes are generally perceived as a threat and killed when encountered and since the project area may contain suitable habitat for the Trans-Pecos black-headed snake, TPWD recommends construction personnel and contractors be advised to avoid injury or harm to all snakes encountered during clearing and construction. Injury to humans usually occurs when the snake becomes agitated following harassment or when someone attempts to handle a recently dead venomous snake that still contains its bite reflex. Therefore, contractors should avoid contact with snakes if encountered and allow all native snakes to safely leave the premises.

Roundnose minnow (*Dionda episcopa*)

There is one TXNDD record for the state listed roundnose minnow located within the study area. The roundnose minnow is found within the Pecos River and Limpia Creek. This species is restricted to clear, spring-fed waters having little temperature variation.

> **Recommendation:** TPWD recommends the use of BMPs for riparian areas to minimize impacts to the roundnose minnow. BMPs would include measures such as spanning water features, avoiding construction during the spawning period of the roundnose minnow, and the use of double silt fences and doubling soil stabilization measures along the banks of streams that provide suitable habitat to avoid increasing the turbidity of the stream. In addition to spanning all water features in the project area, TPWD recommends avoiding multiple crossings of streams or installing lines parallel to waterways and therefore removing large sections of riparian habitat.

Species of Greatest Conservation Need

In addition to state and federally protected species, TPWD tracks Species of Greatest Conservation Need (SGCN) and other special features and natural communities that are not listed as threatened or endangered. These species and communities are tracked in the TXNDD and TPWD actively promotes their conservation. TPWD considers it important to evaluate and, if necessary, minimize impacts to SGCN and their habitat to reduce the likelihood of endangerment and preclude the need to list as threatened or endangered in the future.

Mexican hog-nosed snake (*Heterodon kennerlyi*)

There is a TXNDD record for the Mexican hog-nosed snake located within the study area. This species is tracked by TPWD but is not considered an SGCN at this time. The Mexican hog-nosed snake differs slightly from the western hognose snake (*Heterodon nasicus*), which is considered to be an SGCN. There is ongoing research to elucidate taxonomy that will assist TPWD in determining if this species needs to become a SGCN.

The Mexican hog-nosed snake inhabits mesquite grasslands, thorn scrub, sandy and gravelly prairies (often in the vicinity of floodplains, streams, and arroyos), edges of temporary rain pools, desert scrub, dry mountain canyon basins, open riparian woodland, and cultivated lands.

Recommendation: TPWD recommends referring to the recommendations listed above for the Trans-Pecos black-headed snake as they would be applicable in avoiding and minimizing impacts to the Mexican hog-nosed snake as well.

Western box turtle (*Terrapene ornata*)

There are four TXNDD records for the western box turtle located within the study area. The western box turtle inhabits prairie grasslands, pastures, fields, sandhills, and open woodlands. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) or enter burrows made by other species. Adults have a home-range size of approximately 6 to 14 acres. This species is active spring through fall with courtship and mating occurring primarily in the spring. Eggs are laid in nests dug in soft well-drained soil in open areas. This species is threatened by habitat loss and fragmentation, vehicle strikes on roads, and collection for the pet trade and food markets.

Recommendations: TPWD recommends implementing the following BMPs to minimize impacts to the above-listed terrestrial reptile SGCN.

- As previously stated, TPWD recommends the use of no-till drilling, hydromulching and/or hydroseeding due to a reduced risk to wildlife. If erosion control blankets or mats will be used, the product should not contain netting, but if it must contain netting it should contain loosely woven, natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. TPWD recommends avoiding the use of plastic mesh matting and hydromulch containing microplastics.

- As previously stated, for open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling.
- Identify locations of burrows on the project site and avoid impacts to burrows if feasible.
- TPWD recommends that any translocations of reptiles be the minimum distance possible no greater than one mile, preferably within 100 to 200 yards from the initial encounter location.
- Inform contractors that if reptiles are found on the project site allow species to safely leave the project area.
- Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter where feasible.
- Contractors should be advised of potential occurrence in the project area, and to avoid harming these species if encountered.
- Due to increased activity (mating) of reptiles during the spring, construction activities like clearing or grading should attempt to be scheduled outside of the spring (April-May) season. Also, timing ground disturbing activities before October when reptiles become less active and may be using burrows in the project area is also encouraged.

Yellow-nosed cotton rat (*Sigmodon ochrognathus*)

Comment: TPWD notes that since this project was initially coordinated in 2019, the yellow-nosed cotton rat is no longer included on the TPWD county list and is not considered an SGCN. This species does not need to be evaluated in the EA for its potential to be impacted by the construction of the proposed project.

Vegetation

Recommendation: TPWD recommends that the removal of native vegetation during construction be minimized to the extent feasible. Unavoidable removal of vegetation should be mitigated by revegetating disturbed areas with site specific native plant species where feasible. The replacement of native plants will help control erosion, provide habitat for wildlife, and provide native species an opportunity to compete with undesirable, non-native, invasive plant species.

Monarch and Pollinator Conservation

In December 2020, the USFWS determined that Endangered Species Act listing for the monarch butterfly (*Danaus plexippus*) was warranted; however, listing was precluded by higher priority listing actions. Currently, the monarch butterfly is a

candidate for listing and the USFWS will review the species status annually until a proposal for listing is developed.

There is widespread concern regarding the decline of monarch butterflies and other native insect pollinator species due to reductions in native floral resources. To support pollinators and migrating monarchs, TPWD encourages the establishment of native wildflower habitats on private and public lands. Establishing wildflower habitats in new developments can contribute to pollinator conservation. Infrastructure ROW can provide habitat for a diverse community of pollinators, providing forage for food and breeding or nesting opportunities. Infrastructure ROW extends across a variety of landscapes and can aid dispersal of pollinators by linking fragmented habitats. By acting as refugia for pollinators in otherwise inhospitable landscapes, this habitat can contribute to the maintenance of healthy ecosystems and provide ecological services such as crop pollination services. Recent publications on conserving pollinators in Texas can be found at the TPWD Wildlife Habitat Assessment Program: Planning Tools and Best Management Practices webpage.

Recommendation: To contribute to pollinator conservation efforts, TPWD encourages the project proponent to revegetate impacted areas with vegetation that provides habitat for monarch butterflies and other pollinator species. Species appropriate for the project area can be found by accessing the Lady Bird Johnson Wildflower Center, working with TPWD biologists to develop an appropriate list of species, or utilizing resources found at the Monarch Watch website or the Xerces Society's Guidelines webpage.

Recommendation: To create benefits for grassland wildlife and pollinators, TPWD recommends revegetating areas disturbed by project activities with site-specific native species to mitigate for unavoidable loss of native vegetation, with attention to providing habitat for pollinator species. TPWD recommends that incorporating native grass and floral species into the permanent revegetation plan for the project as funding and seed availability allow. TPWD recommends incorporating pollinator conservation into maintenance plans for the ROW, to promote and sustain the availability of flowering species throughout the growing season. TPWD recommends scheduling ROW maintenance to occur once the seed from pollinator plants has been released.

Recommendation: TPWD advises against planting the non-native milkweed species black swallow-wort (*Cynanchum louiseae*) and pale swallow-wort (*C. rossicum*). Monarch butterflies will lay eggs on these plant species, but the larvae are unable to feed and complete their life cycle. Additionally, these plant species can be highly invasive. TPWD also advises against planting the

non-native tropical milkweed (*Asclepias curassavica*), a popular commercial nursery milkweed that can persist year-round in southern states. The year-round persistence of tropical milkweed fosters greater transmission of the protozoan *Ophryocystis elektroscirrha* (OE), increasing the likelihood that monarchs become infected with the debilitating parasite.

Data Reporting and the Texas Natural Diversity Database

TPWD maintains records of occurrence for protected and rare species, or SGCN, within the TXNDD and these data are publicly available by request. The TXNDD is intended to assist users in avoiding harm to rare species or significant ecological features. The TXNDD is updated continuously, and relies partially on information submitted by private parties, such as developers or their consultants. Given the small proportion of public versus private land in Texas, the TXNDD does not include a comprehensive inventory of rare resources in the state. These data are not inclusive and cannot be used as presence/absence data. They represent species that could potentially be in your project area. This information cannot be substituted for field surveys.

Recommendation: The TXNDD is updated continuously based on new, updated and undigitized records; therefore, TPWD recommends requesting the most recent TXNDD data on a regular basis. For questions regarding a record or to request the most recent data, please contact TexasNatural.DiversityDatabase@tpwd.texas.gov.

Recommendation: To aid in the scientific knowledge of a species' status and current range, TPWD encourages reporting encounters of protected and rare species to the TXNDD according to the data submittal instructions found at the TPWD Texas Natural Diversity Database: Submit Data webpage. An additional method for reporting observations of species is through the iNaturalist community app where plant and animal observations are uploaded from a smartphone. The observer then selects to add the observation to specific TPWD Texas Nature Tracker Projects appropriate for the taxa observed, including Herps of Texas, Birds of Texas, Texas Eagle Nests, Texas Whooper Watch, Mammals of Texas, Rare Plants of Texas, Bees & Wasps of Texas, Terrestrial Mollusks of Texas, Texas Freshwater Mussels, Fishes of Texas, and All Texas Nature.

I appreciate the opportunity to provide preliminary input on potential impacts related to this project, and I look forward to reviewing the EA and Alternative Route Analysis. Please contact me at (512) 389-8054 or Jessica.Schmerler@tpwd.texas.gov if you have any questions.

Sincerely,

Jessica Schmerler

Jessica E. Schmerler, CWB
Wildlife Habitat Assessment Program
Wildlife Division

JES:48179

cc: Ms. Rachelle Robles, PUC

BURNS McDONNELL

October 10, 2023

Mr. / Ms._____
Title
Agency / Office
Street Address
City, State, Zip Code

Re: Request for Information
AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project
Jeff Davis and Presidio Counties, Texas

Dear Mr. / Ms._____:

AEP Texas Inc. (AEP Texas) will be filing an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to construct new a new single-circuit 138-kilovolt (kV) transmission line between the existing Alamito Creek Substation located northeast of the city of Marfa, and the existing Fort Davis Substation located in the southern portion of the community of Fort Davis (Project). The proposed transmission line will be approximately 20 miles in length, and will require a 100-foot wide right-of-way (ROW). Please refer to the attached map for the location of the study area and the termination points.

Burns & McDonnell has been preparing an Environmental Assessment (EA) and Alternative Routing Study for the proposed Project that will support AEP Texas's CCN application with the PUC. Burns & McDonnell has been collecting and evaluating information to identify environmental, cultural, and land use constraints that exist in the study area. Burns & McDonnell will consider and evaluate these constraints during the development and evaluation of potential alternative routes between the Project's endpoints.

A letter dated August 3, 2019, was previously sent regarding the AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project; however, the Project was delayed. The Alamito Creek to Ft. Davis 138-kV Transmission Line Project is once again moving forward and Burns & McDonnell is requesting that your agency or office provide any current or updated environmental or land use concerns that you may have regarding the siting and potential environmental effects from the construction of these facilities within the designated study area as shown on the enclosed map.

We would appreciate receiving information related to any permits, easements, or other approvals that your agency or office requires. We would also like to request information related to any major proposed development or construction projects that your agency or office may be planning, or is aware of, within the study area.

6200 Bridge Point Parkway \ Building 4, Suite 400 \ Austin, TX 78759
O 512-872-7130 \ F 512-872-7127 \ burnsmcd.com

BURNS McDONNELL

Your input on any of the following resources as they relate to your agency or office will assist the project team in evaluating the proposed Project:

- Land use (current or proposed land development projects, park/recreation areas, etc.)
- Aesthetics
- Water quality and wetlands
- Soils and geology
- Wildlife, vegetation, and fisheries (including threatened and endangered species)
- Socioeconomics (population, employment, growth, current/future development)
- Cultural resources (historic and archeological sites)
- Transportation and roads (proposed airport and roadway expansions, construction, operations, and maintenance)

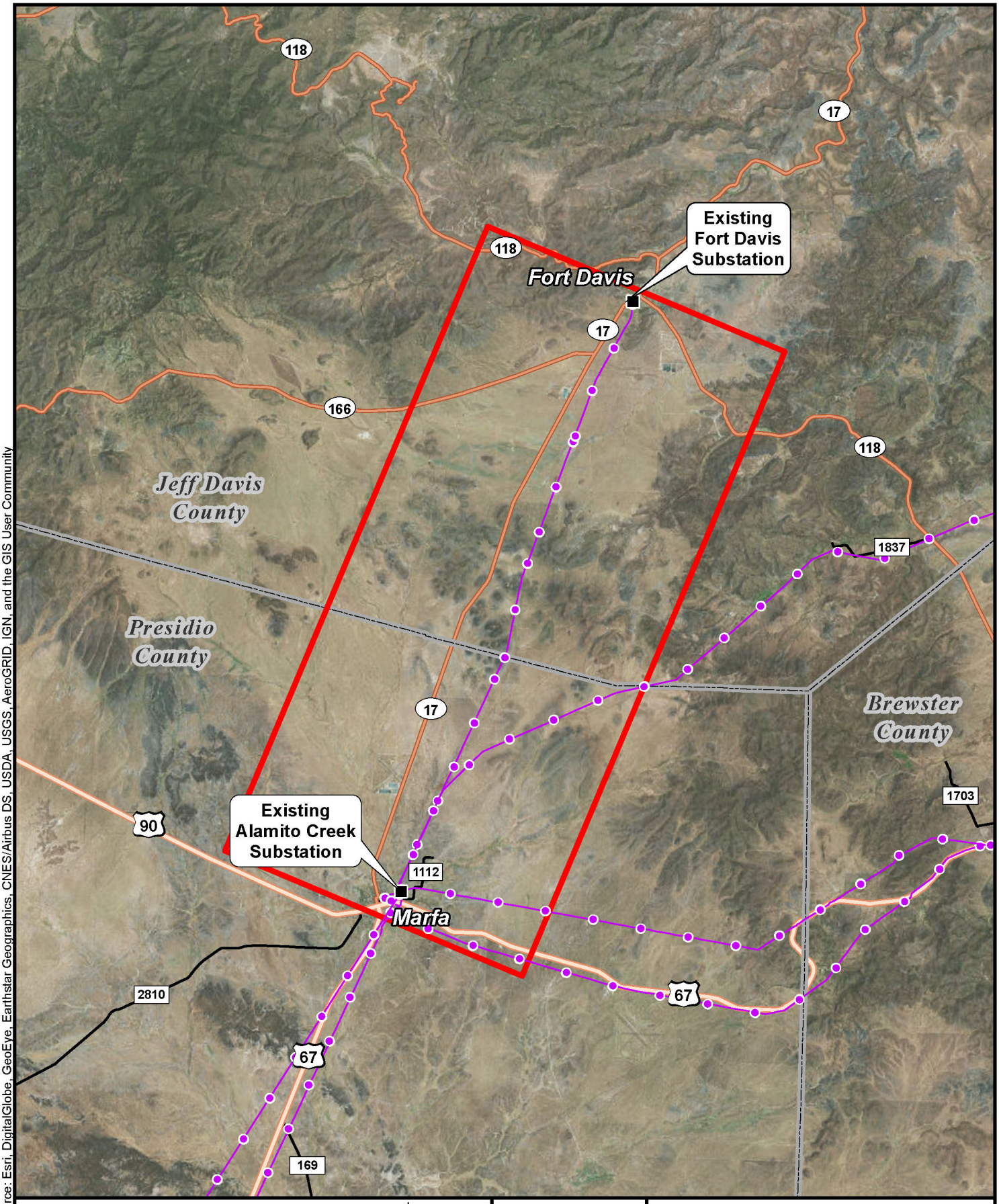
Burns & McDonnell would like to thank you in advance for your comments, which will be an important consideration in our assessment of potential environmental and land use impacts of the proposed transmission line. If you have any questions concerning this project or our request for information, please contact me at tjademski@burnsmcd.com or (737) 236-0106. Your earliest reply will be appreciated.

Sincerely,

Thomas J. Ademski
Project Manager

TA/ta

Attachment
cc: Dewey Peters, AEP
Kensley Greuter, AEP



Project Endpoint

Existing Transmission Line

Study Area

NORTH

0 2 4 8

Miles

BURNS McDONNELL

Alamito Creek to Ft. Davis
138-kV Transmission Line Project
AEP Texas
Jeff Davis & Presidio Counties, TX

Path: \\bmcd\dfs\Clients\ENS\AEPSvc\116177_Alamito-FtDav\Studies\Geospatial\DataFiles\ArcDocs\Agency_Contact_Map_A2FD.mxd gacox 6/18/2019

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: ESRI; USDA NAIP "Texas" (2016); Burns & McDonnell Engineering Company, Inc

Issued: 6/18/2019

OFFICIALS/AGENCIES CONTACTED
ALAMITO CREEK TO FORT DAVIS 138-kV TRANSMISSION LINE PROJECT
September 2023

FEDERAL

Tony Robinson
Regional Administrator
Region VI
Federal Emergency Management Agency
FRC 800 North Loop 288
Denton, TX 76209-3698

Kristy Oates
State Conservationist
Natural Resources Conservation Service
101 South Main St.
Temple, TX 76501-7602

Claude Ross
Assistant State Conservationist
Administrative Zone 2 – San Angelo Office
Natural Resources Conservation Service
3878 West Houston Harte
San Angelo, TX 76901

Karen Myers
Field Supervisor
Austin Ecological Services Field Office
U.S. Fish and Wildlife Service
1505 Ferguson Lane
Austin, TX 78754

U.S. Army Corps of Engineers
Las Cruces Regulatory Office
200 East Griggs Avenue
Las Cruces, NM 88001
SPA-RD-NM@usace.army.mil

Randy Gee
Office of Communities, Tribes and
Environmental Assessment
U.S. EPA Region 6
1201 Elm Street, Suite 500
Mail Code: ORACN
Dallas, TX 75270-2102

Obstruction Evaluation Group
Federal Aviation Administration
Southwest Region
10101 Hillwood Parkway
Fort Worth, TX 76117-1524

Astrid Liverman, Ph.D.
Historian, Heritage Partnerships Program
National Park Service, Intermountain Region
12795 W. Alameda Parkway
Denver, CO 80228

Military Aviation and Installation Assurance
Siting Clearinghouse
3400 Defense Pentagon, Room 5C646
Washington, DC 20301-3400
osd.dod-siting-clearinghouse@mail.mil

STATE

David Yoskowitz, Ph.D.
Executive Director
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744

Laura Zebehazy
Program Leader
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744
WHAB@tpwd.texas.gov

Dawn Buckingham, M.D.
Texas Land Commissioner
Texas General Land Office
1700 North Congress Avenue
Suite 935
Austin, TX 78701-1495

Reagyn (Ryan) Slocum
Regional Director – Region 6
Texas Commission on Environmental Quality
401 E. Franklin Ave., Ste 560
El Paso, TX 79901-1212

OFFICIALS/AGENCIES CONTACTED
ALAMITO CREEK TO FORT DAVIS 138-kV TRANSMISSION LINE PROJECT
September 2023

Mark Wolfe
Executive Director
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711

Jessica Pena
Deputy Executive Administrator
Water Supply and Infrastructure
Texas Water Development Board
P.O. Box 13231
Austin, TX 78711-3231

Tomas Trevino, P.E.
District Engineer
El Paso District
Texas Department of Transportation
13301 Gateway West
El Paso, TX 79928-5410

Dan Harmon
Director
Aviation Division
Texas Department of Transportation
6230 E. Stassney Lane
Austin, TX 78744

Doug Booher
Director
Environmental Affairs Division
Texas Department of Transportation
6230 E. Stassney Lane
Austin, TX 78744

Irene Matos-Burns
Program Manager, Environmental Permits
Railroad Commission of Texas
P.O. Box 12967
Austin, TX 78711-2967

Annette Gutierrez
Executive Director
Rio Grande Council of Governments
8037 Lockheed Drive, Suite 100
El Paso, TX 79925

Janet Adams
General Manager
Jeff Davis County Underground Water
Conservation District
P.O. Box 1203
Fort Davis, TX 79734-1203

Carolyn Macartney
General Manager
Presidio County Underground Water
Conservation District
P.O. Box 606
Marfa, TX 79843-0606

JEFF DAVIS COUNTY

The Honorable Curtis Evans
Jeff Davis County Judge
P.O. Box 836
100 Court Avenue
Fort Davis, TX 79734

Jody Adams
Jeff Davis County Precinct 1 Commissioner
P.O. Box 825
Fort Davis, TX 79734

Roy Hurley
Jeff Davis County Precinct 2 Commissioner
P.O. Box 836
Fort Davis, TX 79734

John Davis
Jeff Davis County Precinct 3 Commissioner
701 A. Rattlesnake Ln.
Fort Davis, TX 79734

Royce Laskoskie
Jeff Davis County Precinct 4 Commissioner
P.O. Box 836
Fort Davis, TX 79734

OFFICIALS/AGENCIES CONTACTED
ALAMITO CREEK TO FORT DAVIS 138-kV TRANSMISSION LINE PROJECT
September 2023

Carla Spencer
Executive Director
Brewster-Presidio-Jeff Davis County Farm
Service Agency
1805 State Hwy 118 North
Alpine, TX 79830

PRESIDIO COUNTY

The Honorable Jose Portillo Jr.
Presidio County Judge
P.O. Box 606
300 N. Highland Avenue
Marfa, TX 79843

Brenda Silva Bentley
Presidio County Precinct 1 Commissioner
P.O. Box 1372
Marfa, TX 79843

Margarito Hernandez
Presidio County Precinct 2 Commissioner
P.O. Box 606
300 N. Highland Avenue
Marfa, TX 79843

Jose Cabezuela
Presidio County Precinct 3 Commissioner
P.O. Box 606
300 N. Highland Avenue
Marfa, TX 79843

David Beebe
Presidio County Precinct 4 Commissioner
P.O. Box 606
300 N. Highland Avenue
Marfa, TX 79843

OTHER LOCAL JURISDICTIONS

Manuel V. Baeza
Mayor
City of Marfa
113 S. Highland Avenue
Marfa, TX 79843

Graydon Hicks
Superintendent
Fort Davis Independent School District
P.O. Box 1339, 401 W. Webster Ave.
Fort Davis, TX 79734

Oscar Aguero
Superintendent
Marfa Independent School District
400 W. Lincoln Street
Marfa, TX 79843

Debbie Engle
Superintendent
Valentine Independent School District
100 Kentucky Street
Valentine, TX 79854

ADDITIONAL CONTACTS

Suzanne Scott
State Director
The Nature Conservancy
200 E. Grayson St., Suite 202
San Antonio, TX 78215

Chad Ellis
Chief Executive Officer
Texas Agricultural Land Trust
P.O. Box 6152
San Antonio, TX 78209

Mark Steinbach
Executive Director
Texas Land Conservancy
P.O. Box 162481
Austin, TX 78716

Lori Olson
Executive Director
Texas Land Trust Council
P.O. Box 2677
Wimberly, TX 78676

USDA United States Department of Agriculture
Farm Production and Conservation
Natural Resources Conservation Service
USDA NRCS
W.R. Poage Federal Building
101 South Main Street
Temple, TX 76501

October 20, 2023

Burns and McDonnell
6200 Bridge Point Parkway
Building 4, Suite 400
Austin, TX 78759

Attention: Thomas J. Ademski, Project Manager

Subject: Proposed AEP Texas, Inc. Alamito Creek to Ft. Davis 138-kV Transmission Line Project Jeff Davis and Presidio Counties, Texas

Thank you for the opportunity to provide input on the potential environmental effects of the Proposed AEP Texas, Inc. Alamito Creek to Ft. Davis 138-kV Transmission Line Project Jeff Davis and Presidio Counties, Texas. The proposed site has been evaluated and does not involve any USDA-NRCS easements.

The soils in the proposed project area have been reviewed. There are a few soil limitations in the project area that should be taken into consideration while planning for the project. As with any project, soil erosion is a main concern and erosion prevention practices are recommended. The most common and possibly limiting soil factor in the area is rock outcrop and the depth to a restrictive layer. The hardness of the restrictive layer varies from weakly coherent to indurated depending on the map unit. There is a moderate to high potential for steel corrosion and low potential for concrete corrosion the area. There are no hydric soils, which can be indicators of wetlands. There are a few areas with occasional flooding.

Enclosed are two Web Soil Survey reports labeled “North” and “South”, illustrating the location of the soils as well as the ratings for related interpretations that are described above. We encourage you to consider this information during the construction of the proposed transmission line and substation and take measures to protect the soils and water quality.

If you have further questions, please contact me at (254) 742-9951 or by email at chris.holle@usda.gov.

Sincerely,

CHRIS HOLLE
USDA/NRCS

Attachments: AEP Texas Alamito Creek to Fort Davis-North_Soil_Report
AEP Texas Alamito Creek to Fort Davis-South_Soil_Report

United States Department of Agriculture

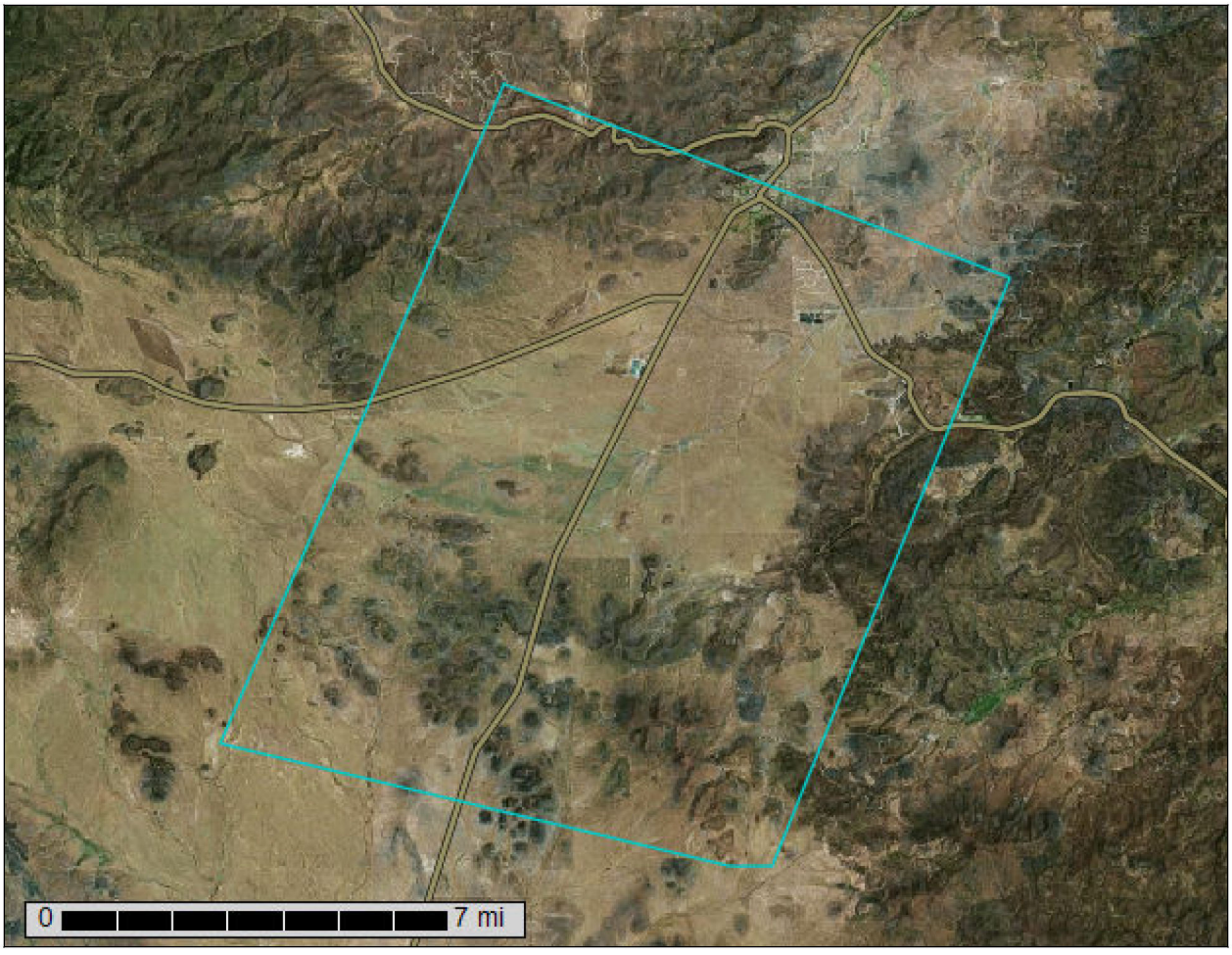
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Jeff Davis County, Texas

AEP Texas Alamito Creek to Fort Davis - North



October 17, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

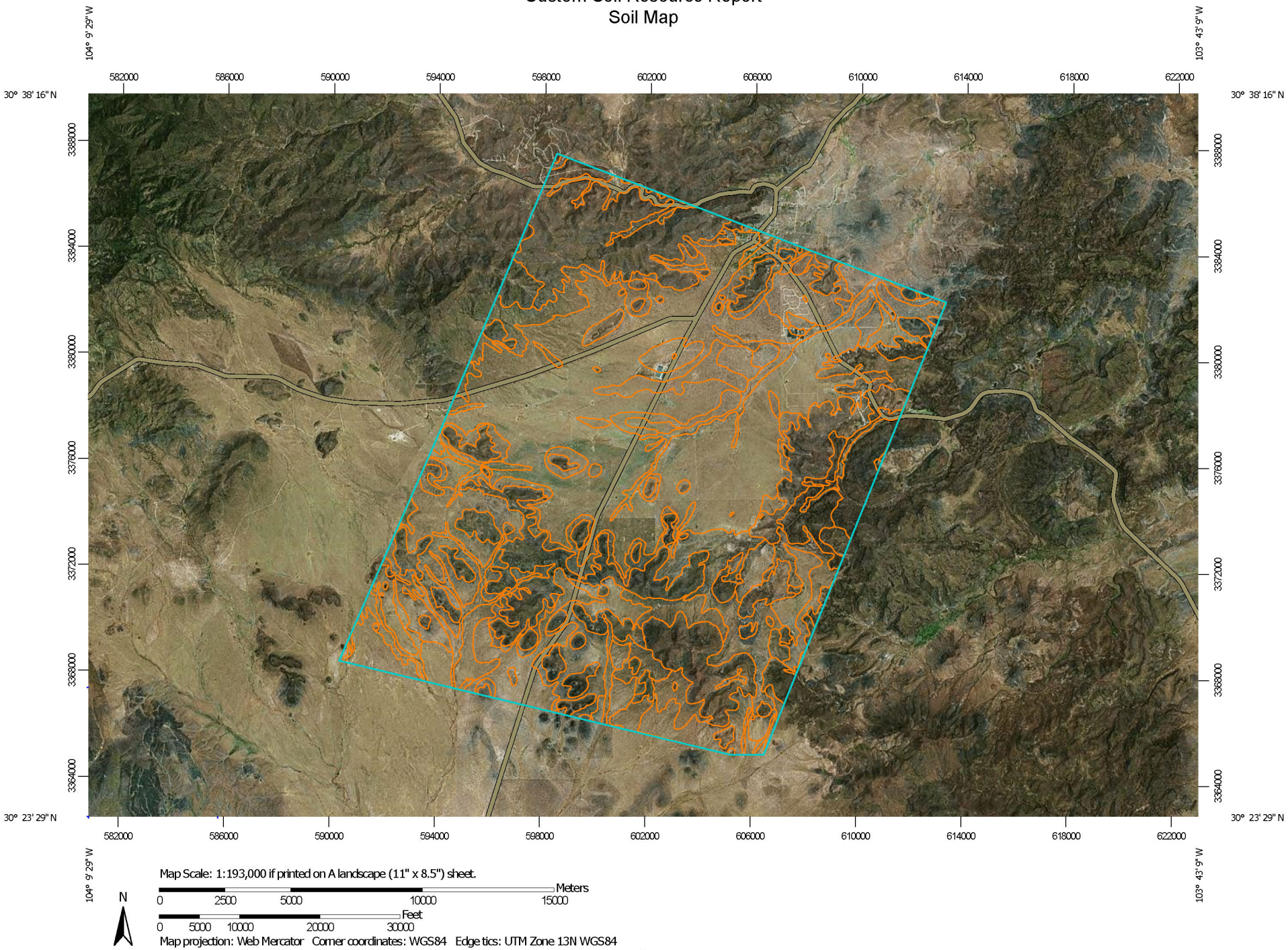
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:31,700.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jeff Davis County, Texas
Survey Area Data: Version 24, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeB	Boracho-Espy complex, 1 to 8 percent slopes	10,827.1	13.8%
BrF	Brewster-Rock outcrop association, steep	4,478.0	5.7%
BsE	Brewster association, hilly	12,583.0	16.1%
Ga	Bigetty association	3,513.0	4.5%
GP	Pits, gravel	11.5	0.0%
KbB	Kokernot-Brewster association, gently sloping	88.1	0.1%
LmB	Limpia and Mitre soils, gently sloping	1,481.1	1.9%
LrF	Liv-Mainstay-Rock outcrop association, steep	546.8	0.7%
MbE	Mainstay-Brewster association, hilly	5,367.7	6.9%
Mu	Musquiz clay loam, 0 to 3 percent slopes	25,580.8	32.7%
Re	Redona association	2,715.4	3.5%
Rh	Rockhouse association	9.5	0.0%
Rk	Rockhouse-Bigetty association	623.2	0.8%
RoF	Rock outcrop-Brewster association, steep	1,448.7	1.8%
SmB	Sanmoss-Medley complex, 1 to 5 percent slopes	8,208.0	10.5%
Ve	Verhalen clay	83.8	0.1%
Vm	Verhalen-Dalby association	748.8	1.0%
Totals for Area of Interest		**78,325.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class.

Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The

pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Jeff Davis County, Texas

BeB—Boracho-Espy complex, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2q8cv
Elevation: 4,500 to 6,700 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 59 to 61 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Boracho and similar soils: 60 percent
Espy and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boracho

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Gravelly alluvium derived from igneous rock

Typical profile

A - 0 to 7 inches: very gravelly loam
Bk - 7 to 12 inches: very gravelly loam
Bkkm - 12 to 22 inches: cemented material
BCk - 22 to 79 inches: very gravelly loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 70 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: D
Ecological site: R042AE281TX - Shallow, Mixed Prairie
Hydric soil rating: No

Description of Espy

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Gravelly alluvium derived from igneous rock

Typical profile

A - 0 to 7 inches: gravelly loam
Bk - 7 to 14 inches: gravelly loam
Bkkm - 14 to 26 inches: cemented material
BCk - 26 to 79 inches: very gravelly loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: 10 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 70 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: D
Ecological site: R042AE281TX - Shallow, Mixed Prairie
Hydric soil rating: No

Minor Components

Chilimol

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R042AE275TX - Gravelly, Mixed Prairie
Hydric soil rating: No

Murray

Percent of map unit: 5 percent
Landform: Fan remnants
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R042AE694TX - Loamy Slope, Mixed Prairie
Hydric soil rating: No

Pardo

Percent of map unit: 5 percent
Landform: Rock pediments