Environmental Assessment and Alternative Site Analysis for the Proposed Ranchtown Substation Bexar County, Texas

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ENVIRONMENTAL ASSESSMENT AND ALTERNATIVE SITE ANALYSIS FOR THE PROPOSED RANCHTOWN SUBSTATION BEXAR COUNTY, TEXAS

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Acronyms and Abbreviations

AACOG	Alamo Area Council of Governments
AOU	American Ornithologists' Union
BEG	Bureau of Economic Geology
BFZ	Balcones Fault Zone
CWS	Canadian Wildlife Service
DOI	U.S. Department of the Interior
EA	Environmental Assessment
ESA	Endangered Species Act
ETJ	Extraterritorial Jurisdiction
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
ft	feet/foot
FWS	U.S. Fish and Wildlife Service
HPA	high probability area
IH	Interstate Highway
ISD	Independent School District
kV	kilovolt
MW	megawatts
NDD	TPWD Natural Diversity Database
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
ROW	right-of-way
SAAS	San Antonio Audubon Society
SAL	State Archeological Landmark
SARA	San Antonio River Authority
SCS	Soil Conservation Service
SDHPT	State Department of Highways and Public Transportation
SH	State Highway
SWPPP	Storm Water Pollution Prevention Plan
TAMU	Texas A&M University
TARL	Texas Archeological Research Laboratory

TCEQ	Texas Commission on Environmental Quality
TEA	Texas Education Agency
THC	Texas Historical Commission
TPWD	Texas Parks and Wildlife Department
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WPA	Works Progress Administration
WPAP	Water Pollution Abatement Plans

1.0 DESCRIPTION OF THE PROPOSED PROJECT

1.1 SCOPE OF THE PROJECT

CPS Energy is planning to construct a new electric substation northwest of San Antonio and the Helotes area along State Highway (SH) 16 (Bandera Road) in Bexar County. The new substation will require an area of approximately 5 acres and will be connected to CPS Energy's existing Helotes to Menger 138-kilovolt (kV) transmission line. Figure 1-1 shows the location of the Ranchtown study area.

1.2 PURPOSE AND NEED

1.2.1 Capacity

The area northwest of Helotes is established and growing. To support the increasing need for electricity and to relieve the growing demand on existing substations, CPS Energy needs to increase the supply capacity. As a result, substation(s) must be expanded or constructed.

1.2.2 Distribution System

Networks of distribution lines connect substations to businesses and homes. The existing distribution infrastructure is nearing the limit of its capability, so more distribution lines must be built. The length of new lines should be minimized to reduce costs and construction impacts. Furthermore, shorter lines help the continual need to improve reliability and power quality.

1.2.3 Reliability and Power Quality

As a distribution line is extended over longer distance and as more customers are connected to the line, the reliability and quality of the electric service can decline. The longer the line, the more opportunity for electrical disturbances caused by squirrels, wind, trees, and other factors. Spreading the electric load (customers) among more, shorter distribution lines generally improves the reliability and the quality of power that customers receive. Furthermore, since it will be close to the customers being served, the new substation will improve distribution reliability and power quality in ways that cannot be achieved with the existing substations.

1.3 DESCRIPTION OF PROPOSED CONSTRUCTION

Details of the proposed installation will be determined after a site is selected. A general description is provided below.

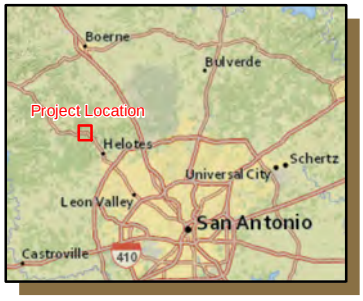

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Figure 1-1

STUDY AREA LOCATION
RANCHTOWN SUBSTATION PROJECT

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1.3.1 Substation Design

The substation will be designed as a three-unit site starting with two 50-MVA transformers and one four-feeder switchgear. The substation will be looped into the existing Helotes to Menger transmission line, requiring two 138-kV line terminals. It should include a 138-kV, 2000-A tie breaker, two 138-kV circuit switchers, and a 2000-A main bus design. The substation should be configured for future installation of three additional 138-kV line terminals and a 138-kV capacitor bank. Figure 1-2 shows an example of a substation, while figures 1-3 and 1-4 show an example of a high-voltage transmission line and a lower-voltage distribution line, respectively.

1.3.2 Construction Schedule

CPS Energy plans to construct the substation between September 2013 and June 2015. The schedule will be refined as the site is selected and engineering designs progress. The substation will be constructed by a combination of contractor and CPS Energy crews. Normal working hours will be Monday–Friday, 7:00 A.M. to 6:00 P.M., with the possibility of working on Saturdays, as needed, to maintain construction schedules.

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Figure 1-2

TYPICAL SUBSTATION

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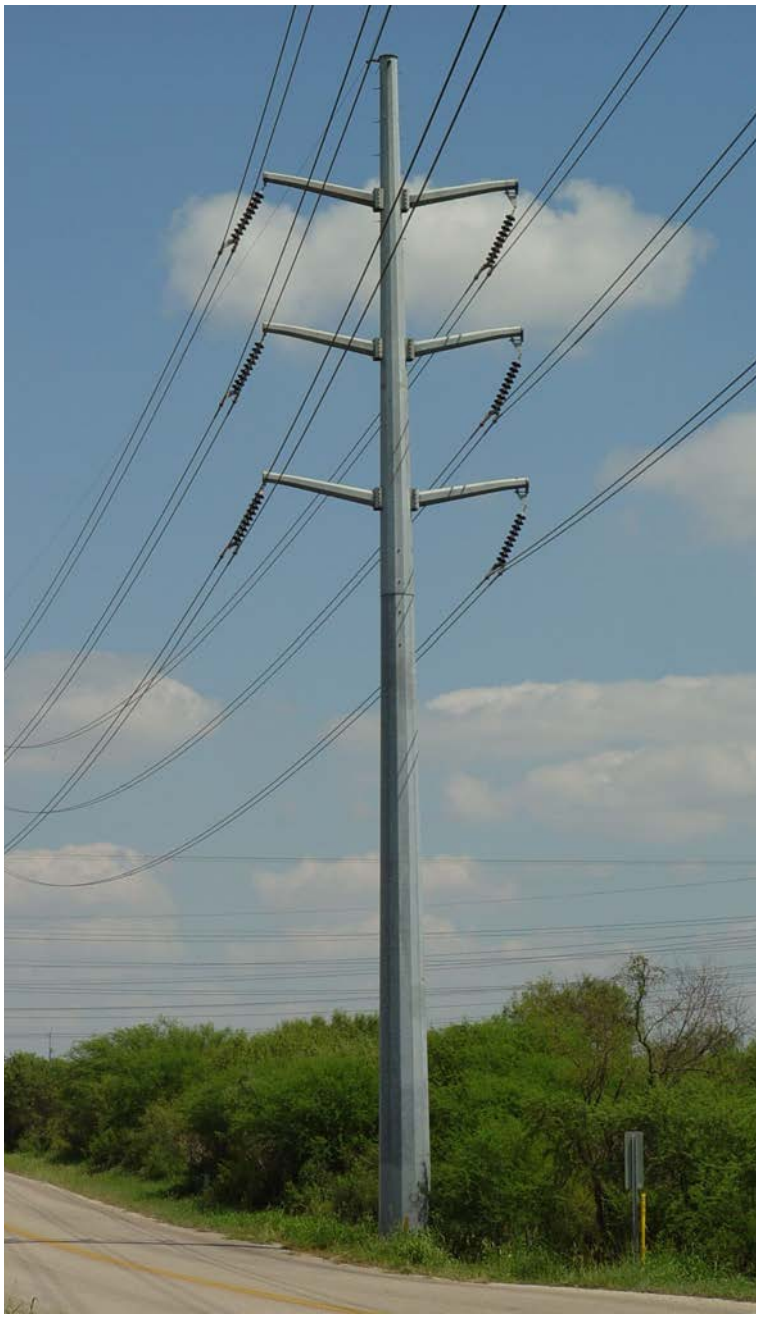

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Figure 1-3

TYPICAL TRANSMISSION LINE

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Figure 1-4

TYPICAL DISTRIBUTION LINE

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2.0 DEVELOPMENT AND EVALUATION OF ALTERNATIVE SITES

2.1 OBJECTIVE OF STUDY

The objective of this study was to develop and evaluate several potential substation sites and ultimately recommend a preferred site for CPS Energy's proposed Ranchtown Substation that is feasible from economic, engineering, system planning, and environmental standpoints. CPS Energy followed its previously established general procedures and methodology in the site-selection process. CPS Energy utilizes a multiphase approach for completing a project: define the study area; obtain environmental information; map environmental and land use constraints; identify potential sites; conduct public involvement; conduct environmental, engineering and cost analyses; evaluate the potential sites; select a preferred site; acquire the site; and design and construct the substation.

2.2 IDENTIFICATION OF POTENTIAL SITES

2.2.1 Study Area

To locate potential sites for the substation, CPS Energy first identified a study area large enough to capture a number of sites that might satisfy the needs described above. CPS Energy identified potential sites within the study area based on the following criteria:

Size of the site, based on needed capacity. To relieve the growing demand on existing substations and to provide a reliable electric supply in the Ranchtown area, approximately 5 acres will be needed to construct the new substation.

Location of the site, based on available electric supply. The existing Helotes to Menger 138-kV transmission line is the only convenient electric supply that is available to feed the new substation. To minimize the need both to construct new transmission structures and acquire new right-of-way (ROW) from landowners.

Location of the site, based on the distribution system. To create the best mix of more and shorter distribution lines, the new substation should be located near the existing 3-phase distribution lines (while being close to the existing transmission line).

2.2.2 Constraints Mapping

In an effort to minimize potential impacts to sensitive environmental and land use features, a constraints mapping process was used in identifying/developing/refining potential sites. The geographic locations of environmentally sensitive and other restrictive areas within the study area were located and considered during the site delineation. These constraints were mapped onto an aerial photography base map (Figure 2-1, map pocket).

2.2.3 Potential Sites

Utilizing the information described above, CPS Energy originally identified eight potential substation site locations (sites 1 through 8) for the project. These eight sites were presented to the general public at an open-house meeting held in Helotes in August 2012. As a result of the public meeting, CPS Energy added three additional sites for consideration. These 11 sites were subjected to an in-depth environmental evaluation by Atkins and CPS Energy. These 11 sites, together with their potential transmission/distribution lines, are shown on Figure 2-1 (map pocket). Figure 2-2 shows the eight potential sites presented at the open-house meeting, while Figure 2-3 shows the three additional potential sites as well as the original eight sites. Community values, existing and proposed land use, and areas of environmental concern, as well as electrical needs, were taken into consideration when developing these potential sites.

2.3 SITE EVALUATION

The evaluation of the 11 potential sites for the project involved studying a variety of environmental factors. The analysis of each site involved inventorying and tabulating the number or quantity of each environmental criterion (e.g., number of habitable structures within 300 ft, percent of site in upland woodland/brushland, etc.). The number or amount of each factor was determined by reviewing recent (2010) color aerial photography, U.S. Geological Survey (USGS) topographic maps (1:24,000), Texas Department of Transportation (TxDOT) county highway maps, U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory (NWI) maps, Federal Emergency Management Agency (FEMA) maps, San Antonio River Authority (SARA) maps, and by field verification from public access points. The environmental advantages and disadvantages of each potential site were then evaluated. Thirty environmental criteria were inventoried for each of the 11 potential sites for the project. These criteria are shown in Table 2-1.

TABLE 2-1
ENVIRONMENTAL CRITERIA FOR SITE EVALUATION
RANCHTOWN SUBSTATION

LAND USE
1. Number of habitable structures[1] within site footprint
2. Number of habitable structures[1] within 300 ft of site
3. Number of schools within 1,000 ft of site
4. Number of parks/recreational areas[2] in or within 1,000 ft of site
5. Number of FAA-registered airports within 20,000 ft of site
6. Number of private airstrips within 10,000 ft of site
7. Number of heliports within 5,000 ft of site
8. Number of commercial AM radio transmitters within 10,000 ft of site
9. Number of FM radio transmitters, microwave, and other electronic installations within 2,000 ft of site

TABLE 2-1, concluded

AESTHETICS

10. Is site within foreground visual zone[3] of Bandera Road (SH 16)?
11. Is site within foreground visual zone[3] of parks/recreational areas[2]?
12. Is site within foreground visual zone[3] of churches, schools, and cemeteries?

ECOLOGY

13. Percent of site in upland woodland/brushland
14. Percent of site in bottomland/riparian woodland
15. Percent of site in potential wetlands (including bottomland wetlands)
16. Is site in potential golden-cheeked warbler habitat?
17. Is site within 300 ft of potential golden-cheeked warbler habitat?
18. Is site in potential black-capped vireo habitat?
19. Is site within 300 ft of potential black-capped vireo habitat?
20. Is site in 100-year floodplain?
21. Is site in a karst zone[4]?
22. Is site in critical habitat unit for endangered karst invertebrate species?
23. Is site within 500 ft of a known karst feature?
24. Is site in Edwards Aquifer Recharge Zone[5]?
25. Is site in Edwards Aquifer Contributing Zone[6]?

CULTURAL RESOURCES

26. Number of recorded cultural resource sites within site
27. Number of recorded cultural resource sites within 1,000 ft of site
28. Number of National Register-listed, determined-eligible, or potentially eligible sites within site
29. Number of National Register-listed, determined-eligible, or potentially eligible within 1,000 ft of site
30. Percent of site in areas of high archeological/historical site potential

[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis.

[2] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church.

[3] One-half mile, unobstructed.

[4] **Karst Zone 1**: Areas known to contain endangered karst invertebrate species; **Karst Zone 2**: Areas having a high probability of suitable habitat for endangered karst invertebrate species; **Karst Zone 3**: Areas that probably do not contain endangered karst invertebrate species; **Karst Zone 4**: Areas that require further research but are generally equivalent to Zone 3; sections could be classified as Zone 2 or Zone 5 as more information becomes available.

[5] Water Pollution Abatement Plan (WPAP) required.

[6] Contributing Zone Plan required if more than 5 acres of disturbance (including access roads).

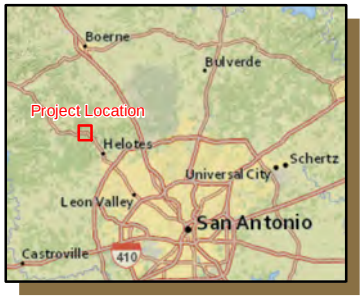

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Figure 2-2

POTENTIAL SUBSTATION SITES
AS PRESENTED AT THE OPEN HOUSE
RANCHTOWN SUBSTATION PROJECT

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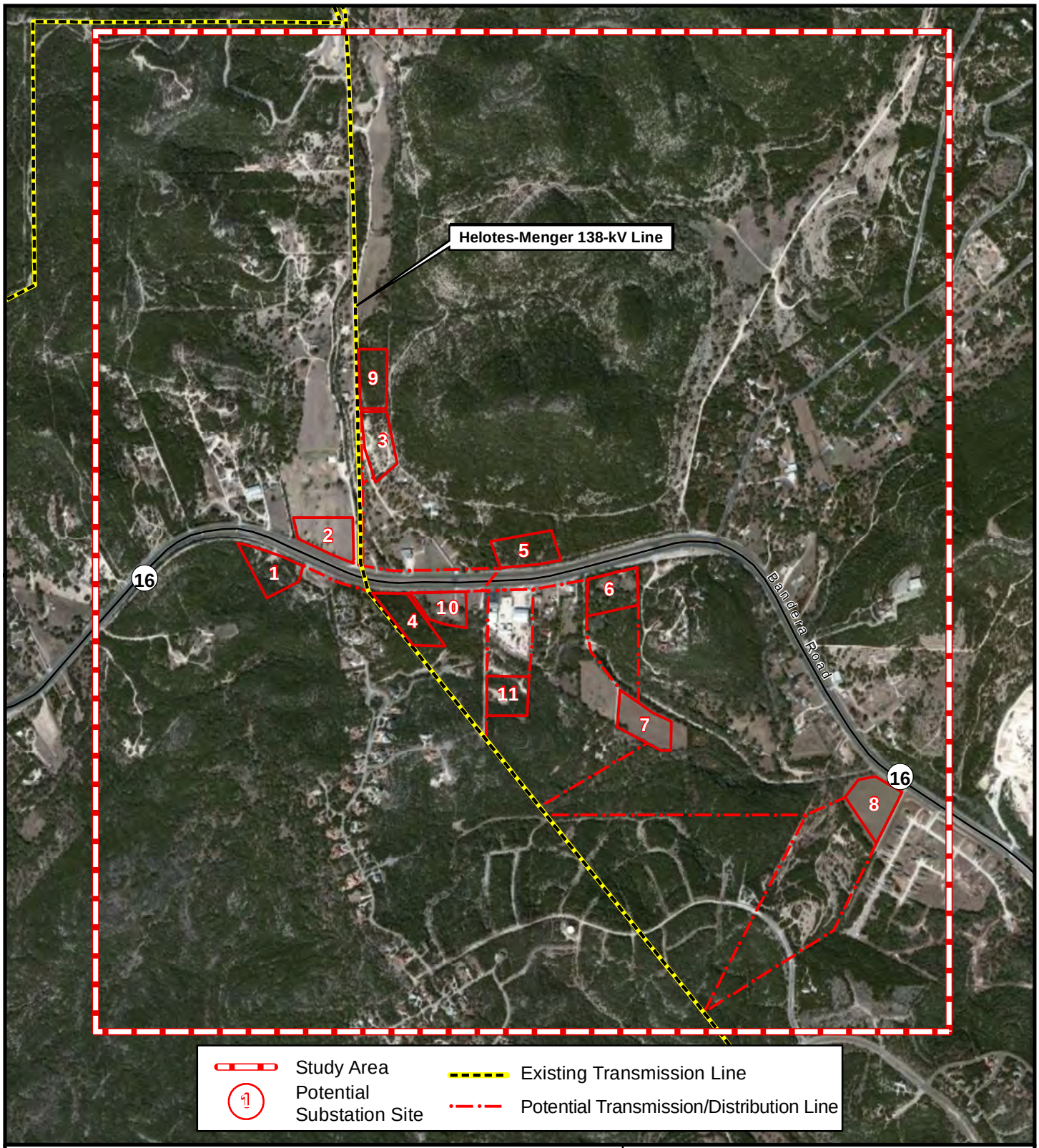

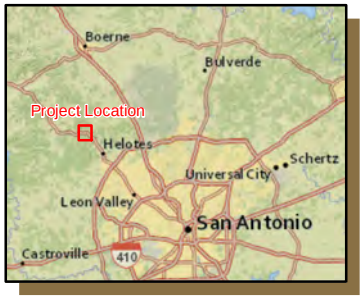

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Figure 2-3

POTENTIAL SUBSTATION SITES
AFTER THE OPEN HOUSE
RANCHTOWN SUBSTATION PROJECT

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3.0 ENVIRONMENTAL SETTING

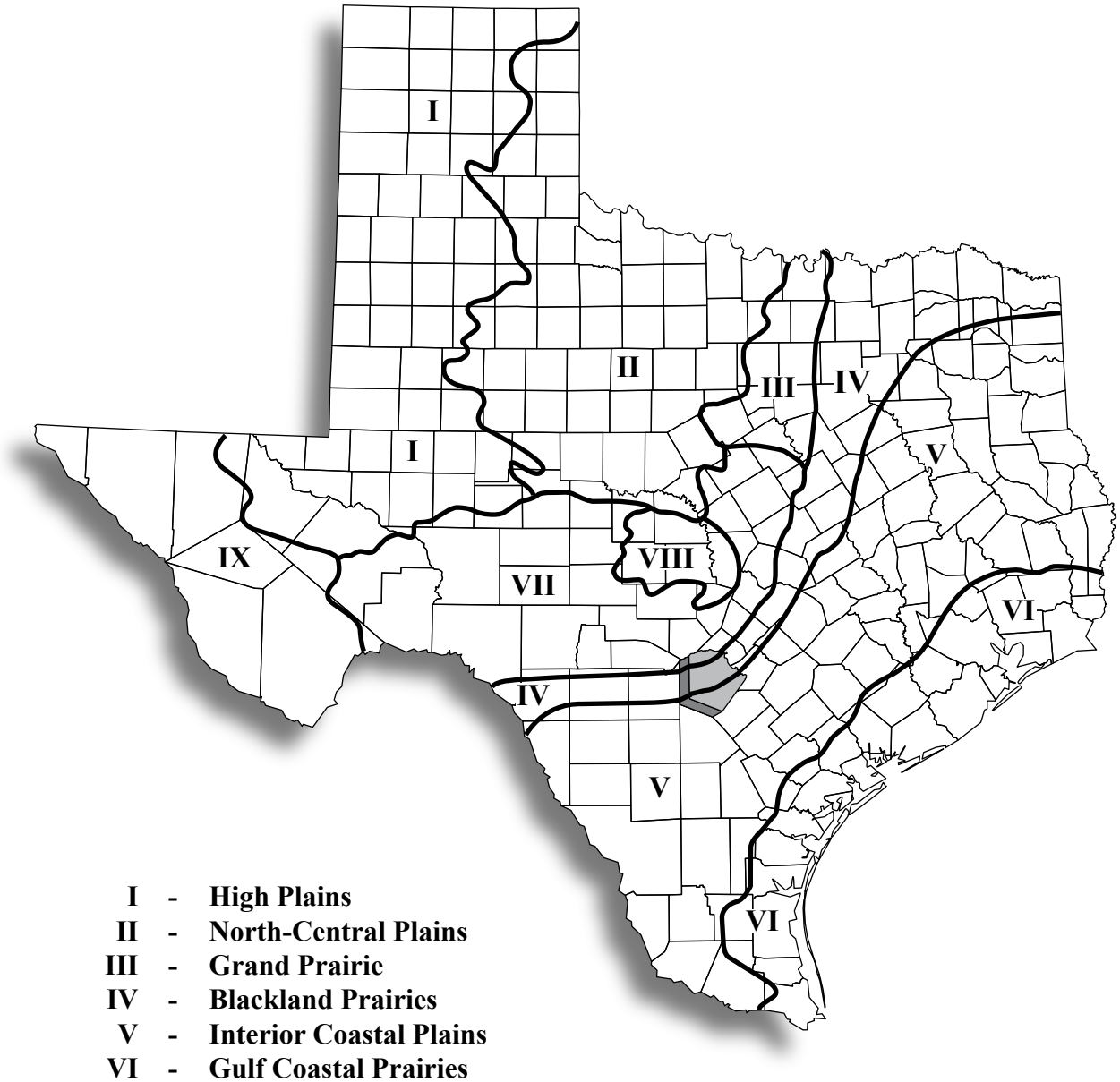
3.1 PHYSIOGRAPHY

The study area occurs northwest of San Antonio in northwestern Bexar County, Texas. Bexar County falls within a portion of three physiographic provinces of Texas: the Edwards Plateau, Blackland Prairies, and Interior Coastal Plains (Figure 3-1). The study area itself lies within the Edwards Plateau physiographic province, close to its southern border with the Blackland Prairies physiographic province. The Blackland Prairies physiographic province extends as a thin strip along the inner margin of the Interior Coastal Plains from near Uvalde in South Texas to the Oklahoma state line northeast of Dallas; the Edwards Plateau physiographic province lies just to the north (Bureau of Economic Geology [BEG], 1996). The region, known locally as the Hill Country, is characterized by plateaus, hills and rolling plains that are highly dissected by numerous, steep-walled, spring-fed streams, and rivers. This type of topography, a limestone plateau marked with fractures, sinkholes, and honeycombed rock formations underlain with caves and underground streams/aquifers, is known as karst. Elevations across the study area range from approximately 1,700 ft in the northwestern portion down to 1,150 ft in the southeastern portion.

3.2 GEOLOGY

Examination of the "Geologic Atlas of Texas, San Antonio Sheet" (BEG, 1974), indicates that the southern half of the study area, as well as the hilltops in the northern portion of the study area, are situated on Edwards Limestone (Ked). Low terrace deposits (Qat) comprise the Los Reyes Creek corridor, from the northwest portion of the study area down to the southeast portion, and the sloping hillsides throughout the study area are made up of the Glen Rose Formation (Kgru). The Tectonic Map of Texas (BEG, 1997) indicates that the study area is located within the Balcones Fault Zone (BFZ) and the aforementioned Geologic Atlas of Texas shows a fault mapped within the study area. A fault line extends from the southwestern portion of the study area, in Government Canyon State Natural Area (SNA), northeastward to near the intersection of SH 16 and Chimney Creek Road and out the study area's eastern boundary. Along this fault line, the upthrown side is to the west and the downthrown side is to the east (BEG, 1974).

The Glen Rose Formation is made up of dolomite, limestone, and marl, aligned in alternating beds that form "stairstep" topography approximately 400 ft thick. The Edwards Limestone formation consists of fine- to coarse-grained limestone, with abundant chert, and includes numerous marine fossils. The formation is typically 300 to 500 ft thick, and color ranges from medium gray to grayish brown. Low terrace deposits are typical along entrenched streams above flood level, and are composed of gravel, sand, silt, clay, and organic material (BEG, 1974).



I - High Plains
II - North-Central Plains
III - Grand Prairie
IV - Blackland Prairies
V - Interior Coastal Plains
VI - Gulf Coastal Prairies
VII - Edwards Plateau
VIII - Central Texas Uplift
IX - Trans-Pecos Basin & Range

north

100 0 100

scale in miles

Source: BEG (1996)

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Figure 3-1

LOCATION OF BEXAR COUNTY
IN RELATION TO THE
PHYSIOGRAPHIC PROVINCES OF TEXAS

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3.3 SOILS

3.3.1 Soil Associations

The study area occurs within one soil association and two types of clay: the Brackett-Eckrant association, Krum clay, and Eckrant cobbly clay. In addition, much of the study area is composed of Eckrant-Rock outcrops (Natural Resources Conservation Service [NRCS], 2012a).

Brackett-Eckrant Association

This association, which occurs throughout the majority of the study area, dominates the uplands in the northern and eastern parts of the study area. This general area in Bexar County, referred to as the Edwards Plateau, is dissected by many creeks and streams. The only areas in the northern half of the study area that are not composed of this soil composition are the drainages associated with Los Reyes Creek. The Brackett-Eckrant association consists predominantly of Brackett soils (approximately 60%) mixed with Eckrant soils (approximately 40%), on the tops and upper slopes of ridges at a 20 to 60% grade. The association is strongly calcareous, with 8 to 90% calcium carbonate content, and consists of gravelly clay loam 12 to18 inches deep with underlying bedrock. The soils in the association are nonarable and are best suited for native grass, as they are well drained and prone to erosion (NRCS, 2012a). The Brackett-Eckrant association typically is found at areas of 1,000- to 2,400-ft elevation and 22 to 32 inches of annual precipitation. Residential areas are expanding northward and westward from San Antonio into this association, much of which is now urban or is included in planned urban development.

Krum Clay

This type of clay exists as part of a continuous belt extending from the northwest portion of the study area to the southeastern part of the study area in the natural drainages that make up Los Reyes Creek. The clay, which is typically found at elevations ranging from 600 to 1,300 ft and in areas of 26 to 36 inches of annual precipitation, is well drained and up to 50% calcium carbonate (NRCS, 2012a).

Eckrant Cobbly Clay

This type of clay is primarily found in the southwest portion of the study area, associated with Government Canyon SNA. The clay, which is typically found at elevations ranging from 1,000 to 2,400 ft and in areas of 22 to 32 inches of annual precipitation, is well drained and only up to 8% calcium carbonate. The clay is typically 18 inches thick above bedrock, with cobbly clay in the shallowest 10 inches and extremely stony clay loam underneath (NRCS, 2012a).

Eckrant-Rock outcrop complex

The remainder of the study area is made up of the Eckrant-Rock outcrop complex, with well-drained ridges as the primary landform at a 15 to 60% slope. This complex typically occurs at 300 to 8,700 ft in elevation, in areas with anywhere from 10 to 35 inches of mean annual precipitation. Eckrant soils make up 75% of the association, with 17% rock outcrops and 8% minor components (NRCS, 2012a).

3.3.2 Prime Farmland Soils

Prime farmland soils are defined by the Secretary of Agriculture in 7 CFR, Part 657 (Federal Register, Vol. 43, No. 21) as those soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. They have the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. Additional potential prime farmland are those soils that meet most of the requirements of prime farmland but fail because they lack sufficient natural moisture or they lack the installation of water management facilities. Such soils would be considered prime farmland if these practices were installed. According to the NRCS (2012a, 2012b), approximately 33.4% (268,616 acres) of Bexar County contains prime farmland soils with an additional 17.5% (222,005 acres) containing prime farmland soils if irrigated. No prime farmland soils occur within the study area; however, Krum clay does exist within the study area, and this soil is categorized as prime farmland if irrigated (NRCS, 2012a, 2012b). This soil can be found as a belt from the northwestern portion to the southeastern portion of the study area, and is associated with natural stream drainages.

3.4 WATER RESOURCES

3.4.1 Surface Water

The study area lies within the San Antonio River basin, which has a total drainage area of 4,180 square miles. It is bounded on the north and east by the Guadalupe River basin, and on the west and south by the Nueces River basin and the San Antonio-Nueces Coastal basin (Texas Water Development Board [TWDB], 1997). Surface water runoff in the study area drains into Los Reyes Creek, which drains into, in order: Helotes Creek; Culebra Creek; Leon Creek; the Medina River; and the San Antonio River. The San Antonio River then eventually drains to the Gulf of Mexico.

3.4.2 Floodplains

According to the Bexar County Flood Insurance Rate Map (FEMA, 2012) and SARA (2012), the majority of the study area is situated outside the 100-year floodplain. However, the drainages and tributaries associated with Los Reyes Creek within the study area are designated as 100-year

floodplain. Because of the steep topography of the study area, these floodplains are relatively narrow.

3.4.3 Groundwater

According to the TWDB (1995), the principal groundwater-bearing units in the study area are the Edwards Aquifer and the underlying Trinity Aquifer. The Edwards Aquifer, composed predominantly of limestone formed during the early Cretaceous period, consists of Georgetown Limestone, formations of the Edwards Group (the primary water-bearing unit) and Comanche Peak Limestone. Thickness ranges from 200 to 600 ft (TWDB, 1995). Recharge to the aquifer occurs primarily by the downward percolation of surface water from streams draining off the Edwards Plateau located farther to the northwest and by direct infiltration of precipitation on the outcrop. This recharge reaches the aquifer through crevices, faults, and sinkholes in the unsaturated zone. Water in the aquifer generally moves from the recharge zone toward natural discharge points such as springs. Water is also discharged artificially from hundreds of pumping wells, particularly municipal supply wells in the San Antonio region and irrigation wells in the western extent (TWDB, 1995).

The Edwards Aquifer is divided into three zones: the contributing zone, the recharge zone, and the artesian zone. While the artesian zone is south of the study area and nearer to San Antonio, the study area is split between the contributing zone and the recharge zone. The contributing zone, comprising everything north of SH 16 in the study area as well as some area south of SH 16, collects water from rainfall that runs from streams into the recharge zone. The recharge zone, comprising the southern portion of the study area, has many solution features in the Edwards Limestone like faults and fractures that allow large quantities of water to flow into the aquifer.

Below the Edwards Aquifer are the water-bearing strata of the Cretaceous-age Trinity Aquifer, which have been subdivided into the following formations (youngest to oldest): the Upper Trinity Aquifer, consisting of the Paluxy Formation; the Middle Trinity Aquifer, consisting of the upper and lower members of the Glen Rose Formation; and the Lower Trinity Aquifer, consisting of the Twin Mountains-Travis Peak Formation. The primary mechanism of recharge to the Upper Trinity is vertical infiltration of water on the outcrop from rainfall. Discharge from the aquifer occurs from water well withdrawals and springs located within streams. Groundwater yields in the Trinity Aquifer vary significantly depending on the porosity and permeability of the strata (TWDB, 1995). Up to 10% of the annual amount of recharge to the Edwards Aquifer comes from this aquifer, and recharge of the Trinity Aquifer is much slower, partially due to the slow movement of water. The study area is over both the outcrop and downdip portions of this aquifer; the outcrop portion is everything in the northern portion of the study area, from just south of SH 16 northward, and the downdip portion is located in the southern portion of the study area. The downdip portion of the Trinity Aquifer is not advisable for wells, as the water is highly mineralized and considered unsuitable for drinking.

3.5 VEGETATION

3.5.1 Regional Vegetation

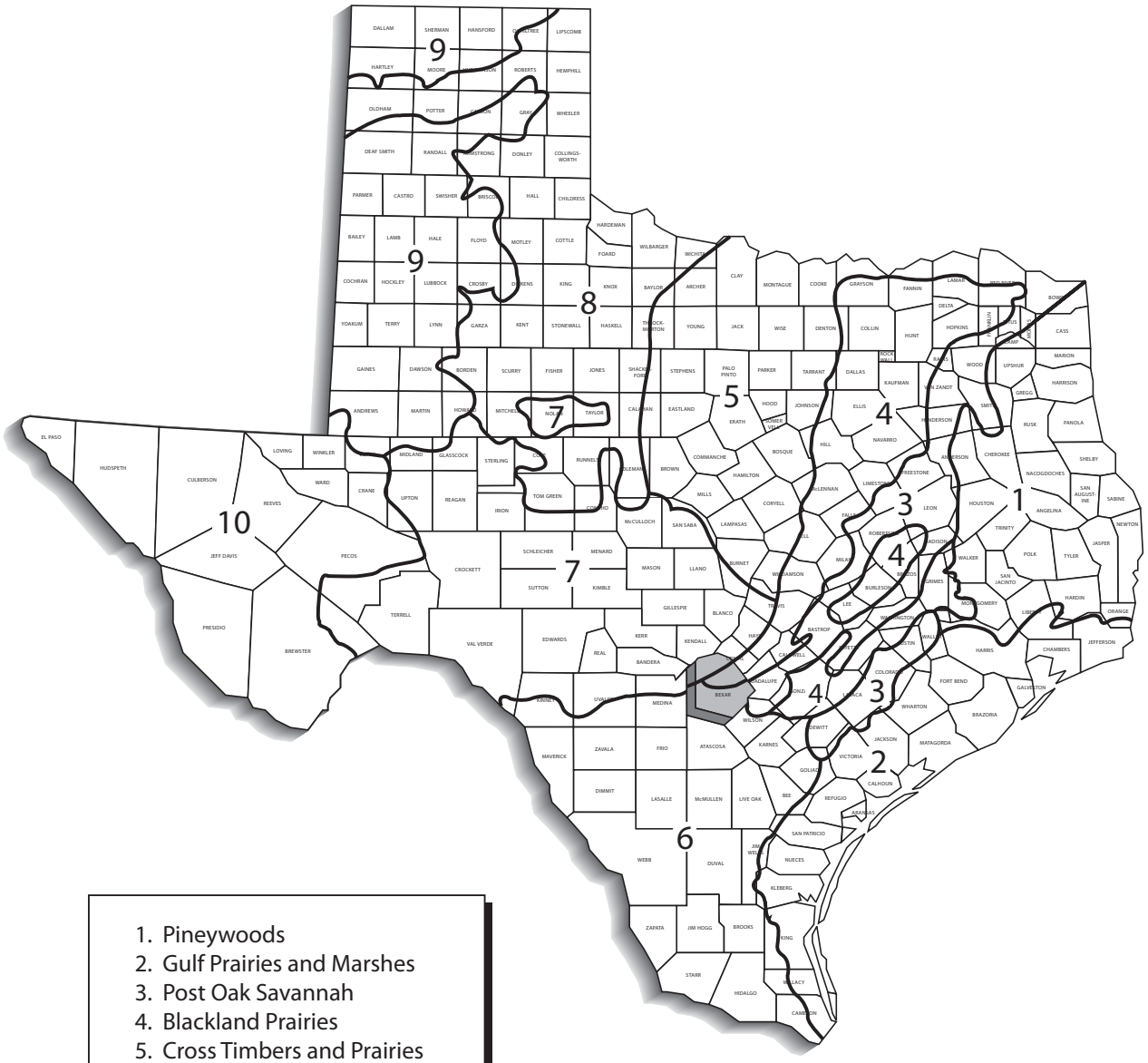
The study area lies near the junction of three vegetational areas, the Edwards Plateau, Blackland Prairies, and South Texas Plains, as delineated in Hatch et al. (1990) and shown on Figure 3-2. The Edwards Plateau vegetational area correlates to the area known as the Texas Hill Country. The climax vegetation of the Edwards Plateau is largely grassland or open savannah, although many brush and/or invader species have colonized the area. Average annual precipitation in the Edwards Plateau area ranges from 15 to 33 inches. Much of the region is in use as rangeland, with agricultural usage confined to deeper soils along floodplains and some divides (Hatch et al., 1990).

The Blackland Prairies represent the southern extension of the true prairie that occurs from Texas to Canada. Characteristics include nearly level to rolling, well-dissected terrain. The once-natural vegetation community of the Blackland Prairies was dominated by prairie grasses, interspersed with scattered tree species. Dominant species included little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), yellow indiangrass (*Sorghastrum nutans*), and tall dropseed (*Sporobolus compositus* var*. compositus*), with sideoats grama (*Bouteloua curtipendula*), hairy grama (*Bouteloua hirsuta*), and buffalograss (*Buchloe dactyloides*) as minor constituents. Almost the entire region is now cropland and pastureland (Hatch et al., 1990).

The South Texas Plains includes approximately 20 million acres of level to rolling land dissected by streams flowing to the Gulf of Mexico. Elevations range from sea level to approximately 1,000 ft above mean sea level (msl). Average annual precipitation ranges from 16 to 35 inches, occurring mostly in the spring and fall. Summers often experience drought conditions that are frequently of sufficient duration to depress crop growth (Hatch et al., 1990).

3.5.2 Vegetation in the Study Area

Much of the natural vegetation in the study area is live oak/Ashe-juniper woodland, although riparian habitat associated with Los Reyes Creek also occurs. Plateau live oak (*Quercus virginiana* var. *fusiformis*) and Ashe juniper (*Juniperus ashei*) are the dominant canopy species, with honey mesquite (*Prosopis glandulosa*), shin oak (*Quercus havardii*), Texas oak (*Quercus texana*), cedar elm (*Ulmus crassifolia*), and netleaf hackberry (*Celtis laevigata* var. *reticulata*) occurring in lesser numbers. The degree of canopy coverage is dependent upon the amount of brush/tree clearing that has taken place. Shrubby understory species include Texas kidneywood (*Eysenhardtia texana*), Texas persimmon (*Diospyros texana*), huisache (*Acacia farnesiana* var. *farnesiana*), retama (*Parkinsonia aculeata*), elbowbush (*Forestiera pubescens*), prairie sumac (*Rhus lanceolata*), evergreen sumac (*Rhus virens*), Texas mountain laurel (*Sophora secundiflora*), American beautyberry (*Callicarpa americana*), bluewood or brasil (*Condalia hookeri*), and agarito (*Berberis trifoliata*). Pricklypears (*Opuntia* spp.) and twist-leaf yucca (*Yucca rupicola*) are also present.



Source: Hatch et al. (1990)

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Figure 3-2

LOCATION OF BEXAR COUNTY
IN RELATION TO THE
VEGETATIONAL AREAS OF TEXAS

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Grassland species in the study area include gramas (*Bouteloua* spp.), curlymesquite (*Hilaria belangeri*), little bluestem, King Ranch bluestem (*Bothriochloa ischaemum*), buffalograss, bermudagrass (*Cynodon dactlyon*), beargrass (*Nolina* sp.), johnsongrass (*Sorghum halepense*), threeawns (*Aristida* spp.), brome grasses (*Bromus* spp.), panicums (*Panicum* spp.), paspalums (*Paspalum* spp.), and species of *Tridens*. Forbs present in the grassland community include common sunflower (*Helianthus annuus*), arrowleaf sida (*Sida rhombifolia*), vervain (*Verbena* sp.), frog-fruit (*Phyla* sp.), and croton (*Croton* sp.).

As noted above, limited streamside communities (bottomland/riparian vegetation) are also in the study area. These communities are associated with Los Reyes Creek, and several minor unnamed tributaries. Los Reyes Creek runs from the northwestern to the southeastern portion of the study area. Species associated with the streamside communities include American sycamore (*Platanus occidentalis*), cottonwood (*Populus deltoides*), sugar hackberry (*Celtis laevigata*), cedar elm, Chinese tallow (*Sapium sebiferum*), and chinaberry (*Melia azedarach*). Grasses occurring in riparian habitats in the study area include switchgrass (*Panicum virgatum*), Canada wild-rye (*Elymus canadensis*), and Lindheimer muhly (*Muhlenbergia lindheimeri*). Disturbed areas are characterized by such species as false willow (*Baccharis* sp.), switchgrass (*Panicum virgatum*), and ragweed (*Ambrosia* sp.).

Hydric and aquatic vegetation also occurs in the study area, particularly in association with Los Reyes Creek. Hydric habitat includes small marshy areas that fringe the edges of creeks, impoundments, and topographically low areas. These habitats typically support such species as sedges (*Carex* spp.), flatsedges (*Cyperus* spp.), rushes (*Juncus* spp.), and smartweeds (*Polygonum* spp.). Woody species commonly occurring include black willow (*Salix nigra*), common buttonbush (*Cephalanthus occidentalis*), and rattlebush (*Sesbania* sp.). Hydric habitats in the study area may be defined as jurisdictional wetlands by the U.S. Army Corps of Engineers (USACE). If these areas meet the criteria necessary to define them as jurisdictional wetlands pursuant to Section 404 of the Clean Water Act, certain activities (e.g., placement of fill) within these areas are subject to regulation.

Aquatic habitat is very limited in the study area. It includes those areas that are predominantly water-covered (e.g., lakes, rivers, ponds, and major streams). Aquatic and hydric-adapted species found within aquatic habitats in the study area may include pondweeds (*Potamogeton* spp.), cattail (*Typha* sp.), black willow, spikerushes (*Eleocharis* spp.), and sedges. Marshy and aquatic habitats that occur along the water's edge are important primarily because of their value as feeding, breeding, nesting, and sheltering areas for wildlife.

No native plant species within the study area are particularly valuable commercially. Juniper may be cut locally for fence posts, and some hardwood trees, such as oaks, may be important for firewood. A number of plant species are used as browse or forage materials for wildlife and livestock, and could therefore be considered important. Browse and forage plants include acacia

(*Acacia* spp.), hackberry (*Celtis* spp.), Texas persimmon, honey mesquite, and greenbriars (*Smilax* spp.), along with numerous forbs.

3.6 FISH AND WILDLIFE

3.6.1 Fish and Wildlife Habitats and Species

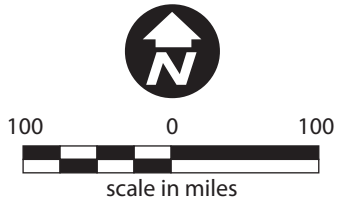
Blair (1950) delineated seven biotic provinces within Texas. The study area lies near the junction of two of these provinces: the Balconian Biotic Province and the Tamaulipan Biotic Province (Figure 3-3). The faunal communities of the Balconian Biotic Province are a composite of eastern forest species and western grassland species. This province closely coincides with the Edwards Plateau as described by Hatch et al. (1990). Wildlife habitats within the study area generally correspond to vegetation types described in Section 3.5.2 and include upland woodland/brushland, riparian/ bottomland woodland, grassland, and hydric/aquatic areas. Given the urban nature of some portions of the study area, some of the wildlife species in the study area are typical of those encountered in commercial and residential areas.

Aquatic habitats within the study area are largely limited to Los Reyes Creek, which runs from the northwestern to the southeastern portion of the study area, and several minor unnamed tributaries. Because these streams area are frequently low for a substantial portion of the year, the species that can utilize them are restricted either to those having some adaptation to surviving dry periods or to species adapted to rapidly recolonizing disturbed habitats.

Fish species in the study area are probably restricted because of the limited permanent water. Typical species of intermittent and smaller permanent creeks include forage fish assemblages dominated by minnows (*Notropis* spp.) that serve as a food resource for predatory species. Fish communities in pool areas tend to be heavily dominated by centrarchids. The bluegill (*Lepomis macrochirus*), longear sunfish (*Lepomis megalotis*), and redear sunfish (*Lepomis microlophus*) may be present in the study area when sufficient water is present.

Amphibian species (salamanders, newts, frogs, and toads) of potential occurrence within the study area include the eastern cricket frog (*Acris crepitans crepitans*), Texas toad (*Anaxyrus speciosus*), cliff chirping frog (*Eleutherodactylus marnockii*), Great Plains narrow-mouthed toad (*Gastrophryne olivacea*), Cope's gray treefrog /gray treefrog (*Hyla chrysoscelis/versicolor*), Rio Grande leopard frog (*Lithobates berlandieri*), American bullfrog (*Lithobates catesbeiana*), Gulf Coast toad (*Ollotis nebulifer*), spotted chorus frog (*Pseudacris clarkii*), and Couch's spadefoot (*Scaphiopus couchii*) (Bartlett and Bartlett, 1999; Dixon, 2000; Crother, 2008).

Reptiles (lizards, snakes, and turtles) of potential occurrence in the study area include lizard species such as the green anole (*Anolis carolinensis*), Texas spotted whiptail (*Aspidoscelis gularis gularis*), Texas greater earless lizard (*Cophosaurus texanus texanus*), Texas alligator lizard



ATKINS

Figure 3-3

LOCATION OF BEXAR COUNTY
IN RELATION TO THE
BIOTIC PROVINCES OF TEXAS

Source: Blair, 1950

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(*Gerrhonotus infernalis*), short-lined skink (*Plestiodon tetragrammus brevilineatus*), prairie lizard (*Sceloporus consobrinus*), Texas spiny lizard (*Sceloporus olivaceus*), and little brown skink (*Scincella lateralis*) (Bartlett and Bartlett, 1999; Dixon, 2000; Crother, 2008).

Snakes of potential occurrence within the study area include the eastern yellow-bellied racer (*Coluber constrictor flaviventris*), western coachwhip (*Coluber flagellum testaceus*), Texas ratsnake (*Pantherophis obsoletus*), Texas patch-nosed snake (*Salvadora grahamiae lineata*), flat-headed snake (*Tantilla gracilis*), checkered gartersnake (*Thamnophis marcianus*), and venomous species such as the Texas coralsnake (*Micrurus tener*) and western diamond-backed rattlesnake (*Crotalus atrox*) (Tennant, 1998; Dixon, 2000; Werler and Dixon, 2000; Crother, 2008).

Avian species in the study area are a combination of rural species and urban species. Resident avian species encountered by Atkins in the study area include the black vulture (*Coragyps atratus*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferus*), white-winged dove (*Zenaida asiatica*), mourning dove (*Zenaida macroura*), golden-fronted woodpecker (*Melanerpes aurifrons*), downy woodpecker (*Picoides pubescens*), eastern phoebe (*Sayornis phoebe*), blue jay (*Cyanocitta cristata*), western scrub-jay (*Aphelocoma californica*), common raven (*Corvus corax*), Carolina chickadee (*Poecile carolinensis*), black-crested titmouse (*Baeolophus atricristatus*), Carolina wren (*Thryothorus ludovicianus*), Bewick's wren (*Thryomanes bewickii*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), rufous-crowned sparrow (*Aimophila ruficeps*), lark sparrow (*Chondestes grammacus*), northern cardinal (*Cardinalis cardinalis*), great-tailed grackle (*Quiscalus mexicanus*), brown-headed cowbird (*Molothrus ater*), house finch (*Haemorhous mexicanus*), and house sparrow (*Passer domesticus*).

Summer residents encountered by Atkins in the study area include the study area include the yellow-billed cuckoo (*Coccyzus americanus*), greater roadrunner (*Geococcyx californianus)*, common nighthawk (*Chordeiles minor*), chimney swift (*Chaetura pelagica*), black-chinned hummingbird *(Archilochus alexandri),* ash-throated flycatcher *(Myiarchus cinerascens*), western kingbird (*Tyrannus verticalis*), scissor-tailed flycatcher (*Tyrannus forficatus*), purple martin (*Progne subis*), barn swallow (*Hirundo rustica*), summer tanager (*Piranga rubra*), blue grosbeak (*Passerina caerulea*), and painted bunting (*Passerina ciris*).

Winter residents expected to occur in the study area include the sharp-shinned hawk (*Accipiter striatus*), American kestrel (*Falco sparverius*), spotted sandpiper (*Actitis macularius*), northern flicker (*Colaptes auratus*), yellow-bellied sapsucker (*Sphyrapicus varius*), cedar waxwing (*Bombycilla cedrorum*), ruby-crowned kinglet (*Regulus calendula*), hermit thrush (*Catharus guttatus*), yellow-rumped warbler (*Dendroica coronata*), orange-crowned warbler (*Vermivora celata*), spotted towhee (*Pipilo maculatus*), white-throated sparrow (*Zonotrichia albicollis*), dark-eyed junco (*Junco hyemalis*), and American goldfinch (*Spinus tristis*) (Lockwood and Freeman, 2004; San Antonio Audubon Society [SAAS], 2004). Additional bird species would be expected to occur briefly in the study area during spring and fall migration.

Mammals expected to occur in the study area include the Virginia opossum (*Didelphis virginiana*), nine-banded armadillo (*Dasypus novemcinctus*), eastern cottontail (*Sylvilagus floridanus*), black-tailed jackrabbit (*Lepus californicus*), eastern fox squirrel (*Sciurus niger*), hispid pocket mouse (*Chaetodipus hispidus*), North American porcupine (*Erethizon dorsatum*), common gray fox (*Urocyon cinereoargenteus*), ringtail (*Bassariscus astutus*), northern raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), bobcat (*Lynx rufus*), and white-tailed deer (*Odocoileus virginianus*) (Schmidly, 2004).

3.7 ENDANGERED AND THREATENED SPECIES

3.7.1 Endangered and Threatened Plant Species

Available information from the FWS, Texas Parks and Wildlife Department (TPWD), and TPWD's Natural Diversity Database (NDD) was reviewed to identify endangered or threatened plant species of potential occurrence within the study area. No federal/state-listed species have been recorded from Bexar County (Poole et al., 2000; FWS, 2012; TPWD, 2012a). However, FWS includes the federally listed endangered Texas wild-rice (*Zizania texana*) on its Bexar County list. This species is endemic to Hays County, but FWS includes it on its Bexar County list only because activities within the southern segment of the Edwards Aquifer, which includes Bexar County, may affect it. Texas wild-rice does not occur in the study area and no discussion of the species is included in this Environmental Assessment (EA).

3.7.2 Endangered and Threatened Fish and Wildlife Species

FWS and TPWD county lists of endangered and threatened species indicate that 37 federally and/or state-listed endangered, threatened, and candidate fish and wildlife species may occur in Bexar County (Table 3-1). It should be noted that inclusion in this table does not mean that a species is known to occur in the study area, but only acknowledges the potential for its occurrence. Only those species that FWS lists as endangered or threatened have federal protection under the Endangered Species Act (ESA).

In addition, FWS includes six endangered and threatened Edwards Aquifer fish and wildlife species on its Bexar County list. These species are endemic to Hays and/or Comal counties; however, FWS includes them because activities within the southern segment of the Edwards Aquifer, which includes Bexar County, may affect them. These are the federally listed endangered Comal Springs riffle beetle (*Heterelmis comalensis*), Comal Springs dryopid beetle (*Stygoparnus comalensis*), Peck's cave amphipod (*Stygobromus pecki*), fountain darter (*Etheostoma fonticola*), and Texas blind salamander (*Eurycea rathbuni*), as well as the federally listed threatened San Marcos salamander (*Eurycea nana*). None of these species occurs in the study area.

FWS and TPWD consider four of the Bexar County wildlife taxa listed in Table 3-1 as endangered: the whooping crane (*Grus americana*), interior least tern (*Sternula* [formerly *Sterna*] *antillarum*),

black-capped vireo (*Vireo atricapilla*), and golden-cheeked warbler (*Dendroica chrysoparia*). Additionally, FWS and TPWD consider one of the wildlife taxa in Table 3-1, the American black bear (*Ursus americanus*), as threatened.

TABLE 3-1
ENDANGERED AND THREATENED FISH AND WILDLIFE SPECIES OF KNOWN OR POTENTIAL OCCURRENCE IN BEXAR COUNTY, TEXAS[1]

Common Name[2]	Scientific Name[2]	Status[3]	
		FWS	TPWD
INVERTEBRATES			
Helotes mold beetle	*Batrisodes venyivi*	E	--
Comal Springs riffle beetle[4]	*Heterelmis comalensis*	E	--
Comal Springs dryopid beetle[4]	*Stygoparnus comalensis*	E	--
Ground beetle (no common name)	*Rhadine exilis*	E	--
Ground beetle (no common name)	*Rhadine infernalis*	E	--
Peck's cave amphipod[4]	*Stygobromus* (=*Stygonectes*) *pecki*	E	--
Robber Baron Cave meshweaver	*Cicurina baronia*	E	--
Madla's Cave meshweaver	*Cicurina madla*	E	--
Braken Bat Cave meshweaver	*Cicurina venii*	E	--
Government Canyon Bat Cave meshweaver	*Cicurina vespera*	E	--
Government Canyon Bat Cave spider	*Neoleptoneta microps*	E	--
Cokendolpher Cave harvestman	*Texella cokendolpheri*	E	--
MOLLUSKS			
Texas fatmucket	*Lampsilis bracteata*	C	T
Golden orb	*Quadrula aurea*	C	T
Texas pimpleback	*Quadrula petrina*	C	T
False spike mussel	*Quadrula mitchelli*	--	T
FISHES			
Fountain darter[4]	*Etheostoma fonticola*	E	E
Widemouth blindcat	*Satan eurystomus*	--	T
Toothless blindcat	*Trogloglanis pattersoni*	--	T
AMPHIBIANS			
Texas blind salamander[4]	*Eurycea (=Typhlomolge) rathbuni*	E	E
San Marcos salamander[4]	*Eurycea nana*	T	T
Cascade Caverns salamander	*Eurycea latitans*	--	T
Comal blind salamander	*Eurycea tridentifera*	--	T

TABLE 3-1 (Cont'd)

Common Name[2]	Scientific Name[2]	Status[3] FWS	Status[3] TPWD
REPTILES			
Texas tortoise	*Gopherus berlandieri*	--	T
Texas horned lizard	*Phrynosoma cornutum*	--	T
Texas indigo snake	*Drymarchon melanurus erebennus*	--	T
Timber/canebrake rattlesnake	*Crotalus horridus*	--	T
BIRDS			
Whooping crane	*Grus americana*	E	E
Least tern (interior subspecies)[5]	*Sternula antillarum*[5]	E	E
Black-capped vireo	*Vireo atricapilla*	E	E
Golden-cheeked warbler	*Dendroica chrysoparia*	E	E
Sprague's pipit	*Anthus spragueii*	C	--
Peregrine falcon	*Falco peregrinus*	DL	T
Zone-tailed hawk	*Buteo albonotatus*	--	T
White-faced ibis	*Plegadis chihi*	--	T
Wood stork	*Mycteria americana*	--	T
MAMMALS			
American black bear	*Ursus americanus*	T/SA;--[6]	T

[1] According to FWS (2012) and TPWD (2012a, 2012b).

[2] Nomenclature follows American Ornithologists' Union (AOU, 1998, 2000, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012), Hubbs et al. (2008), Crother (2008), Manning et al. (2008), FWS (2012), and TPWD (2012a).

[3] FWS – U.S. Fish and Wildlife Service; TPWD – Texas Parks and Wildlife Department; E – Endangered; T – Threatened; T/SA – Threatened because of similarity in appearance to another federally listed species; DL – Federally delisted; C – Candidate for federal listing; -- Not listed.

[4] These species are endemic to Hays and/or Comal counties; however, FWS includes them on its Bexar County list because activities within the southern segment of the Edwards Aquifer, which includes Bexar County, may affect them.

[5] The least tern has been reclassified from *Sterna* to *Sternula* (AOU, 2006)

[6] FWS identifies the American black bear as a threatened species because of its similarity in appearance to the federally listed threatened Louisiana black bear (*Ursus americanus luteolus*); however, the American black bear is federally threatened only within the historical range of the Louisiana black bear in eastern Texas and is not federally threatened elsewhere in Texas, including Bexar County.

The whooping crane is a large wading bird that in the last 50 years has returned from the brink of extinction. Only four wild populations of whooping crane exist, the largest of which is the Aransas-Wood Buffalo population, which breeds in Wood Buffalo National Park in northern Canada and migrates annually to Aransas National Wildlife Refuge (NWR) and adjacent areas of the central Texas coast in Aransas, Calhoun, and Refugio counties, where it winters (FWS, 1995, 2009; Lewis, 1995; Canadian Wildlife Service [CWS] and FWS, 2007). As of May 5, 2011, the four populations of whooping cranes in the wild totaled 414 birds; 279 in the Aransas-Wood Buffalo flock, 20 in the nonmigratory population in central Florida, 105 in the eastern population that migrates between Wisconsin and Florida, and 10 in the nonmigratory population released in Louisiana in February of 2011 (Whooping Crane Conservation Association, 2011). As of July 9, 2012, the Aransas-Wood Buffalo flock was estimated to be 245 birds, a drop of 12.2% (Whooping Crane Conservation Association, 2012). During migration, whooping cranes frequently stop over at wetlands and pastures to roost and feed. Whooping cranes have an unpredictable pattern of stopover habitat use and may not use the same stopover sites annually. Whooping cranes are diurnal migrants and often stop wherever they happen to be late in the day when they find conditions no longer suitable for migration. Thus, a few cranes could stop at a small farm pond or wetland for one night and rarely or never use the same location again. Some areas, however, are used on a regular basis and would be considered traditional stopover sites. Because of weather conditions, including strong winds that may blow the birds off course to the east or west, the whooping crane migration corridor may be more than 200 miles wide (FWS, 2009). The study area is located just outside the western edge of the regular migration corridor of this species; thus whooping cranes may, although unlikely, pass through the study area during migration.

In Texas, the interior least tern historically nested on sandbars of the Colorado River, Red River, and Rio Grande. At the present time, only small breeding populations exist at isolated locations within the species' historic range, although its winter range includes the entire Texas Gulf Coast. The interior least tern's preferred nesting habitat is unvegetated, frequently flooded sand flats, salt flats, sand and gravel bars, and sand, shell, and/or gravel beaches (Campbell, 1995; Thompson et al., 1997). With the manipulation of river hydrology (i.e., damming, water diversions, channelization, etc.), nesting habitat (e.g., sandbars and islands) are now scarce; thus, least terns have acclimated to using similar habitats such as gravel pits, coal mines, roof tops, and other areas consisting of large areas of bare ground typically associated with disturbances (Kasner and Slack, 2002). This tern is unlikely to occur in the study area except as a rare migrant.

The black-capped vireo is a rare to locally common summer resident in the Edwards Plateau, Cross Timbers and Prairies, and Trans-Pecos regions of Texas, where it nests in patchy shrubland/ brushland containing dense woody cover between ground level and approximately 6 ft. The composition of woody species is not as important as the structure, and species composing potential habitat vary throughout the species' range. Dominant tree and shrub species present in suitable breeding habitat may include various oaks (*Quercus* spp.), sumacs (*Rhus* spp.), Texas persimmon,

agarito, condalia (*Condalia* spp.), elbowbush, lotebush, and, occasionally, Ashe juniper and honey mesquite (Marshall et al., 1985; Grzybowski, 1995). The species is a rare and localized summer resident in Bexar County, but has not been recorded within the study area, with the closest known record being 2.2 miles southeast (TPWD, 2012b). It is of potential though unlikely occurrence in the study area due to lack of suitable habitat.

The golden-cheeked warbler is currently a rare to locally common summer resident in about 28 central Texas counties, which comprise the species' entire breeding range. The species is a habitat specialist, occurring only in oak-juniper woodlands that contain a dense deciduous canopy and mature Ashe junipers, the bark of which they use in nest construction. Common canopy species in suitable habitat include Ashe juniper, plateau live oak, Texas red oak (*Quercus buckleyi*), post oak (*Quercus stellata*), cedar elm, hackberries (*Celtis* spp.), Texas ash (*Fraxinus texensis*), and, occasionally, escarpment black cherry (*Prunus serotina*) and sycamore (Ladd and Gass, 1999). Suitable habitat typically occurs in areas of steep slopes, canyons, draws, and adjacent ridges and uplands (Ladd and Gass, 1999). The species is a rare and localized summer resident in Bexar County, and records exist within the study area (TPWD, 2012b).

Nine endangered obligate troglobites (cave-dwelling species) are of local distribution in caves in northern Bexar County. While federally listed as endangered, TPWD does not currently list them as endangered or threatened. They are the Helotes mold beetle (*Batrisodes venyivi*), two ground beetles (no common names – *Rhadine exilis* and *Rhadine infernalis*), Robber Baron Cave meshweaver (*Cicurina baronia*), Madla's Cave meshweaver (*Cicurina madla*), Braken Bat Cave meshweaver (*Cicurina venii*), Government Canyon Bat Cave meshweaver (*Cicurina vespera*), Government Canyon Bat Cave spider (*Neoleptoneta microps*), and Cokendolpher cave harvestmen (*Texella cokendolpheri*). These species are typically small and eyeless. As of February 2012, 518 caves are known to occur in Bexar County (Texas Speleological Survey [TSS], 2012), at least 74 of which contain known populations of at least one of the nine listed Bexar County karst invertebrates. Four karst zones occur in the study area. Zone 1, which occurs in the southern half of the study area (see Figure 2-1), consists of areas known to contain listed karst invertebrate species. Zone 2, which is scattered throughout the northern two-thirds of the study area, consists of areas having a high probability of containing habitat suitable for listed karst invertebrate species. Zone 3, which is also scattered throughout the northern two-thirds of the study area, consists of areas that probably do not contain endangered karst invertebrate species. Lastly, Zone 4, areas that require further research but are generally equivalent to Zone 3, although they may include sections that could be classified as Zone 2 or Zone 5 (which does not contain listed invertebrate karst species) as more information becomes available, are scattered within the northern portion of the study area. Listed karst invertebrates are known to occur in Madla's Drop Cave and Logan's Cave, which are in the eastern portion of the study area, and have the potential to occur in additional portions of the study area. Madla's Drop Cave is occupied by Madla's Cave meshweaver and the ground beetle *Rhadine infernalis*, while Logan's Cave is occupied by the ground beetles *Rhadine infernalis* and *Rhadine exilis* (77 FR 8450–8523, February 14, 2012).

Formerly widespread throughout the state, the American black bear (*Ursus americanus*) is now restricted to mountainous areas of the Trans-Pecos region and the far southwestern edge of the Edwards Plateau. The FWS designates the American black bear as threatened because of its similarity in appearance to the threatened Louisiana black bear (*Ursus americanus luteolus*). However, FWS considers the American black bear as threatened only within the historical range of the Louisiana subspecies in east Texas and does not identify it as threatened elsewhere in Texas, including Bexar County. Reports of black bears exist from Real, Uvalde, and Kerr counties (Taylor, 1990, 1993, 1994, 2000; McKinney, 2001) and historic records exist from the region. While the black bear may occasionally occur in the region, the species is highly unlikely to occur in the study area.

Table 3-1 includes four species that are federal candidates for listing: three mollusks, the Texas fatmucket (*Lampsilis bracteata*), golden orb (*Quadrula aurea*), and Texas pimpleback (*Quadrula petrina*); and one bird, Sprague's pipit (*Anthus spragueii*). Candidates are species for which reliable information exists indicating that listing may be warranted. Candidate species have no federal protection, however.

Due in part to long-term deterioration of water quality and overharvesting, many rare and endemic Texas mussel species are in decline. In November 2009, 15 of these mussel species were state-listed as threatened and several are candidates for federal listing under the ESA. The Texas fatmucket occurs in streams and rivers on sand, mud, and gravel in the San Antonio, Guadalupe, and Colorado river systems, with the Colorado River populations occurring at least as far west as Concho River tributaries in Tom Green County (Howells et al., 1996). In the past 30 years, natural and human-induced stressors have lead to the dramatic decline of this species and remaining populations are at risk from scouring floods, dewatering, and poor land management (TPWD, 2009). Since 1992, the Texas fatmucket has been reduced to six known sites (possibly only four remain), including Live Oak Creek in Gillespie County (Howells, 2010). The current known range of this species is outside of the study area, and it is highly unlikely that it would occur within the study area.

The golden orb occurs in the San Antonio, Guadalupe, Colorado, Brazos, Nueces, and Frio River systems (Howells et al., 1996). The habitat is largely unreported, with individuals being found in sand and gravel in some locations and mud at others, while having an intolerance of impoundment in most instances (TPWD, 2009). The golden orb has been found alive at five sites since 1992. Although the golden orb is listed as a species of possible occurrence in Bexar County (TPWD, 2012a), it is highly unlikely that it would occur in the study area because of the lack of suitable habitat.

The Texas pimpleback occurs in the Guadalupe and Colorado river systems, including reports from the Llano, San Saba, and Pedernales rivers, and is found in mud and gravel, at slow flow rates (Howells et al., 1996). The only confirmed significant population in the Concho River persists, but has been badly reduced by dewatering (TPWD, 2009). Although this species is listed as potentially

occurring in Bexar County (TPWD, 2012a), it is highly unlikely that it would occur in the study area because of the lack of suitable habitat.

Sprague's pipit is a relatively small passerine endemic to the North American grasslands. It has a plain buff-colored face with a large eye ring. Sprague's pipit is a ground nester that breeds and winters on open grasslands. It is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota, and South Dakota as well as south-central Canada (FWS, 2010). During migration and winter in Texas, as elsewhere, Sprague's pipit may be found searching for insects and seeds in weedy fields and the vicinity of airports as well as in a wide variety of grasslands (Oberholser, 1974). It is an uncommon migrant, primarily through the center of the state. The species is rare to locally uncommon inland to the Post Oak Savannahs and Blackland Prairies from Williamson and Brazos Counties, south through much of the South Texas Brush Country. Wintering Sprague's pipits are rare to locally uncommon in agricultural areas of north-central Texas, the Concho Valley, and the northwestern Edwards Plateau, and are rare migrants and casual winter residents through the remainder of the state (Lockwood and Freeman, 2004). This species may pass through the area during migration.

The remaining 13 taxa in Table 3-1, while not federally listed, are state-listed as threatened. They are as follows: one mollusk, the false spike mussel (*Quadrula mitchelli*); two fish, the widemouth blindcat (*Satan eurystomus*) and toothless blindcat (*Trogloglanis pattersoni*); two amphibians, the Cascade Caverns salamander (*Eurycea latitans*) and Comal blind salamander (*Eurycea tridentifera*); four reptiles, the Texas tortoise (*Gopherus berlandieri*), Texas horned lizard (*Phrynosoma cornutum*), Texas indigo snake (*Drymarchon melanurus erebennus*), and timber/canebrake rattlesnake (*Crotalus horridus*); and four birds, the peregrine falcon (*Falco peregrinus*), zone-tailed hawk (*Buteo albonotatus*), white-faced ibis (*Plegadis chihi*), and wood stork (*Mycteria americana*).

The false spike mussel is known from only two disjunct populations, one in the Brazos, Colorado, and Guadalupe river basins of central Texas and the other in the Rio Grande drainage (TPWD, 2009). It is found in substrates varying from mud through mixtures of sand, gravel, and cobble, with water lilies present at one study site (Wurtz, 1950). Although this species is listed as potentially occurring in Bexar County (TPWD, 2012a), it may possibly be extirpated in Texas and, therefore, it is improbable that the species would be found within the study area.

The widemouth blindcat and toothless blindcat are troglobitic catfish, endemic to the San Antonio pool of the Edwards Aquifer. They have been recorded only from Bexar County, but outside of the study area (TPWD, 2012b). Neither of these fish is likely to occur in the study area.

The Cascade Caverns salamander is a subaquatic salamander endemic to caves and springs associated with the Edwards Aquifer in Comal, Kendall, and Kerr counties (Chippindale et al., 2000). Smith and Potter (1946) first described the species from the Cascade Caverns system near Boerne,

where they assumed it endemic; however, additional specimens from other localities may represent this species. According to Dixon (2000), the species is restricted to the type locality in Kendall County, but this species is not well understood and populations of *Eurycea* salamanders occurring in several other springs and cave systems in Kendall, Kerr, western Comal, and southwestern Hays counties may also represent this species (Chippindale et al., 2000). No documented records of the species exist from Bexar County and its occurrence in the study area is unlikely.

The Comal blind salamander is a subaquatic species endemic to several caves and springs associated with the Edwards Aquifer in western Comal and northern Bexar counties (Chippindale et al., 2000). According to Chippindale et al. (2000), the species occurs only in Elm Springs Cave, Bexar County, and Honey Creek Cave and nearby limestone caves and sinkholes in the floodplain of Cibolo Creek in Comal County. The entire known range of this species is outside of the study area, and no documented occurrences of this species occur within the study area (TPWD, 2012b). Its occurrence in the study area is unlikely.

The Texas tortoise inhabits sandy open scrub, semidesert, and desert habitats of south Texas (Bartlett and Bartlett, 1999). It is primarily vegetarian, feeding on a variety of plant matter including leaves, fruits, flowers, cactus pads, and stems. During periods of inactivity, Texas tortoises typically burrow in shallow depressions found at the bases of clumps of bushes or cacti, but may occasionally be found in underground burrows or under objects. The species is most active from March to November, with breeding taking place from April to November (Garret and Barker, 1987; TPWD, 2012a). The study area is at the northern edge of this tortoise's range, and records exist from Bexar County (Dixon, 2000). The Texas tortoise is of potential though unlikely occurrence in the study area.

The Texas horned lizard is found throughout the state in a variety of habitats, but prefers arid and semi-arid habitats in sandy loam or loamy sand soils that support patchy bunchgrasses, cacti, yucca, and various shrubs (Henke and Fair, 1998). Historically this species has been recorded from throughout Texas, but over the past 25 years, it has almost vanished from the eastern half of the state, although it still maintains relatively stable numbers in west Texas. The Texas horned lizard has been recorded from Bexar County (Dixon, 2000) and may occur in small numbers in suitable habitat within the study area.

The Texas indigo snake is a large nonvenomous snake that inhabits thornbush-chaparral woodlands of south Texas. The species is drought-sensitive and requires moist microhabitats such as riparian corridors, ponds, resacas, and windmill seeps (Werler and Dixon, 2000). Primarily a Mexican species, the Texas indigo snake ranges throughout south Texas, north to Val Verde, Kinney, Uvalde, and Medina counties (Werler and Dixon, 2000; Dixon, 2000). According to Dixon (2000), Medina and Bexar counties represent the northern edge of this species' range and Werler and Dixon (2000) noted that the species historically occurred in Bexar County, but no documented records exist since the early 1950s. The Texas indigo snake is unlikely to occur in the study area.

The timber rattlesnake typically inhabits dense thickets and brushy areas along the floodplains of major creeks and rivers throughout the eastern third of Texas. It can be found in a variety of habitats including floodplains and riparian areas, swamps, upland pine and deciduous woodlands, abandoned farmland, and limestone bluffs (Werler and Dixon, 2000; TPWD, 2012a). This rattlesnake is most active during the summer and fall, with some activity noted in spring and as late as December (Werler and Dixon, 2000). While the timber rattlesnake has been recorded in Bexar County (Dixon, 2000), this record represents the western edge of its range. It is unlikely to occur in the study area.

None of the four state-listed birds is likely to occur in the study area other than as occasional, vagrant or migrating individuals. TPWD recently revised the status of the American peregrine falcon (*Falco peregrinus anatum*) from endangered to threatened, and dropped the Arctic peregrine falcon (*Falco peregrinus tundrius*) from the state threatened and endangered list altogether. The American peregrine falcon is a rare migrant statewide and nests in the mountains of Trans-Pecos Texas, while the Arctic peregrine falcon is an uncommon migrant statewide and an uncommon winter resident on the coastal prairies and coast, where it typically occurs near bays and estuaries (Lockwood and Freeman, 2004). However, because the two subspecies are not easily distinguishable from each other in the field, TPWD will only reference to the species level (TPWD, 2012a). While Oberholser (1974) lists a historical breeding record from as close as Kerr County, no recent breeding records exist from Bexar County (Lockwood, 2001; TPWD, 2012b); however, peregrine falcons may migrate through the study area during spring and/or fall and may forage in appropriate habitat during the winter.

The zone-tailed hawk is a mesa- and canyon-inhabiting raptor in Arizona, New Mexico, and southwest Texas. In Texas, it is an uncommon local summer resident in the mountains of the central Trans-Pecos, east through the southern Edwards Plateau (Lockwood and Freeman, 2004). Lockwood (2001) identifies zone-tailed hawks as uncommon summer residents in the southwestern and southern portions of the Edwards Plateau, east to Bandera County. This hawk has been recorded from Bexar County (Oberholser, 1974) and could occasionally occur in the study area, although it would not be expected to nest there.

The white-faced ibis is a medium-sized wading bird that inhabits freshwater marshes, sloughs, and irrigated rice fields, but may occur in brackish and saltwater habitats. White-faced ibis are permanent residents along the Texas Gulf Coast; however, nesting records exist for many scattered inland localities including Bexar County (Oberholser, 1974; Lockwood and Freeman, 2004). The species is a rare to uncommon migrant throughout the state and may occasionally be found as a postbreeding visitor north and west of its typical range. While records of the white-faced ibis exist from Bexar County (Oberholser, 1974), it is unlikely to occur in the study area due to lack of suitable habitat.

The wood stork is listed by the FWS as endangered in Florida, Georgia, North Carolina, and South Carolina, but not Texas. It is, however, state-listed as threatened. This species is an uncommon to locally common postbreeding visitor to the Texas coast and inland to the eastern third of the state (Lockwood and Freeman, 2004). While migrant wood storks have been documented in Bexar County (Oberholser, 1974), this species is unlikely to occur in the study area due to lack of suitable habitat.

Critical Habitat

The FWS, in Section 3(5)(A) of the ESA, defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time that it is listed in accordance with the ESA, on which are found those physical or biological features that are (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

In 2003, FWS released a final ruling for critical habitat designation of karst invertebrates in Bexar County (68 FR 17156–17231, April 8, 2003). This ruling designated 1,063 acres in 22 units as critical habitat for seven species. This did not include areas in Government Canyon SNA or Camp Bullis due to karst management plans in effect for these areas. None of these critical habitat units occurs in the study area. However, one critical habitat unit, Unit 2, proposed on February 22, 2011 occurs in the eastern portion of the study area (76 FR 9872–9937) (see Figure 2-1). Unit 2 contains two caves, Madla's Drop Cave, which is occupied by Madla's Cave meshweaver and the ground beetle *Rhadine infernalis*, and Logan's Cave, which is occupied by the ground beetles *Rhadine infernalis* and *Rhadine exilis*. The rule became final on February 14, 2012 (77 FR 8450–8523). Unit 2 was delineated by drawing a circle with an area of 100 acres around each of the caves and generally connecting the edges of the overlapping circles (77 FR 8450–8523).

3.8 HUMAN DEVELOPMENT

3.8.1 Land Use

The study area is located northwest of San Antonio and Helotes within Bexar County, which is located in State Planning Region No. 18 and represented by the Alamo Area Council of Governments (AACOG), with headquarters in San Antonio (AACOG, 2012). According to the last set of published NRCS land use estimates (NRCS, 2000), the three primary classifications in Bexar County were rangeland (29%), urban (28%), and cropland (23%). During the 12 years since these estimates were made, the percentage of urban development has undoubtedly grown at the expense of the two agricultural categories.

As San Antonio has grown over the past decade, the west and northwest portions of the city have experienced a tremendous amount of development, particularly along the corridors of Interstate

Highway (IH) 10, State Loop (SL) 1604, and SH 16. Subsequent commitments by the city, county, and state to upgrade roads, highways, railroads, and other infrastructure in the area should continue to stimulate new commercial, industrial, and residential development throughout the region.

Between 2000 and 2011, approximately 77,000 single-family building permits were recorded within Bexar County. In 2000, Bexar County recorded 6,873 single-family building permits, with an average price per dwelling of $87,700. By comparison, in 2006, Bexar County recorded 9,219 single-family building permits, with an increased average price of $156,000, and in 2011 it recorded 2,442 single-family building permits with an average price of $176,500 (Texas A&M University, 2012).

The study area itself recently experienced rapid residential development, with some commercial complexes. The Chimney Creek subdivision is located in the northeastern portion of the study area, and the Shadow Canyon subdivision is located in the southern portion, south of SH 16. Commercial buildings in the study area include Gavin Steel Fabricating Inc., Helotes Area Trailer Sales, a clubhouse associated with the Oak Valley Golf Course, Dirt Works of Helotes, Picosos Peanut Co., Dino & Gino Liquors, Lotus Creations Inc., and Designs by Sherry.

3.8.2 Parks and Recreation

A review of National Park Service (NPS, 2012), TPWD (2012c), Bexar County Public Works (2012), federal, state, and local maps, and field surveys revealed two recreational areas within the study area. Government Canyon SNA is located in the southwest portion of the study area, abutting the Shadow Canyon subdivision. This SNA features more than 40 miles of hiking and biking trails that range from rugged canyons to gently rolling grassland meadows. In addition to hiking, popular activities at the SNA include birding, geocaching, biking, trail running, swimming, and picnicking (TPWD, 2012c). Additionally, the Oak Valley Driving Range and Par-3 Golf Course is on the north side of SH 16 in the west-central portion of the study area. This nine-hole golf course and driving range is open to the public throughout the week, year-round.

3.8.3 Agriculture

The study area is located in a portion of San Antonio that is quickly being converted to residential and commercial development. Historically, ranching was the predominant land use in Bexar County; however, the acreage dedicated to ranching operations continues to decrease as farms and ranches are subdivided for residential and commercial development. As shown in estimates published by the U.S. Department of Agriculture (USDA), the total land area in farms between 2002 and 2007 has decreased from 441,206 acres in 2002 to 425,909 acres in 2007, a 3% decrease (USDA, 2007). It is unlikely that agricultural land uses occur within the study area boundaries.

3.8.4 Transportation/Aviation/Communications Facilities

The major transportation feature within the study area is SH 16 (Bandera Road), which meanders through the study area from east to west. The remainder of the transportation grid is made up of residential streets and scattered commercial driveways adjacent to SH 16.

A review of the Airport/Facility Directory for the South Central U.S. (Federal Aviation Administration [FAA], 2012a), the San Antonio Sectional Aeronautical Chart (FAA, 2012b), the Texas Airport Directory (TxDOT, 2012), and the AirNav website (AirNav, 2012) found no FAA-registered or private airstrips, or any heliports, within the study area or its vicinity.

A search of the Federal Communications Commission (FCC) website and field reconnaissance revealed no AM, FM, or TV towers within the study area or within the vicinity of the study area (FCC, 2012). However, three cellular communication towers were found during field reconnaissance. These cellular towers are located in a cluster on a hilltop in a residential area south of the intersection of Bandera Road (SH 16) and Chimney Creek Road.

3.9 AESTHETICS

Aesthetics is included as a factor for consideration in the evaluation of transmission facilities in Section 37.056(c)(4) of the Texas Utilities Code. The term "aesthetics" refers to the subjective perception of natural beauty in the landscape and attempts to define and measure an area's scenic qualities.

Atkins' aesthetic analysis deals primarily with potential visual impacts to the public. Viewsheds or scenic areas visible from roads, highways, or publicly owned or accessible lands (parks or privately owned recreation areas open to the public, for example) are analyzed. Several factors are taken into consideration when attempting to define the sensitivity, or potential impact, to a scenic resource from the construction of the proposed substation. Among these are:

- topographical variation (hills, valleys, etc.)
- prominence of water in the landscape
- vegetation variety (forests, pasture, etc.)
- diversity of scenic elements
- degree of human development or alteration
- overall uniqueness of the scenic environment compared to the larger region

Based on these criteria, the study area exhibits a medium to high degree of aesthetic quality for the region. The area is characterized by hilly topography, and no major water features occur within the study area. Los Reyes Creek and an associated tributary are the only water features within the study area. Furthermore, the landscape has experienced some degree of alteration due to

residential and commercial development, as well as the construction of transportation corridors. As a result, the landscape exhibits a moderate level of human impact, including roadways, residential subdivisions, and existing electrical transmission and distribution lines.

The Texas Historical Commission (THC) operates the Texas Heritage Trails Program, a statewide heritage tourism program based on 10 scenic driving trails originally created by TxDOT. This program operates throughout 10 regions of Texas and enables people to learn about, and be surrounded by, local customs, traditions, history, and culture in the different regions. These routes were designed under the Texas Heritage Trails Program and are described in pamphlets distributed by TxDOT offices and tourist information centers, and marked by special signs along designated highways (THC, 2012). A review of this literature found that none of the trails utilizes roadways within the study area.

Additionally, TPWD operates the Great Texas Wildlife Trails, a statewide system of driving trails through five different and distinct ecoregions of the state, the first of its kind in the nation. The study area is located in the Heart of Texas Wildlife Trail region, but none of the region's wildlife viewing loops utilizes roadways that are located within the study area (TPWD, 2012d).

In 1998, TxDOT published a list of some of the best Scenic Overlooks and Rest Areas in Texas, each of which presented particularly strong aesthetic views or settings (TxDOT, 1998). A review of this list found that none of the 46 locations listed occurs within the study area.

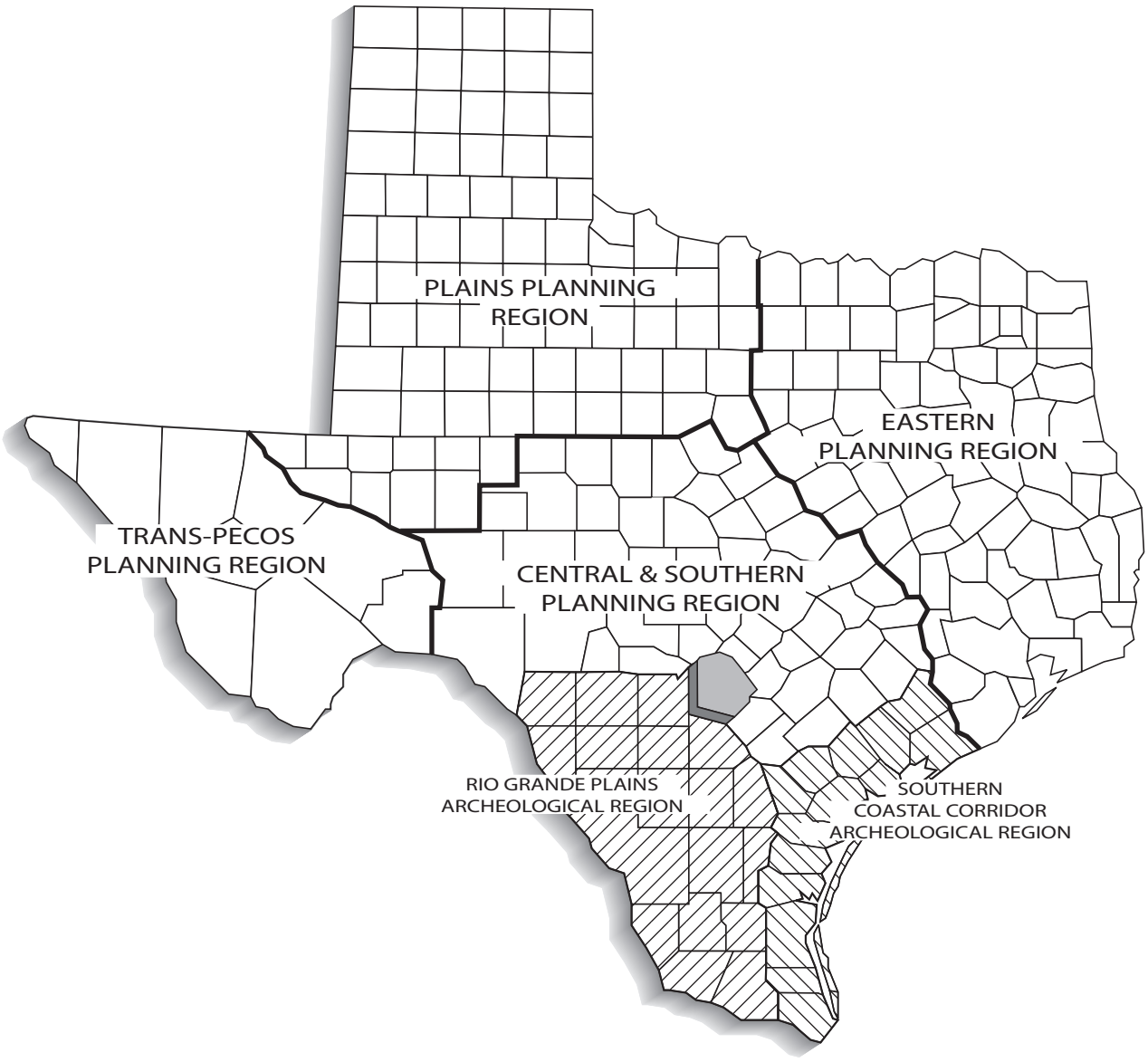
3.10 CULTURAL RESOURCES

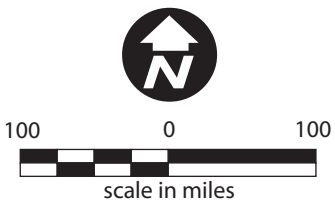
The study area is located in northwest Bexar County, at the southernmost portion of the Central Texas Archeological Region of the Central and Southern Planning Region of Texas, as indicated of Figure 3-4 (Mercado-Allinger et al., 1996). Cultural developments in this region are classified by archeologists according to four primary chronological and developmental stages: Paleoindian, Archaic, Late Prehistoric, and Historic. These classifications have been defined primarily by changes in material culture over time, as evidenced through information and artifacts recovered from archeological sites.

3.10.1 Cultural Overview

3.10.1.1 Prehistoric

The Paleoindian period, representing the earliest occupations in the region, began before 10,000 B.C. and continued to about 6500 B.C. The Paleoindian people were hunters and gatherers who hunted now-extinct species of Pleistocene megafauna such as the mammoth, mastodon, camel, and bison. In most areas, however, big-game hunting was probably augmented by the utilization of wild plants and smaller animals. Data collected during excavations at the St. Mary's Hall site





Source: Mercado-Allinger, et al., 1996

ATKINS

Figure 3-4

LOCATION OF BEXAR COUNTY
IN RELATION TO THE
CULTURAL RESOURCES
PLANNING REGIONS OF TEXAS

File: N:\Clients\C_D\CPS_Energy\100028673\geo\figs\figure3-4.ai

(41BX229) in Bexar County have contributed to this view of a more-varied diet for Paleoindian groups (Hester, 1978).

Few intact Paleoindian sites have been recorded in this region, partly because Paleoindian deposits are usually deeply buried in various alluvial settings and are difficult to locate and study. When Paleoindian sites are found they are usually poorly preserved or stratigraphically mixed (Mercado-Allinger et al., 1996). Sites occur more commonly as small, surface lithic scatters, usually located in upland areas along divides of major and minor watersheds. These are thought to represent transient camps, resource procurement loci, or retooling stations by loosely structured, highly mobile social groups composed of several nuclear families referred to as bands. However, Paleoindian sites with buried components have been excavated in the Central Texas region. These include the Kincaid Rockshelter site (41UV2) in Uvalde County (Collins et al., 1988), the Levi site (41TV49) in Travis County (Alexander, 1963), the Wilson-Leonard site (41WM235) in Williamson County (Collins, 1993), and the Pavo Real site (41BX52) in Bexar County (Henderson, 1980), which yielded one of the few known Paleoindian burials. Late Paleoindian components have also been found during excavations at site 41BX47 on Leon Creek (Tennis, 1996) as well as the Richard Beene site (41BX831) (Thoms et al., 2005). Temporally diagnostic tool kits associated with the Paleoindian period consist of a variety of finely chipped, sometimes fluted, lanceolate projectile points, such as the Clovis, Folsom, and Plainview types (Willey, 1966).

At the end of the Paleoindian period, the archeological record exhibits evidence of a diversification in subsistence patterns that mark the beginning of the complex chronological period referred to as the Archaic. Indications suggest that the prehistoric inhabitants began hunting a variety of small game animals, including deer and rabbit, as well as gathering edible roots, nuts, and fruits (Black, 1989). Site types include rockshelter, campsites, lookout sites, and quarry sites that are usually located near a reliable water source.

The Archaic period is divided into three subperiods: Early, Middle, and Late. Numerous Archaic sites have been identified along Panther Springs, Medina River, and Culebra Creek (City of San Antonio, 2011). The Early Archaic groups continue to exhibit many of the characteristics of the preceding Paleoindian period and the early part of this period is sometimes referred to as transitional between the Paleoindian and the Archaic periods. Most of the projectile points from this period are well made and many exhibit characteristics typical of Paleoindian technologies, such as lateral edge grinding. In addition, Early Archaic artifact forms have been recovered beyond the boundaries of central Texas. The variety of projectile point types distributed over such a large area has prompted Prewitt (1981) to suggest that these people were organized in small, dispersed bands that roamed broad territories. Sites in Bexar County with Early Archaic components include the Higgins site (41BX184) and the Panther Springs site (41BX228) (McNatt et al., 2000).

The Middle Archaic period can be subdivided into early (Clear Fork) and late (Round Rock) intervals. Nolan and Travis projectile points are indicative of the Clear Fork interval, while the

Round Rock interval is marked by the Pedernales, Marshall, and Langtry points. It was during the Middle Archaic period that burned rock middens became a specialized site type (Black, 1989). This site type becomes extremely common during this period, suggesting an intense and perhaps rather specialized plant-processing economy. Weir (1976) has even suggested a population increase during this period and possible developments in social organization. Projectile points from this period are quite numerous, occurring in large frequencies at some sites. They tend to be large, straight stemmed, and often not as well made as the points from earlier or later periods. Middle Archaic sites in Bexar County include the Granberg II site (41BX271) and Elm Waterhole site (41BX300) (McNatt et al., 2000).

By the beginning of the Late Archaic period, a proliferation of projectile point types again occurred and the frequency of burned rock middens appears to have decreased. Prewitt (1981) has suggested that proliferation of projectile points during the earliest phase of this subperiod may represent a return to the Early Archaic pattern of small, dispersed bands with wide-ranging territorial areas. The latter part of this period appears to be marked by an emphasis on the utilization of a wide variety of food resources, perhaps indicative of population or climatic stress at this time. Projectile points diagnostic of the early part of the Late Archaic include Bulverde and Pedernales types. Later in the period Ensor, Frio, and Marcos point types became prominent. Cemeteries, especially associated with rockshelters, also become common in central Texas during the Late Archaic (Dockall et al., 2006).

The Late Prehistoric period (A.D. 800–1600) is much shorter in duration than the Archaic period and is divided into two phases based upon radio carbon dates and changes in arrow types and subsistence pursuits. The first phase of this period, the Austin Phase, dates to between A.D. 800 and 1300, and is manifested by Scallorn points and burned rock middens. During the second phase identified for the Late Prehistoric, the Toyah Phase, indications exist of major population movements, changes in settlement patterns, and perhaps lower population densities (Black, 1989). The first evidence of incipient agriculture appears at this time as do ceramics. Bison hunting appears to be a very important subsistence strategy during the Toyah Phase. The Toyah phase has very distinctive traits that separate it from the earlier Austin phase. Temporal indicators of the Toyah phase include ceramics, both locally made and imported, Perdiz arrow points, end scrapers, large thin bifaces, beveled knives, and prismatic blades (Rogers, 2008). While the hunting of bison was an important subsistence endeavor, deer, antelope, and other smaller mammals were also exploited. The use of burned rock middens was not great during this time; rather, large hearths were used for cooking (Johnson, 1994).

The Late Prehistoric period also is marked by the introduction of several technological advances, most notably the bow and arrow and, later, pottery. The bow and arrow quickly became the standard weapon, replacing the throwing stick, or atlatl, and small thin arrow points became a key indicator among the material remains of the period. Sometime after the adoption of the bow and arrow, plainware ceramics were introduced into the area. This development probably came from

agricultural groups to the east or northeast. Possible indications exist of major population movements, changes in settlement patterns and, perhaps, lower population densities during the Late Prehistoric period (Black, 1989).

3.10.1.2 Historic

Historic Indian groups in the area include the Tonkawa, Karankawa, Lipan Apache, and Comanche, who entered the area from the plains in pursuit of food and stopped at the areas springs. The Spanish were likely the first Europeans in the study area, perhaps as early as 1690, when Alonso De Leon reputably passed through on his way to East Texas (Unknown, 2012). In 1691, the first Spanish Provincial Governor of Coahuila, Domingo Terán de los Ríos, travelled through portions of Bexar County creating what would become the El Camino Real de los Tejas (The King's Highway, also known as the Old San Antonio Road in portions), which extended into many other counties and ran for about 2,500 miles.

E1 Camino Real de los Tejas was, at the time, the principal road connecting Coahuila, Mexico, with the former Spanish capital of the Texas province, Los Adaes (now Robelene, Louisiana). Spanish military forces used the route to counter French expeditions into what is now Texas as early as the mid-1680s. The Frenchman Louis Juchereau de St. Denis also traveled through Bexar County in 1714 as he traveled from Natchitoches to San Juan Bautista on the Rio Grande (Pool, 1975). Other expeditions to Bexar County include the Espinosa, Olivares and Aguirre expedition (1709 and 1716), the Rámon expedition (1716) and the Alarcón expedition (1718) (Long, 2012). By the mid-eighteenth century, under the perceived threat of French encroachment into territories claimed by the Spanish Crown, Spanish friars, and soldiers entered the central Texas area and established several missions. The El Camino Real de los Tejas continued to see use through the nineteenth century, serving as an important transportation corridor to soldiers, merchants, and settlers alike.

In 1731, Canary Islanders founded the Villa de San Fernando de Bexar, which became the first municipality in the Spanish province of Texas. During these years, epidemics devastated large numbers of the missions' native populations, and Apache raids were reportedly responsible for almost all of the reported Spanish deaths (Long, 2012).

After the arrival of the first Anglo-American colonists in 1821, San Antonio (San Fernando de Bexar) became the westernmost settlement in Texas. In 1824, Texas and Coahuila were united into a single state with the capital at Saltillo. A Department of Bexar was formed with a political chief who had authority over the Texas portion of the state, and the Department of Bexar extended from the Rio Grande to the Texas Panhandle and west to El Paso. When Texas gained its independence from Mexico in 1836, Bexar County was created (Long, 2012).

Beginning in the 1840s, numerous Western European immigrants, especially the Germans began settling in the Helotes and the Grey Forest area (Cooper, 2008). Many of these immigrant settlers established large ranches (properties like that of the Hoffmans that would later become

Government Canyon State Natural Area) in the area during what was an agricultural boom. Also roughly during this same period, military exploration west of San Antonio reached its peak. Numerous military trails were located through and around Government Canyon in an effort to link San Antonio with the many military Forts north and west of the area including Fort Terrett and Fort McKavett (McNatt et al., 2000). In 1858, Scottish immigrant, Dr. George F. Marnoch purchased the land that would encompass the town of Helotes and by 1873, the town was a stage stop on the Bandera Road (Massey, 2012). The region prospered following the Civil War due to its position as a center for both ranching and military activity.

Following a downturn in the cattle markets in the 1880s, by the 1930s many "well-to-do families" had begun purchasing old ranch properties in outlying areas of Bexar County. The families would then modify the property either building or converting the main house into a large suburban home and commute into San Antonio for employment. Within the current study area north of SH 16, an example of this suburban ranch building settlement pattern of the early 1930s can be seen in the R.L. White Ranch. The property, purchased c. 1926 by R.L. White, was once one of the largest ranches in northwest Bexar County. Inspired by the Grand Canyon Lodge on the North Rim of the Grand Canyon, White created the ranch as a rustic retreat and hunting ranch for his business customers. The ranch was later subdivided among his three children with the western portion (outside the current study area) going to his daughter and becoming the Thomson Ranch, the central portion (outside of the current study area, but abutting its western boundary) going to his son and later his granddaughter commonly still referred to as the White Ranch, and the eastern portion (within the current study area) going to another daughter and becoming the Bitters Ranch. The central portion of the ranch (the White Ranch) is currently listed on the National Register of Historic Places (NRHP) as a district and is significant for both its association with R.L. White and for its intact and architectural examples of Rustic-style buildings and structures (Cooper, 2008).

Within the Bitters Ranch portion (within the current study area north of SH 16) is the related Heimsmith-Haby-White Ranch. Owned by R.L. White's granddaughter and current owner of the White Ranch NRHP district property, the Heimsmith-Haby-White was identified along with 84 other properties as being potentially eligible for inclusion on the NRHP in a multiple property submission for historic farms and ranches of Bexar County, Texas (Dase et al., 2010). Other large ranches in the vicinity from the same suburban ranch settlement period include the Gallagher Ranch, the oldest "dude" ranch in Texas, Recorded Texas Historic Landmark, the Huebner-Onion Homestead listed in the NRHP, the Rosemont estate in the Oak Hill Subdivision, and the Leon Creek Ranch near the Dominion Estates (Cooper, 2008).

3.10.2 Previous Investigations

Early contributions to the archeology of Central Texas were made by the work of J.E. Pearce (1919, 1932), E.B. Sayles (1935), and C.N. Ray (1929, 1930, 1934). Their work aided in developing an understanding of cultural areas and chronological sequences in the state. In the San Antonio area,

S.W. Woolford (1935) published an early monograph identifying 10 types of prehistoric sites within Bexar County. In the 1930s, excavations undertaken by the Works Progress Administration (WPA) provided new sources of data for developing chronologies in many parts of Texas. Much of this effort was concentrated north and east of San Antonio (Jackson, 1938; Campbell, 1962), but a few excavations were located in the south-central Texas region.

Among the most important early syntheses of the central Texas region was the work of J. Charles Kelley (1947, 1959) whose chronological subdivisions formed the basis for more recent systematizations (Weir, 1976; Prewitt, 1981). The River Basins Surveys in central Texas provided new data on the chronological sequence of cultures in this area (Stephenson, 1947). C.D. Orchard, in conjunction with T.N. Campbell of the University of Texas at Austin, presented new information on the archeological sites within Bexar County (Orchard and Campbell, 1954).

The growing body of archeological data from the WPA and the River Basins Surveys prompted the publication of the Handbook of Texas Archeology (Suhm et al., 1954), the first and, perhaps, still the most comprehensive synthesis of the archeology of Texas. Much work was conducted in many parts of Texas during the 1960s. Among the most notable studies were those of Johnson et al. (1962) at sites in Canyon Lake near New Braunfels; Jelks (1962) at the Kyle site at Lake Whitney; Shafer (1963) at the Youngsport site in Bell County; and Sorrow et al. (1967) at Stillhouse Hollow Lake near Belton. Farther west, in the Lower Pecos region, archeological excavations in the Amistad Lake area (Johnson, 1964; Sorrow, 1968; Dibble and Lorrain, 1968; Collins, 1969) provided important chronological and paleoecological data. Johnson's (1967) attempt to sort out the central Texas and Lower Pecos region chronology was one of the most important syntheses published during this period.

Very few major archeological projects were undertaken in the immediate San Antonio vicinity during this time. Excavations were conducted at the Granberg site in Bexar County for the Witte Museum (Schuetz, 1966), while Hsu and Ralph (1968) conducted an archeological survey of the proposed Cibolo Reservoir in Wilson County, south of San Antonio. Within San Antonio, archeological investigations at several of the missions were initiated during this time (e.g., Schuetz, 1966, 1969, 1970; Tunnell, 1966).

Around San Antonio, W.B. Fawcett's (1972) article on the prehistory of Bexar County summarized previous work in the area and sought to redefine site types found in that portion of the county. The beginning of the contract program at the Center for Archaeological Research (CAR) at the University of Texas at San Antonio and, later, the founding of the avocational organization, the Southern Texas Archaeological Association, significantly increased cultural resources studies in and around Bexar County. The late 1970s brought a number of important archeological projects in and around Bexar County. Important regional studies include those at Camp Bullis (Gerstle et al., 1978) and for the City of San Antonio 201 Wastewater Facilities (Fox, 1977). Numerous small survey and

testing projects were conducted in the northern portion of Bexar County (Hester et al., 1974; Brown et al., 1977; Katz, 1977; McGraw et al., 1977; Roemer and Black, 1977; McGraw and Valdez, 1978).

Various major survey and excavation projects undertaken during the late 1970s and early 1980s began to provide solid answers to questions that arose during the previous decade. For example, the excavations at the Panther Springs Creek site in Bexar County (Black and McGraw, 1985) began to define the differences between cultures of central Texas proper and the groups that roamed its southern periphery. Other studies that had a significant impact on our understanding of local prehistory include those at site 41BX1 (Lukowski, 1988) and site 41BX300 (Katz, 1987) in San Antonio, and the report of the survey and excavations at Applewhite Reservoir southwest of San Antonio (McGraw and Hindes, 1986).

In 1990, Geo-Marine conducted a cultural resources survey of 100 acres along Salado Creek (Cliff et al., 1990). This survey located eight new archeological sites (41BX442, BX444, BX874–BX879) and relocated one previously recorded site (41BX22).

The CAR has conducted numerous investigations that have contributed to a significant increase in the study of Bexar County prehistory. A 1994 CAR survey of 147 acres along Leon Creek in northern San Antonio revisited four previously recorded prehistoric sites located on the floodplain and terraces overlooking the creek (Tennis and Hard, 1995). Site 41BX47, occupying an area of approximately 150,000 square meters and having an occupational history extending from the Late Paleoindian to Late Archaic periods, was recommended as eligible for inclusion in the NRHP (Tennis, 1996). Burned rock features were abundant, but yielded few preserved specimens of bone and charcoal.

The most extensive survey in the area was conducted by archeologists from CAR during a 1994 project within the boundaries of Lackland Air Force Base, which located 71 sites (Nickels et al., 1997). Sixty-eight of these contained prehistoric components ranging from the Early Archaic to the Late Prehistoric periods, and 8 had historic components representing late-nineteenth- to mid-twentieth-century farmsteads. Significance testing was conducted at eight of the prehistoric sites, only two of which, sites 41BX1102 and 41BX1103, were recommended for NRHP designation. Both represented open campsites yielding diagnostic artifacts from the Middle Archaic and Transitional Archaic periods, respectively (Houk and Nickels, 1997).

Geo-Marine, Inc., conducted a survey along Culebra Road in northwest San Antonio, which located one previously unrecorded site (Ahr and Duke, 2002). Site 41BX1465 is a prehistoric lithic quarry located on a terrace above Culebra Creek that consists primarily of lithic debris. The site was not recommended for further testing.

SWCA conducted a survey near Medio Creek in northwest Bexar County in 2006, which recorded one prehistoric site located on a terrace above Medio Creek (Wilcox, 2006). Site 41BX1691 was

recorded as a prehistoric open campsite and yielded lithic debitage and burned rock. The site was not recommended for further testing.

Within the current study area, numerous surveys have been conducted in Government Canyon State Natural Area. Prior to the creation of the Natural Area, the area in and around the Natural Area was part of the proposed planned community of San Antonio Ranch. It was for this proposed community that the first archeological investigations of the area were undertaken in 1972 by the Texas Archeological Salvage Project. The investigation focused mainly on canyon bottoms, adjacent lower slopes, and two unnamed drainages and resulted in the recordation of 40 prehistoric sites. In 1977 and 1978, KAAP GRAFIX revisited four of the sites recorded during the 1972 investigation and assessed their eligibility for inclusion on the NRHP. A decade later, avocational archeologist C.K. Chandler recorded two new sites in the area as well as revisiting two sites recorded during the initial 1972 investigation (McNatt et al., 2000). In 1991, GeoMarine conducted a sample survey of 450 acres, including the portion of Government Canyon State Natural Area within the current study area. The survey resulted in the recording of 16 archeological sites primarily consisting of lithic procurement areas (Greaves et al., 2002). With the formation of Government Canyon State Natural Area in 1994, subsequent investigations in the area were largely undertaken by or on behalf of TPWD, including Ralph (1995, 1996 and 1997), McNatt et al. (2000), Weston (2001, 2003), and Greaves et al. (2002).

Outside of the Government Canyon State Natural Area, recent investigations include F. Binetti of the Texas Archeological Stewardship Network's recordation of archeological site 41BX1926 in association with the R.L. White Ranch.

3.10.3 Results of the Literature and Records Review

Research of available records and literature was conducted at TARL, J.J. Pickle Research Campus, The University of Texas at Austin with the purpose of determining the location of recorded cultural resource sites within the proposed study area. The THC's online Restricted Archeological Sites Atlas files were also used to identify listed and eligible NRHP properties and sites, NRHP districts, cemeteries (including Historic Texas Cemeteries), Official Texas Historical Markers (including Recorded Texas Historic Landmarks), and State Archeological Landmarks, as well as any other potential cultural resources such as National Historic Landmarks, National Monuments, National Memorials, National Historic Sites, and National Historical Parks to ensure the completeness of the study. As a secondary source of NRHP-listed properties and NHLs, the National Park Service's NRHP database and GIS Spatial Data, as well as the NHL Program, were consulted. Because of the study area's proximity to the El Camino Real de los Tejas National Historic Trail, the NPS El Camino Real de los Tejas Comprehensive Management Plan/Environmental Assessment Maps and Geographic Resources Program National Historic Trails Map Viewer were reviewed. Additionally, TxDOT's database of NRHP-listed and NRHP-eligible bridges was also reviewed. Finally, the City of San Antonio's GIS Historic Districts and Historic Landmark Sites data were reviewed.

The results of the file review identified five previously recorded archeological sites (41BX966, 41BX967, 41BX968, 41BX1521, and 41BX1926), one cemetery, one potentially NRHP-eligible property (the Heimsmith-Haby-White Ranch) and one City of San Antonio Historic Site (Government Canyon State Natural Area) within the current study area. Additionally, Loma Alta was identified as a high potential site along the El Camino Real de los Tejas National Historic Trail. However, the exact location of this site was not satisfactorily ascertained during the archival research, but is in the vicinity of the current study area.

4.0 ENVIRONMENTAL IMPACT OF THE POTENTIAL SITES

The potential/anticipated impacts to natural, human, and cultural resources resulting from the proposed project are discussed below by discipline/subject area.

4.1 IMPACT ON NATURAL RESOURCES

4.1.1 Impact on Physiography/Geology

Construction of the proposed Ranchtown substation will have no significant effect on the geological features or resources of the area. Construction will require the removal and/or minor disturbance of small amounts of near-surface materials, but will have no measurable impact on geological resources or features at any of the alternative substation sites. The project will have no significant impact on mineral resources in the area.

4.1.2 Impact on Soils

The major potential impact on soils from any substation construction would be erosion and soil compaction. The hazard of soil erosion is generally greatest during the initial clearing, where necessary, for the substation to be built. The topography of the region could create slight slope stability problems for the project, however. In order to reduce potential impact to slopes and to protect slope stability in these areas, CPS Energy will restrict construction activities during periods of increased precipitation. The grading of construction areas where vegetation is removed will be minimized.

Prime farmland soils, as defined by the NRCS, are soils that are best suited to producing food, feed, forage or fiber crops. The USDA recognizes the importance and vulnerability of prime farmlands throughout the nation and, therefore, encourages the wise use and conservation of these soils where possible. A strip of Krum clay (which is considered prime farmland if irrigated) is located within the study area, along the floodplain corridor associated with Los Reyes Creek. While the creek is contained within this type of soil formation, the Krum Clay formation has a wider footprint than the floodplain associated with this creek. Of all the alternative substation sites, sites 2, 7, 8, and 10 are entirely on Krum Clay; sites 4, 6, and 11 are partially on Krum Clay; and sites 1, 3, 5, and 9 are not on Krum Clay. The project is not expected to have any significant impact on prime farmland soils.

4.1.3 Impact on Water Resources

4.1.3.1 Surface Water

Construction of the proposed substation should have little adverse impact on the surface water resources of the area. The substation will not be built in the streambed of any drainage feature.

Potential impacts from any major construction project include siltation resulting from erosion, and pollution resulting from the accidental spillage of chemicals (e.g., fuels, lubricants, solvents, petroleum products, etc.). The removal of vegetation could result in an increased erosion potential of the affected areas, such that slightly higher-than-normal sediment yields may be delivered to area streams during heavy rainfall events. These short-term effects should be minor, however, because of the relatively small area to be disturbed at any particular time, the short duration of construction activities, the preservation of streamside vegetation where practicable, and CPS Energy's efforts to control runoff from construction areas. In addition, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the project, and a Notice of Intent (NOI) will be filed with the Texas Commission on Environmental Quality (TCEQ).

Should significant soil disturbance occur in close proximity to streams, silt fences or other appropriate erosion-control structures will be installed between the areas of disturbance and the waterways to prevent excessive siltation. Care will be taken to prevent brush from spilling into or blocking stream channels.

4.1.3.2 Floodplains

Construction activity within or near floodplains could result in erosion and sedimentation impacts, especially if flooding occurred during the construction period. According to FEMA and SARA floodplain maps (FEMA, 2012; SARA, 2012) alternative substation sites 4, 8, and 10 all have portions of their respective footprints located within a 100-year floodplain. Careful siting of the substation, however, should eliminate the possibility of significant scour. The actual acreage used for the construction of the substation will create some impervious cover. Due to the relatively small amount of land required for the construction and siting of the substation, the project should have no significant impact on the function of the floodplain, nor adversely affect adjacent property.

4.1.3.3 Groundwater

The construction, operation, and maintenance of the proposed substation are not anticipated to adversely affect groundwater resources in the area. All of the alternative substation sites except Site 11 lie within the Edwards Aquifer Contributing Zone. This zone, 5,400 square miles in size, is a catchment area that collects rainwater into streams, which then flow into the recharge zone. The Edwards Aquifer Recharge Zone is located just to the south of the contributing zone in the study area. This zone, approximately 1,250 square miles in size, allows large quantities of water through the Edwards Limestone via faults and fractures that ultimately end up in the Edwards Aquifer. All of the alternative sites are located within the Contributing Zone rather than the Recharge Zone, with the exception of Site 11, which is located just within the fringes of the Recharge Zone. Again, due to the relatively small amount of land required for the construction and siting of the substation, negative impacts to the groundwater from this project are expected to be negligible. If Site 11 is chosen, CPS Energy will have to submit a Water Pollution Abatement Plan (WPAP), and a Contributing Zone Plan will be required only if sites 1 through 10 require more than 5 acres

(including access roads). Due to the relatively small amount of land required for the construction and siting of the substation, negative impacts to the groundwater from this project are expected to be negligible.

4.1.4 Impact on Ecosystems

4.1.4.1 Vegetation

The primary impact to vegetation resulting from site preparation and construction of the proposed substation would be the removal of existing woody vegetation. Six of the alternative sites (sites 1, 4, 5, 6, 9, and 11) have at least 70% coverage of upland woodland/brushland vegetation. Three sites (sites 3, 7, and 10) have between 5 and 25% coverage. The final two alternative sites (sites 2 and 8) contain no upland woodland/brushland vegetation and impacts would be less for these locations. However, both sites 7 and 8 may require transmission and/or distribution lines through upland woodlands/brushland vegetation, depending on pole structure location and spanning capability.

During the vegetation clearing process, efforts will be made to retain native ground cover where possible. Soil conservation practices will be undertaken to benefit native vegetation and to assist in successful restoration of disturbed areas. As soon as possible after the construction of the substation, the remaining area will be reseeded in native grasses, if necessary, to facilitate erosion control.

In addition to the aerial photography, vegetation community types were verified in the field. Site 4 has the highest percentage of upland woodland/brushland coverage at approximately 100%, followed by Site 9 at 95%, sites 1 and 5 at 80%, Site 11 at 75%, Site 6 at 70%, Site 3 at 20%, Site 10 at 15%, and Site 7 at approximately 5%. Site 2 does not contain any upland woodland/brushland. Only one of the alternative substation sites is located in bottomland/riparian woodland (Site 10) with coverage at approximately 20%. None of the alternative substation sites is located in potential wetlands.

4.1.4.2 Wildlife

The impacts of any construction project on wildlife can be divided into short-term effects resulting from physical disturbance during construction and long-term effects resulting from habitat modification. The net effect on local wildlife of these two impact types is typically minor, however.

During the clearing of the substation site, animals of lesser mobility and size may be impacted and suffer some loss of habitat by the actions of mechanical clearing by machinery. The noise and physical activity of work crews and machinery might temporarily disturb the normal behavior of certain species. Impacts to mobile, earthbound species such as small mammals, amphibians, and reptiles are typically minor.

The increased noise and activity levels during construction could potentially disturb breeding or other activities of species inhabiting the areas adjacent to the substation site. However, given the commercial and residential nature of the area, wildlife is somewhat accustomed to noise and human activity. Dust and gaseous emissions should minimally affect wildlife. Although the normal behavior of some wildlife species will be disturbed during construction, no permanent damage to the populations of such organisms should result.

Although most of the alternative sites have been impacted to some degree by previous development, wildlife habitat is present at all of the sites, and some habitat loss would occur. With the exception of sites 2, 7, and 8, which contain little or no woodland, the alternative sites provide habitat for woodland species of wildlife as well as edge-adapted species (e.g., blue jay, some flycatchers, northern cardinal, northern bobwhite, brown-headed cowbird, northern mockingbird). Due to the fragmentation already present from the existing CPS Energy transmission line, Bandera Road and residential and commercial development, as well as the small size of the substation sites, the overall effect of the loss of this habitat will be very small.

4.1.4.3 Endangered and Threatened Species

While no federal-/state-listed plant species have been recorded from Bexar County (Poole et al., 2000; FWS, 2012; TPWD, 2012a, 2012b), FWS includes the federally listed endangered Texas wild-rice on its Bexar County list. This species is endemic to Hays County, but FWS includes it on its Bexar County list only because activities within the southern segment of the Edwards Aquifer, which includes Bexar County, may affect it. Since the Edwards Aquifer in the area is located several hundred feet below the surface, the project is not expected to impact Texas wild-rice or any of the other Edward's Aquifer species, such as the Comal Springs riffle beetle, Comal Springs dryopid beetle, Peck's cave amphipod, Texas blind salamander, San Marcos salamander, and fountain darter.

Several documented occurrences of the golden-cheeked warbler exist within the study area (Atkins, 2011; TPWD, 2012b) as well as in Government Canyon southwest of the study area (TPWD, 2012b). With the exception of sites 2, 3, 7, 8, and 10, all of the alternative sites occur at least partially within potential golden-cheeked warbler habitat. If golden-cheeked warblers occur in or within 300 ft of these sites, they may be impacted by the proposed project. Sites 2, 3, 7, 8, and 10 contain no potential habitat and are therefore less likely to impact the golden-cheeked warbler. Only sites 2 and 8 are not within 300 ft of potential golden-cheeked warbler habitat. Although sites 7 and 8 contain no potential habitat, however, transmission and/or distribution lines associated with these two potential sites would likely cross potential golden-cheeked warbler habitat, depending on pole structure location and spanning capability.

The black-capped vireo has been recorded 2.2 miles southeast of the study area (TPWD, 2012b), but no habitat for the black-capped vireo appears to be present at any of the 11 alternative sites.

The species is unlikely to occur in the general area due to lack of suitable habitat and is not expected to be impacted by the proposed project.

The 11 alternative substation sites are located within four karst zones: Karst Zone 1 (areas known to contain endangered karst invertebrate species), Karst Zone 2 (areas having a high probability of containing habitat suitable for listed karst invertebrate species), Karst Zone 3 (areas that probably do not contain endangered karst invertebrate species), and Karst Zone 4 (areas that require further research but are generally equivalent to Zone 3, although they may include sections that could be classified as Zone 2 or Zone 5 as more information becomes available). Site 11 is located entirely in Karst Zone 1; Site 6 has approximately 70% in Karst Zone 2 and 30% in Karst Zone 4; and sites 1, 7, and 8 are located entirely in Karst Zone 3, while sites 2, 3, 4, 5, 9, and 10 are located entirely in Karst Zone 4. Prior to construction, CPS Energy will conduct a survey of the final selected site to locate any previously unknown karst features. If any such features are found, CPS Energy will consult with FWS and may utilize techniques such as ground-penetrating radar to avoid subsurface karst features at the location.

No long-term impacts from construction and operation of the proposed substation to any of the other federal- or state-listed species addressed in Section 3.7.2 are anticipated. In general, the majority of the species that could potentially occur in the area are highly mobile and either do not normally use local environments or pass through the area only during migration. The whooping crane, interior least tern, Sprague's pipit, white-faced ibis, peregrine falcon, wood stork, and zone-tailed hawk, if they occur in the area, are likely to do so only as transitory migrants or post-breeding wanderers.

The Texas horned lizard, Texas tortoise, timber rattlesnake, and Texas indigo snake, if they occur at the site, may be impacted to some extent during the initial clearing and construction phases of the project. These impacts would be short term, however, and not expected to be significant. The black bear (Louisiana subspecies and others) is not expected to occur in the study area and will not be impacted by the project.

The aquatic widemouth blindcat, toothless blindcat, Cascade Caverns salamander, Comal blind salamander, and the four freshwater mussel species are not expected to occur in the study area. Furthermore, no aquatic habitat, except for a small stock tank on Site 3, occurs at any of the 11 alternative substation sites. Therefore, these species will not be impacted by the proposed project. Regardless, precautions will be taken to minimize siltation influx into Los Reyes Creek, which lies adjacent to several of the alternative substation sites.

Critical Habitat

Although critical habitat Unit 2, which contains two caves, Madla's Drop Cave, which is occupied by *Cicurina madla* and *Rhadine infernalis*, and Logan's Cave, which is occupied by *Rhadine infernalis and Rhadine exilis*, is located within the study area, it is north and east of the 11 alternative

substation sites. Therefore, no impact to critical habitat as a result of the proposed project will occur.

4.1.4.4 Summary of Impact on Natural Resources

Since most of the alternative substation sites have potential endangered species issues, the ecology evaluator based the assessment on the percentage of the site with potential golden-cheeked warbler habitat and whether the site was located within Karst Zone 1 (areas known to contain endangered karst invertebrate species) and Karst Zone 2 (areas having a high probability of containing habitat suitable for listed karst invertebrate species), or within the Edwards Aquifer Recharge Zone or the 100-year floodplain. Regarding potential golden-cheeked warbler habitat, sites 2, 3, 7, 8, and 10 have no potential habitat, followed by Site 6 (70%), Site 11 (75%), sites 1 and 5 (80%), Site 9 (95%), and Site 4 (100%). Additionally, sites 2 and 8 are the only alternative substation sites located over 300 ft from potential golden-cheeked warbler habitat. Sites 4, 8, and 10 are the only sites that are located within the 100-year floodplain. With regards to site location in karst zones, sites 1, 2, 3, 4, 5, 7, 8, 9, and 10 are the best because they are located in Karst Zone 3 or 4, followed by Site 6 (approximately 65% in Karst Zone 2), and Site 11, which is entirely in Karst Zone 1. Site 11 is also the only site located within the Edwards Aquifer Recharge Zone. Therefore, from an ecological perspective, Site 2 was ranked first, followed by sites 3, 10, 7, and 8, respectively. Site 11 would be the most impacting site from an ecological perspective and thus was ranked last.

4.2 IMPACT ON HUMAN RESOURCES

4.2.1 Impact on Land Use

Land use impacts from substation construction are usually determined by the amount of land (of whatever use) displaced by the actual structure and by the compatibility of the substation with adjacent land uses. During construction, temporary impacts to land use at the chosen site could occur due to the movement of workers and materials through the area. Construction noise and dust, as well as temporary disruption of traffic flow, may also temporarily affect residents and businesses in the area immediately adjacent to the chosen site. Coordination among CPS Energy, contractors, and landowners regarding access to the site and construction scheduling should minimize these disruptions.

For a project of this nature in a suburban setting, the primary criterion considered to measure potential land use impacts is proximity to habitable structures (i.e., residences, businesses, schools, churches, hospitals, nursing homes, etc.). Habitable structures located within the actual footprint of the alternative substation sites as well as within 300 ft of the alternative substation sites were determined from evaluating aerial photography and were verified, where possible, in the field. Of the 11 alternative sites, only three sites contain habitable structures within the footprint of their respective proposed locations, sites 6, 10, and 11. All of these sites have one habitable structure located within their respective footprints. When comparing sites based on habitable structures

within 300 ft (excluding any that are located within each site's footprint), sites 1 and 6 have the fewest, with 1 habitable structure, followed by sites 2, 3, and 7 (2 structures), sites 9, 10, and 11 (3 structures), and sites 4 and 5 (5 structures). Site 8 has the most habitable structures within 300 ft, with 16 structures (Table 7-1 in Section 7.0). None of the potential substation sites is located within 1,000 ft of a school.

The proposed substation should have minimal effect on communication operations in the area. A search of the FCC website revealed no AM radio, FM radio, or TV towers within the vicinity of any of the alternative substation sites or within the study area (FCC, 2012). Three cellular communication towers, found in a cluster south of the intersection of Bandera Road (SH 16) and Chimney Creek Road, are within 2,000 ft of four of the 11 alternative sites; sites 5, 6, 7, and 11 lie between 600 ft and 1,800 ft of the cellular communication towers.

4.2.2 Impact on Recreation

Potential impacts to recreational land use include the disruption or preemption of recreational activities. Site 2 occurs on land currently used as a recreational area, as property used by the Oak Valley Golf Course. Sites 1, 3, 4, 9, and 10 all occur within 1,000 ft of this golf course. Site 2 would occupy the acreage closest to Bandera Road (SH 16), whereas sites 3 and 9 occupy the upslope to the east of the golf course, with the existing Helotes-Menger 138-kV transmission line in between. Sites 1, 4, and 10 lie to the south of the golf course, across Bandera Road. Sites 5, 6, 7, 8, and 11 do not occur within 1,000 ft of any designated park or recreational area. None of the alternative substation sites occurs within 1,000 ft of Government Canyon State Natural Area.

4.2.3 Impact on Agriculture

None of the land within the study area is known to be used for agricultural purposes. Therefore, this project will not impact agriculture.

4.2.4 Impact on Transportation/Aviation

Potential impacts to transportation include temporary disruption of traffic and conflicts with proposed roadway and/or utility improvements, and increased traffic during construction of the proposed project. Such impacts, however, are usually temporary and short term.

According to FAA Regulations, Part 77 (FAA, 1975), notification of the construction of the proposed substation and/or transmission line would be required if structure heights exceed the height of an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 ft from the nearest point of the nearest runway of a public or military airport having at least one runway longer than 3,200 ft. If a runway is less than 3,200 ft, notification would be required if structure heights exceed the height of an imaginary surface extending at a slope of 50 to 1 for a distance of 10,000 ft. Notification is also required for structure heights exceeding the height of an

imaginary surface extending outward and upward at a slope of 25 to 1 for a horizontal distance of 5,000 ft from the nearest point of the nearest landing and takeoff for heliports.

Because no FAA-registered airports that fit these criteria occur within the designated parameters, FAA notification is not warranted.

4.2.5 Impact on Aesthetics

For the proposed substation project, aesthetic impacts, or impacts on visual resources, exist when the structures of a transmission line and substation system create an intrusion into, or substantially alters the character of, the existing view. The significance of the impact is directly related to the quality of the view in the case of natural scenic areas, or to the importance of the existing setting in the use and/or enjoyment of an area in the case of valued community resources and recreational areas. In order to evaluate aesthetic impacts, field surveys were conducted to determine the visibility from selected publicly accessible areas. These areas included those of potential community value as well as recreational areas.

Construction of the proposed substation could have both temporary and permanent aesthetic effects. Temporary impacts would include clearing of the site and views of the actual construction of the substation. Where vegetation is cleared, the brush and wood debris could have a temporary negative effect on the local visual environment. Permanent impacts from the project would involve the views of the substation and/or the accompanying transmission lines.

Aesthetic impacts from the construction of this project are considered to be moderate. The potential substation sites are located in an area that has experienced some degree of alteration due to transportation facilities and residential and commercial development. The aesthetic analysis is generally based on the potential visual impacts to publicly accessible areas (highways and other well-traveled roads, community facilities, parks, etc.). Seven of the potential substation sites are within the foreground visual zone of Bandera Road (sites 1, 2, 4, 5, 6, 8, and 10).

Sites 4 and 5 are located in areas of undeveloped woodland, but within proximity of scattered commercial and residential buildings along Bandera Road. Site 9 is also located in an area of undeveloped woodland, across the existing Helotes-Menger 138-kV transmission line from several residential structures. Some vegetation clearing has already been conducted at sites 1, 3, 6, 10, and 11, and sites 2, 7, and 8 have been totally cleared of prior woody vegetation. CPS Energy will attempt to mitigate, as much as possible, the potential aesthetic impacts of the proposed project in the area regardless of which site is eventually selected.

One park/recreation area (the Oak Valley Golf Course) lies within the foreground visual zone (one-half mile, unobstructed), or within 1,000 ft of, some of the alternative substation sites. Site 2 would actually exist on the golf course property. Sites 1, 3, 4, 9, and 10 would be within the visual zone of

the golf course. Sites 5, 6, 7, 8, and 11 would not be within the foreground visual zone of any park or recreation area.

4.2.6 Summary of Impact on Human Resources

The primary criteria that the land use evaluation concentrated on was the number of habitable structures located within the actual footprint of the alternative substation sites as well as within 300 ft of the sites. Site 1 is adjacent to Bandera Road, has no habitable structures within the footprint, and has 1 habitable structure (a residence) located within 300 ft. Site 2 is adjacent to Bandera Road, located in a recreation area (Oak Valley Golf Course), has no habitable structures within the footprint, and has two residences located within 300 ft. Site 3 has no habitable structures within the footprint, and has two residences located within 300 ft. Site 4 is located adjacent to Bandera Road in an undeveloped lot, has no habitable structures within the footprint, and has five additional habitable structures (four residences, one commercial) located within 300 ft. Site 5 is located in an undeveloped area of woodland adjacent to Bandera Road, has no habitable structures within the footprint, and has five habitable structures (three residences, two commercial) located within 300 ft. Site 6 is located adjacent to Bandera Road, has one habitable structure (a residence) located within the footprint, and has one commercial building within 300 ft. Site 7 is located in a cleared pasture away from Bandera Road, has no habitable structures within its footprint, and two residences within 300 ft. Site 8 is located in a cleared pasture adjacent to Bandera Road, has no habitable structures within its footprint, and 16 residences within 300 ft. Site 9 is located in an undeveloped tract adjacent to the existing Helotes-Menger 138-kV transmission line, has no habitable structures within its footprint, and three residences within 300 ft. Site 10 is located adjacent to Bandera Road, has one commercial building within its footprint, and three habitable structures (two residences, one commercial) within 300 ft. None of the alternative substation sites are located within the visual zone of any schools or churches, but sites 1, 2, 3, 4, 9, and 10 are located within 1,000 ft of a recreation area (Oak Valley Golf Course).

From a land use perspective, Site 1 was ranked first, followed by sites 3, 9, and 2, respectively. Site 1 was ranked higher than sites 3 and 9 because of the fewer number of habitable structures located within 300 ft. Although Site 2 has fewer habitable structures located within 300 ft than Site 9, its location on an existing golf course would be an impact to local recreation, and thus was ranked below Site 9. Sites 4 and 5 followed, respectively, because of their proximity to the existing Helotes-Menger 138-kV line and therefore either no need for an adjoining transmission line (in the case of Site 4), or a short transmission line in the case of Site 5. Site 11 was ranked next because it is out of view from Bandera Road, but has one residence within the site's footprint. Site 10 also has one habitable structure within the site's footprint, but additionally is located on Bandera Road and would require a longer adjoining transmission line, which put it below Site 11. Sites 7, 6, and 8 were ranked 9th, 10th, and 11th, respectively, due to increasing distance from the existing Helotes-Menger 138-kV transmission line, a residence within the site's footprint in the case of Site 6, as well as proximity to the most habitable structures in the case of Site 8.

4.3 IMPACT ON CULTURAL RESOURCES

One method utilized by archeologists to assess an area for the potential occurrence of cultural resources is to identify high probability areas (HPAs). An HPA is an area that is considered to have a potential for containing previously unrecorded archeological sites. The identification of HPA is usually achieved by examining 7.5-minute topographic maps and, sometimes, aerial photography. When identifying HPAs, topography and the availability of raw material, water, and subsistence resources are all taken into consideration. Also examined are the geological processes in the immediate area. These may be considered important because geologic events may protect the integrity of an archeological site by burying it within deep sediments, or alternatively, destroying it through erosional processes.

Locations that are usually identified as HPAs for the occurrence of prehistoric sites include water crossings, stream confluences, drainages, alluvial terraces, wide floodplains, upland knolls, and areas where lithic resources could be found. Additionally, certain soil types are more favorable for preserving cultural resources. Historic sites would be expected adjacent to historic roadways, including railroads, and in areas with structural remains.

The results of the file review identified potential substation sites 2, 3, 5, and 9 as being on a potentially NRHP-eligible property (the Heimsmith-Haby-White Ranch), while substations sites 1, 4, 6, and 10 were identified as being within 1,000 ft of the potentially NRHP-eligible property. However, direct impacts to the potentially NRHP-eligible property are not anticipated as a result of the construction on sites 1, 4, 6, or 10. Additionally, all of the potential substation sites are located in areas favorable for preserving previously unrecorded archeological resources. However, the percent of area favorable for preserving archeological resources varies among the 11 potential sites.

The 11 potential substation sites were evaluated to determine the preferred substation site from a cultural resources perspective. The criteria used for the ranking included whether the potential site is located within the potentially NRHP-eligible property and the percent of the site favorable for preserving archeological resources. The 11 potential sites were placed into two different groups prior to ranking. The first group consisted of the sites (1, 4, 6, 7, 8, 10, and 11) not located within the potentially NRHP-eligible property. These substation sites were then ranked by percentage of area favorable for preserving cultural resource sites. The second group consisted of sites (2, 3, 5, and 9) located within the potentially NRHP-eligible property. These, too, were also then ranked by the percentage of area favorable for preserving archeological resources.

Of the 11 potential substation sites, seven were in group 1 as described above. These sites were then ranked by percentage of area favorable for preserving archeological resources as follows: Site 1 (6%), Site 11 (47%), Site 4 (60%), Site 6 (79%), Site 10 (94%), Site 7 (95%), and Site 8 (95%). Four potential substation sites were in group 2 as described above. Ranked by percentage of area

favorable for preserving archeological resources, Site 5 (23%), Site 3 (40%), Site 9 (48%), and Site 2 (90%) are considered to be the least preferred from a cultural resources perspective of the 11 potential sites. Therefore, the overall ranking from most to least preferred from a cultural resources perspective is as follows: 1, 11, 4, 6, 10, 7, 8, 5, 3, 9, and 2.

Summary

The cultural resources evaluator selected Site 1 as the best site from a cultural resources perspective. Although Site 1 is within 1,000 ft of a potentially NRHP-eligible ranch (the Heimsmith-Haby-White Ranch), direct impacts to this potentially NRHP-eligible property are not anticipated as a result of construction of the proposed substation. Therefore, the proposed sites were ranked by whether the site is located within the potentially NRHP-eligible property and then by the percentage of the site favorable for preserving archeological resources. In this regard, Site 1 was ranked first, followed by sites 11, 4, 6, 10, 7, 8, 5, 3, 9, and 2, respectively.

5.0 AGENCIES/OFFICIALS CONSULTED

The following local, state, and federal agencies and officials were contacted by letter in June 2012 by CPS Energy and Atkins to solicit comments, concerns, and information regarding potential environmental impacts, permits, or approvals for the construction of CPS Energy's proposed substation in Bexar County, Texas. A map of the study area was included with each letter. Sample copies of the letters and responses received as of the date of this report are included in Appendix A.

Local

- Mayor of the City of Helotes
- City of Helotes Council Members
- City of Helotes City Administrator
- Mayor of the City of San Antonio
- City of San Antonio Council Members
- City of San Antonio Economic Development Department
- City of San Antonio Planning Department
- City of San Antonio Public Works
- City of San Antonio Chief Financial Officer
- City of San Antonio Capital Improvement
- Northside Independent School District (ISD)
- San Antonio River Authority (SARA)
- San Antonio Conservation Society
- San Antonio Water System (SAWS)
- Bexar County Judge
- Bexar County Commissioners
- Bexar County Flood Control Division
- Bexar County Chief of Staff
- Bexar County Infrastructure Services
- Bexar County Economic Development
- Alamo Area Council of Governments (AACOG)
- Edwards Aquifer Authority (EAA)

State

- Texas Department of Transportation (TxDOT)
  - Department of Aviation
  - Environmental Affairs Division
- Texas Historical Commission (THC)
- Texas Parks and Wildlife Department (TPWD)
- Texas Commission on Environmental Quality (TCEQ)
- Texas Water Development Board (TWDB)

Federal

- U.S. Fish and Wildlife Service (FWS)
- U.S. Army Corps of Engineers (USACE), Fort Worth District
- U.S. Environmental Protection Agency, Region 6 (EPA)
- Natural Resources Conservation Service (NRCS)
- Federal Emergency Management Agency (FEMA), Region 6
- Federal Aviation Administration (FAA)

As of the date of this report, written responses to the June 2012 letters have been received from SAWS and SARA (local); the TxDOT Aviation Division, the TxDOT Environmental Affairs Division, the THC, and TPWD (state); and the NRCS and USACE (federal). In addition to the written responses, Atkins received verbal responses from Northside ISD and the EAA (both local).

5.1 RESPONSES FROM LOCAL AGENCIES/OFFICIALS

SAWS replied that they have reviewed their Capital Improvements Projects and found that they do not have any projects in the study area.

SARA responded with an email that included attachments for download, which provided Atkins with the Leon Creek Watershed Master Plan and Digital Flood Insurance Rate Maps for the area. As part of this floodplain information, a GIS layer for a 1% (100-year floodplain) flood in future conditions was provided. After a follow-up inquiry by Atkins as to the specified time frame of the future conditions, SARA responded that the idea is that the land would be developed sometime in the future according to existing zoning or land use plans. Where there is no existing zoning, USGS land cover data was modified to incorporate TWDB population projections based on water use planning studies in the region.

In addition to the above written responses, Bill Peters, Property Analyst, Northside ISD, during a phone conversation with the Atkins project manager, noted that the study area south of Bandera

Road was a sensitive area, with Government Canyon, Iron Horse Canyon, and subdivisions, and recommended that the substation be built north of Bandera Road. He also recommended that the substation be built far enough north of Bandera Road so that it would not be visible from the golf course. He also stated that the school district had no long-term plans to build schools in the study area. Any future schools would be built farther along Bandera Road, west of its intersection with SH 211. Similarly, Emily Thompson from EAA phoned to discuss the project and said that she may have some comments at a later date.

5.2 RESPONSES FROM STATE AGENCIES/OFFICIALS

The TxDOT Aviation Division responded that according to Title 14, US Code, Part 77 of the FAA's Federal Aviation Regulations (FAR), notice is required if the facility is either: at a 100 to 1 slope for a horizontal distance of 20,000 ft from the nearest point of the nearest runway longer than 3,200 ft; or located at a 50 to 1 slope for a horizontal distance of 10,000 ft from the nearest point of the nearest runway shorter than 3,200 ft, both excluding heliports. FAA notice is also required for any structure higher than 200 ft above the ground. FAA acknowledged there are no public use airports or heliports located within the study area. The agency noted, however, that if the criterion of FAR 77.13(1) is met, the FAA must be notified using FAA Form 7460-1, "Notice of Proposed Construction or Alteration."

The TxDOT Environmental Affairs Division replied that for any portion of the project that crosses TxDOT ROW, CPS Energy would be responsible for compliance with all applicable local, state, and federal regulations and for performing any environmental analysis. The agency provided contact information in the event that CPS Energy does plan to cross TxDOT ROW for any coordination and permitting that may be required.

The THC responded that the study area depicted on the map sent by Atkins is in an area surrounded by a high density of previously recorded archeological sites. Although two sites have been recorded within the study area, the majority of it has never been surveyed by a professional archeologist. Based on the general location, the agency recommended that a professional archeologist survey the tract, and the work should meet the minimum survey standards posted on the THC website. The agency also said that 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 their office for review. In addition, buildings 50 years old or older that are located on or adjacent to the tract should be documented with photographs and included in the report. The THC further stated that if the project is conducted on land controlled by a subsidiary of the State of Texas, a Texas Antiquities Code permit will need to be obtained from their office prior to the investigations. They then gave a URL to find lists of the most professional archeologists in Texas online, but noted that other potentially qualified archeologists not mentioned on the list may be used.

TPWD responded that they searched the Texas NDD of known records for species and rare resources within 1.5 miles of the study area boundaries. NDD Element Occurrence (EOID) records found within the delineated study area boundaries and extending 1.5 miles outside of those boundaries provide a best estimate of the species and other rare resources that could potentially occur in the project's study area. They noted that a lack of site-specific records should not be interpreted as presence/absence data, but that little information is currently available. Based on a TPWD annotated county list of rare species for Bexar County and presently known NDD records, they listed a number of species that could be impacted by proposed project activities if suitable habitat is present. This list included a number of federal- and state-listed endangered species, state-listed threatened species, species of concern, special features and natural communities, and managed lands. Some of these species, natural communities, special features, and managed lands were preceded by an asterisk, which means EOIDs exist in and/or within 1.5 miles of the study area.

TPWD also said that 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, taking into account all of the variable factors. TPWD then gave a description of the intention of NDD data, which is to assist users in avoiding harm to rare species or significant ecological features, and how the NDD does not include a representative inventory of rare resources in the state, due to the small proportion of public versus private land. They reiterated that NDD data cannot be used as presence/absence data or substitute for on-the-ground surveys. They then gave descriptions of the applicable federal regulations, including the ESA and the Migratory Bird Treaty Act, and the state regulations, including the Parks and Wildlife Code, and recommendations as to how to best adhere to each. They then requested a copy of the resulting environmental assessment prior to submittal to the PUC, if applicable. The letter finished with the specific EOIDs inside or within 1.5 miles of the study area boundaries.

5.3 RESPONSES FROM FEDERAL AGENCIES/OFFICIALS

The NRCS responded via email with a Web Soil Survey Custom Soil Resource Report for the study area, noting that one soil map unit in the valley of the study area is designated "prime farmland if irrigated." This means that if the soil has a developed source of irrigation water, the soil would meet prime farmland criteria, otherwise it would not be considered prime farmland. They then noted that hydric soil determinations are always made on site, but none of the map units in the area normally have enough hydric soil in them to identify their composition on the attached report. The NRCS also included some reports related to construction including a soil map, legend, descriptions, and soil interpretations reports on shallow excavations and reinforced concrete slabs. The soil map unit name was intended to assist in selecting areas with slope gradients under 5%. They then advised that steps be taken to minimize soil erosion during construction, and stated they would let

Atkins know if there are any conservation easements in the proposed project area as well as their locations, if any. NRCS responded with another email on July 12, 2012, with attached GIS shapefiles depicting Wetlands Reserve Program (WRP), Grassland Reserve Program (GRP), and Farm and Ranch Lands Protection Program (FRPP) Texas Conservation Easements. There are no easements in the study area.

The USACE responded by first assigning the project a project number, SWF-2012-00297, and asked that this number be used in all future correspondence regarding this project. They assigned Darvin Messer as the regulatory project manager and stated that Atkins may be contacted for additional information. USACE then referenced the Fort Worth District Regulatory Branch homepage as well as two other sources for information on submittals. They noted that it is unlawful to start work without a Department of the Army permit if one is required.

A follow-up letter from the USACE stated that based on the description of proposed work and other information, they have determined that this project will involve activities subject to the requirements of Section 404. The agency based their decision on a preliminary jurisdictional determination that there are waters of the U.S. within the project site. After review of the proposal, USACE said it appears the activity may qualify for a Nationwide Permit 12 for Utility Line Activities. Enclosed with their letter was a nationwide permit concerning the proposed placement of dredged or fill material into waters of the U.S. If the permittee complies with all the terms and conditions therein, the project may proceed. If not, they requested a reply. The nationwide permit attached remains valid until March 18, 2017, unless the nationwide permit is suspended, revoked, or modified such that the activity would no longer comply with the terms and conditions of the nationwide permit on a regional or national basis. The USACE will issue a public notice announcing the changes when they occur. Furthermore, the USACE said that activities that have commenced, or are under contract to commence, in reliance on a nationwide permit will remain authorized, provided the activity is completed within 12 months of the date of the nationwide permit's expiration, modification, or revocation, unless discretionary authority has been exercised in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d). They ended the letter by stating that continued confirmation that an activity complies with the specification and conditions, and any changes to the nationwide permit, is the responsibility of the permittee, and gave contact information. Also attached with their letter was a letter addressed to USACE from TCEQ, with attachments regarding the details of nationwide permits.

6.0 PUBLIC OPEN-HOUSE MEETING

CPS Energy held a public open-house meeting for its Ranchtown substation project. The meeting was held at the Helotes 4-H Activity Center in Helotes, Texas, on August 16, 2012 from 5:00 P.M. to 7:30 P.M. Landowners within 300 ft of the footprints of the potential substation sites were invited, as well as neighborhood associations, area residents, and local elected officials. Apart from the invitation letters, CPS Energy also publicized the meeting through local newspaper advertisements and through its website. The open house was intended to solicit comments from citizens, landowners, and public officials concerning the proposed project. The meeting had the following objectives:

- Promote a better understanding of the proposed project including the purpose, need, and potential benefits and impacts;
- Inform and educate the public with regard to the procedure, schedule, and decision-making process; and
- Ensure that the decision-making process accurately identifies and considers the values and concerns of the public and community leaders.

Information on public involvement is located in Appendix B.

At the open house meeting, rather than a formal presentation in a speaker-audience format, CPS Energy representatives and Atkins staff utilized space by setting up several information stations. Each station was devoted to a particular aspect of the siting study and was manned by CPS Energy representatives and/or Atkins staff. The stations had maps, illustrations, photographs, and/or text explaining each particular topic. Interested citizens and property owners were encouraged to visit each station in order, so that the entire process could be explained in the general sequence of project development. The information-station format is advantageous because it allows attendees to process information in a more relaxed manner, and also allows them to focus on their particular areas of interest and ask specific questions. More importantly, the one-on-one discussions with CPS Energy representatives/Atkins staff encourage more interaction from those citizens who might be hesitant to participate in a speaker-audience format.

CPS Energy representatives at the first station welcomed and signed visitors in, and handed out a questionnaire. The questionnaire solicited comments on citizen concerns as well as an evaluation of the information presented at the open-house meeting. A blank questionnaire is included in Appendix B. Following is a summary of questionnaire responses received by CPS Energy at or before the announced CPS Energy deadline for returning completed questionnaires.

A total of 45 citizens/landowners signed in at the public open-house meeting held at Helotes 4-H Activity Center on August 16, 2012. CPS Energy received 40 questionnaires. Six questions were asked on the questionnaire, the first of which was if the need for the project had been adequately

explained. Thirty-two of the respondents (80%) indicated that the project had been adequately explained, whereas four respondents (10%) indicated that the project had not been fully explained and four respondents (10%) did not reply to this particular question.

The second question asked respondents to rank a list of factors that they believed should be considered (avoided if possible) in the siting of the substation. These factors included proximity to: residential areas; floodplains/wetlands; recreational/park areas; archaeological/historic sites; commercial/industrial areas; wildlife habitat/woodlands; and schools. The rankings that were given for any given factor were then averaged by dividing the total number by the number of respondents who replied to any one factor, because not all respondents ranked all factors. The responses, from most important areas to avoid to least important areas to avoid, were:

- Residential areas
- Wildlife habitat/woodlands
- Schools
- Floodplains/wetlands
- Archaeological/historic sites
- Recreational/park areas
- Commercial/industrial areas

The third question asked if any other factors should be considered. Thirty-two of the 40 respondents (80%) answered this question, with the following responses:

- Property values/resale value
- The Sanctuary is a new subdivision and we paid extra to be on the Greenbelt
- Hiding the substation from view/aesthetics along SH 16 (Bandera Road)
- Larger residential developments should have higher priority over one or two single-family homes
- Cost effectiveness
- Established neighborhoods should have priority over new developments
- Effects of EMF on children
- Proximity to homes, rather than total number nearby
- Safety to residential areas/residents
- Privacy of residential areas
- Overall cost
- Quality of life
- How long property has been in family

- The positive development of an area
- Effect of growth on Edwards Aquifer Contributing and Recharge Zones caused/resulting from added capacity
- Creek crossing to Site 7 floods, property is also farmed
- Site 2 – golf course is man's livelihood
- Avoid highway frontage
- Avoid property previously affected by eminent domain

The fourth question asked attendees how they learned about the public open-house meeting. Thirty-seven of the 40 respondents (92.5%) answered this question, with the following responses. The number of respondents appears to exceed the total number of questionnaires received, because four of the respondents (10%) wrote more than one channel of communication.

- CPS Energy letter to landowner/business (30 respondents)
- Friends/word of mouth (8 respondents)
- Newspaper (2 respondents)
- Website (1 respondent)

The fifth question requested additional comments or questions. Thirty-three of the 40 respondents (82.5%) answered this question, with the following responses:

- Site 3 would least disrupt; impacts less residential than other options.
- Would prefer Site 3 or 7. Keep this off Bandera Road.
- Would like to see more info in local paper, better info on website, and email updates.
- Major concern is presentation of our neighborhood and potential impact on property values. Sites 1, 2, and 4 are least favorite for that reason, and loss of golf course as a recreational facility. Sacrifice cost for additional distribution/ROW for protecting my community and property values and overall aesthetics. Site 3 is best.
- Concern about the interference with radio signal for fire station on sites 5 and 6.
- Why is this substation not being considered in the undeveloped areas of the City of Helotes? Areas 1, 2, and 3 all appear to be close to existing transmission lines and there are little to no existing family homes in areas 1, 2, or 3.
- Site 8 is near a residential area and is not a good site. Site 6 is a good site, especially since owner is willing to sell and close to power line, and already existing easements.
- Substation would greatly reduce the property value of all the houses in the Sanctuary subdivision which is a major problem. Strongly disagree with Site 8 because of this.
- We have a large quarry across from the street, which is visually unappealing. If you put the substation behind our neighborhood you would cause the property value of our

development to go down. As well, the health concerns due to the magnetic field could hurt the residences in this area.

- Try to stay away from residential areas (Site 8).
- Sites that are partially located or near a floodplain would seem to tempt fate when a heavy rain comes down.
- Please take into concern the property value, location of homes and schools, and the noise these things make.
- I believe Site 5 or Site 7 would be appropriate for the new substation.
- What happens to property values? What are the health issues – have they been considered?
- I feel that a site bordering a neighborhood should not be chosen above other sites in which families would not be directly affected. We struggled and worked hard to move to an area in which we would enjoy walking out and seeing a country view. It would be devastating to have it fall apart by having a CPS substation placed in our backyard. My home borders the boundary of Site 8, and we had a balcony built to enjoy the view. I hope that the residents in my neighborhood would be greatly considered and that a different site would be chosen. Additionally, Site 8 would be more costly to build.
- Site 8 is the worst location of all the proposed locations. We have at least 25 children living on the direct road behind the substation. The reason we purchased a home in this area is because of the beautiful views, not the 150-ft towers. The value of my home will dramatically decrease. The decibels are horrible for disability that I have as a result of my military service.
- Doesn't make sense to build on Site 8 where there is a residential community, and also it would be more costly to run the transmission lines to connect to the existing lines.
- Substations should not be placed where people live because of negative quality of life, as well as loss in property values.
- Why should this be so close to a residential area when there are other sites? This will make our property value go down. Moved from Ohio and away from the city for the scenery. Connector transmission line will be very costly as well.
- Site 8 is in my backyard and I would like it taken off the list.
- Against Site 3; this piece of property has power and septic for a future house that belongs to my sister, and borders my homestead as well as my in-laws.
- Substation sites 1 through 5 would impact Hill Country look and feel. Sites 1, 4, and 5 may destroy wildlife. Sites 3, 7, and 8 look cleared and may cost less. Extra transmission lines don't look as cumbersome as 5-acre substation.
- Site 3 is the most viable, given direct access to transmission line ROW, road structure, and least disruptive to home values in the area. Site 5 would be the next best site, as there are no current homes but future owners would know in advance what they are buying into.
- Site 3 is best for everyone – not visible and not next to neighborhood, and no additional transmission lines necessary. Do not place on Bandera Road.

- Please make CPS website more transparent. Without knowing to type in "Ranch town" (in two words) it is not possible to get any information. Please provide demographic studies and data used as part of basis for the need and size calculations for this substation.
- Site 7 has been flooded during Bexar County floods.
- Sites 4 and 7 look like the best locations – less invasive for neighborhood/community.
- Find a location with a willing seller, off the highway frontage, away from homes that will not cause a huge loss of commercial value to the landowner. I understand there are multiple properties available that will meet these criteria – for that matter, put it on a remote corner of Government Canyon.
- You should consider the damage created by the Kendall Cagnon project, and buy up some land out here to offset the environmental damage done to the rural community that protects it. This concept is a total failure in that this project is providing the resources that are necessary for the promotion of the lowest form of land use for this environmental and water resource real estate. Not in the capacity of the impact created by the actual substation, but in the tremendous dangers it presents by making those resources available to our "sprawl farmers." Site 7 is bad.
- Proposed Site 3 would offer no negative visual or audible impact whatsoever, an access road already exists to this location and no transmission lines would be needed to the tie the substation into the existing transmission line. Site 3 would not be detrimental to any property (residential) or any recreational and wildlife areas. It is not in a floodplain area. Furthermore, any hum or buzzing noise would be dissipate before it reached any habitat area. Site 3 is the only site that would allow property owners to maintain the rural appearance they chose intentionally. I understand the need for the substation and for continued development, but building the station after-the-fact is unacceptable. If it had been build before these residential areas were developed, then it would be my choice to buy near it or not. If any site but Site 3 is chosen, you will have taken away my right to choose, and will destroy the natural beauty of the Hill Country. The worst possible site would be Site 1, followed equally by sites 2 and 4. Adding unsightly substation towers and substantial visible power lines would magnify the devaluation.
- Would not object to having transmission line on property, but realize there are other factors. Requests phone call or email from CPS.

The sixth and final question on the open house questionnaire asked respondents if they would like someone to follow up with them to discuss the project in more detail. Of the 40 respondents, 15 (37.5%) replied "yes," 17 (42.5%) replied "no," and 8 respondents (20%) did not reply to this particular question.

Additionally, internal project team input forms were filled out in some cases, to record issues that were brought up in conversation with concerned citizens at the public open-house meeting. Concerns brought up on these comment forms included:

- Noise from substation
- Site 7 floodplain issues – floods can cause 100-ft wide, 14-ft deep channel of water
- Helotes to Menger line not maintained per the contract, fences need fixing
- Site 5 would kill the value of the entire ranch
- Site 3 is equipped with electric and septic capabilities, have permits – ready to build
- Site 6 has an underground house as well as above-ground house
- Site 3 next to citizen's house – no trees to screen view
- Concerns with all sites but 3 and 7; lowering property value, not having reliability issues, affects beauty of the Hill Country, wants to be contacted
- Check on platting of area north of golf course
- Concerned with Site 4 – next to their property, devastating to them. Health and safety concerns
- Concerns about communication to/from fire station with substation and towers nearby
- Concerns about the substation lighting around Site 8
- Site 6 – underground house on the site

A letter to CPS Energy was also received following the public open-house meeting. This letter was in regard to Site 2 on the Oak Valley Golf Course. The writer (owner) said the proposed site has been part of the Morales family for over five generations. The golf course was started in 1986 for families of all generations to enjoy, and was built and is still owned and maintained by members of the same family. It has also provided employment for many over the last 20 years, as well as practice facilities for high school golf and elementary programs for Northside ISD. As the only lighted golf course in South Texas, three generations of golfers have learned to play here. He wrote that selecting Site 2 would devastate his family-owned small business, and selection of a proposed concealed site would be more practical and pleasing to the community.

As noted in Section 2.2.3, the CPS Energy project team decided to add three additional potential substation sites for consideration (sites 9, 10, and 11). A letter was mailed on September 18, 2012, to customers and property owners located within the immediate area of the project informing them of the new sites and requesting feedback on the new sites. Also included was a constraints map showing all 11 sites and a questionnaire. This information is located at the end of Appendix B.

CPS Energy received eight questionnaires from property owners/customers pertaining to the three new potential sites. Again, six questions were asked on the questionnaire, the first of which was if the need for the project had been adequately explained. All of the respondents (100%) indicated that the project had been adequately explained.

The second question asked respondents to rank a list of factors that they believed should be considered (avoided if possible) in the siting of the substation. These factors included proximity to residential areas, floodplains/wetlands, recreational/park areas, archaeological/historic sites, commercial/industrial areas, wildlife habitat/woodlands, and schools. The rankings that were given for any given factor were then averaged by dividing the total number by the number of respondents who replied to any one factor, because not all respondents ranked all factors. The responses, from most important areas to avoid to least important areas to avoid, were:

- Residential areas
- Floodplains/wetlands
- Schools
- Recreational/park areas
- Wildlife habitat/woodlands
- Archaeological/historic sites
- Commercial/industrial areas

The third question asked if any other factors should be considered. Seven of the eight respondents (87.5%) answered this question, with the following responses:

- Select locations that don't already have established neighborhoods
- Proximity to existing Helotes-Manger line could reduce need for additional transmission lines.
- Property values, aesthetics, noise, 24/7 lighting
- Where future residential developments will be
- The substation is also unsightly – try to remain out of view from Hwy 16 (three respondents)

The fourth question asked attendees how they learned about the public open-house meeting. Seven of the eight respondents (87.5%) answered this question; six respondents (75%) got a letter in the mail from CPS Energy, one respondent (12.5%) learned about the meeting from a neighbor, and one respondent (12.5%) did not reply to this particular question.

The fifth question requested additional comments or questions. Six of the eight respondents (75%) answered this question, with the following responses:

- Site 1 is right next to Shadow Canyon subdivision. Actually right next to our main entrance to neighborhood. These are expensive homes and this substation will have a dramatic negative impact on home values. Please consider a location that does not have existing homes built.

- Should not build within ¼ mile of residential area. If Site 8 is chosen, it would literally be in people's back yards. The site shows it is in the floodplain anyway. A site off the main line away from housing would make more sense financially.
- Living in the area, my first concern would be retaining the value of my home. Site 8 would be the worst location in my opinion.
- Please continue providing updates on a regular basis. Updates other than mail out copies at your website would be appreciated.
- Sites 1, 2, 3, 5, 6, 7, 9, 10, and 11 all appear to be away from residential and relatively close to the connecting transmission lines. Placing a substation near residential or recreation areas decreases the resale value of a residential home and negatively impacts the appearance of a recreational area. Avoiding putting this substation near a residential or recreational area should be avoided at all costs.
- I don't want to see it put in sites 3, 7, 9, or 11.

The sixth and final question on the open house questionnaire asked respondents if they would like someone to follow up with them to discuss the project in more detail. Of the eight respondents, zero (0%) replied "yes," seven (87.5%) replied "no," and one respondent (12.5%) did not reply to this particular question.

7.0 PREFERRED SITE SELECTION

Atkins, with review and assistance from CPS Energy, evaluated 11 potential substation sites for the proposed Ranchtown project, based on environmental/land use criteria. CPS Energy also took into consideration engineering, cost, operation, and maintenance factors, as well as future needs. These 11 sites were subjected to a detailed environmental analysis by Atkins, and an engineering, cost, and future needs analysis by CPS Energy. A preferred site was selected from these 11 potential sites.

7.1 ATKINS' ENVIRONMENTAL EVALUATION

Atkins used a consensus process to evaluate the potential environmental impact of the 11 potential substation sites. Atkins professionals with expertise in different environmental disciplines (terrestrial/aquatic ecology, land use/planning, and cultural resources) evaluated the 11 sites. This evaluation was based on data collected for 30 separate environmental criteria and field reconnaissance of the study area. Each person on the evaluation team independently analyzed the sites from the perspective of their particular discipline and subsequently discussed their independent results as a group. The factors of particular importance in the land use/planning evaluation was the number of habitable structures (i.e., residences, businesses, schools, churches, hospitals, nursing homes, etc.) located within the actual footprint of the potential sites, as well as within 300 ft of the sites.

The main factors considered important in the ecological evaluation was the percentage of the site with potential golden-cheeked warbler habitat and whether the site was located within Karst Zone 1 (areas known to contain endangered karst invertebrate species) and Karst Zone 2 (areas having a high probability of containing habitat suitable for listed karst invertebrate species). The cultural resources evaluation focused on whether the site is located within the potentially NRHP-eligible property (the Heimsmith-Haby-White Ranch) and by the percentage of the site favorable for preserving archeological resources. The environmental data are presented in Table 7-1.

The relationship, sensitivity, and relative importance of the major environmental criteria were determined by the evaluation group as a whole. The preferred site was selected by reaching a consensus of the group based solely on measureable environmental/land use factors. At the same time, the group ranked all 11 sites in order of their potential environmental impact. These rankings are shown in Table 7-2. It is the consensus of the Atkins environmental evaluators that Site 3 is the most favorable site after evaluating the objective criteria, followed by sites 2, 10, 7, 1, 6, 8, 5, 9, 4, and 11, respectively.

TABLE 7-1
ENVIRONMENTAL DATA FOR SITE EVALUATION
RANCHTOWN SUBSTATION

LAND USE	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
1. Number of habitable structures[1] within site footprint	0	0	0	0	0	1	0	0	0	1	1
Residential:	0	0	0	0	0	1	0	0	0	0	1
Commercial:	0	0	0	0	0	0	0	0	0	1	0
2. Number of additional habitable structures[1] within 300 ft of site	1	2	2	5	5	1	2	16	3	3	3
Residential:	1	2	2	4	3	0	2	16	3	2	3
Commercial:	0	0	0	1	2	1	0	0	0	1	0
3. Number of schools within 1,000 ft of site	0	0	0	0	0	0	0	0	0	0	0
4. Number of parks/recreational areas[2] in or within 1,000 ft of site	1	1	1	1	0	0	0	0	1	1	0
5. Number of FAA-registered airports within 20,000 ft of site	0	0	0	0	0	0	0	0	0	0	0
6. Number of private airstrips within 10,000 ft of site	0	0	0	0	0	0	0	0	0	0	0
7. Number of heliports within 5,000 ft of site	0	0	0	0	0	0	0	0	0	0	0
8. Number of commercial AM radio transmitters within 10,000 ft of site	0	0	0	0	0	0	0	0	0	0	0
9. Number of FM radio transmitters, microwave, and other electronic installations within 2,000 ft of site	0	0	0	0	3	3	3	0	0	0	3
AESTHETICS											
10. Is site within foreground visual zone[3] of Bandera Road (SH 16)?	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	No
11. Is site within foreground visual zone[3] of parks/recreational areas[2]?	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No
12. Is site within foreground visual zone[3] of churches, schools, and cemeteries?	No	No	No	No	No	No	No	No	No	No	No
ECOLOGY											
13. Percent of site in upland woodland/brushland	80	0	20	100	80	70	5	0	95	15	75
14. Percent of site in bottomland/riparian woodland	0	0	0	0	0	0	0	0	0	20	0
15. Percent of site in potential wetlands (including bottomland wetlands)	No	No	No	No	No	No	No	No	No	No	No
16. Is site in potential golden-cheeked warbler habitat?	Yes	No	No	Yes	Yes	Yes	No	No	Yes	No	Yes
17. Is site within 300 ft of potential golden-cheeked warbler habitat?	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
18. Is site in potential black-capped vireo habitat?	No	No	No	No	No	No	No	No	No	No	No
19. Is site within 300 ft of potential black-capped vireo habitat?	No	No	No	No	No	No	No	No	No	No	No
20. Is site in 100-year floodplain?	No	No	No	Yes	No	No	No	Yes	No	Yes	No
21. Is site in a karst zone[4?]	Zone 3	Zone 4	Zone 4	Zone 4	Zone 4	Zone 2 and 4	Zone 3	Zone 3	Zone 4	Zone 4	Zone 1
22. Is site in critical habitat for endangered karst invertebrates?	No	No	No	No	No	No	No	No	No	No	No
23. Is site within 500 ft of a known karst feature?	No	No	No	No	No	No	No	No	No	No	No
24. Is site in Edwards Aquifer Recharge Zone[5?]	No	No	No	No	No	No	No	No	No	No	Yes
25. Is site in Edwards Aquifer Contributing Zone[6]?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
CULTURAL RESOURCES											
26. Number of recorded cultural resource sites within site	0	0	0	0	0	0	0	0	0	0	0
27. Number of recorded cultural resource sites within 1,000 ft of site	0	0	0	0	0	0	0	0	0	0	0
28. Number of National Register-listed, determined-eligible, or potentially eligible sites within site	0	1	1	0	1	0	0	0	1	0	0
29. Number of National Register-listed, determined-eligible, or potentially eligible sites within 1,000 ft of site	1	0	0	1	0	1	0	0	0	1	0
30. Percent of site in areas of high archeological/historical site potential	6	90	40	60	23	79	95	95	48	94	47

[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis.

[2] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church.

[3] One-half mile, unobstructed.

[4] Karst Zone 1: Areas known to contain endangered karst invertebrate species
Karst Zone 2: Areas having a high probability of suitable habitat for endangered karst invertebrate species
Karst Zone 3: Areas that probably do not contain endangered karst invertebrate species
Karst Zone 4: Areas that require further research but are generally equivalent to Zone 3; sections could be classified as Zone 2 or Zone 5 as more information becomes available

[5] Water Pollution Abatement Plan (WPAP) required

[6] Contributing Zone Plan required if more than 5 acres of disturbance (including access roads)

TABLE 7-2
ENVIRONMENTAL RANKING OF POTENTIAL SITES
RANCHTOWN SUBSTATION

	Site			
Ranking	Land Use	Ecology	Cultural Resources	Consensus
1st	1	2	1	3
2nd	3	3	11	2
3rd	9	10	4	10
4th	2	7	6	7
5th	4	8	10	1
6th	5	6	7	6
7th	11	1	8	8
8th	10	5	5	5
9th	7	9	3	9
10th	6	4	9	4
11th	8	11	2	11

From a land use perspective, Site 1 was ranked first, followed by sites 3, 9, and 2, respectively. Site 1 was ranked higher than sites 3 and 9 because of the fewer number of habitable structures located within 300 ft. Although Site 2 has fewer habitable structures located within 300 ft than Site 9, its location on an existing golf course would be an impact to local recreation, and thus was ranked below Site 9. Sites 4 and 5 followed, respectively, because of their proximity to the existing Helotes-Menger 138-kV line and therefore either no need for an adjoining transmission line (in the case of Site 4), or a short transmission line in the case of Site 5. Site 11 was ranked next because it is out of view from Bandera Road, but has one residence within the site's footprint. Site 10 also has one habitable structure within the site's footprint, but additionally is located on Bandera Road and would require a longer adjoining transmission line, which put it below Site 11. Sites 7, 6, and 8 were ranked 9th, 10th, and 11th, respectively, due to increasing distance from the existing Helotes-Menger 138-kV transmission line, a residence within the site's footprint in the case of Site 6, as well as proximity to the most habitable structures in the case of Site 8.

Since most of the alternative substation sites have potential endangered species issues, the ecology evaluator based the assessment on the percentage of the site with potential golden-cheeked warbler habitat and whether the site was located within Karst Zone 1 (areas known to contain endangered karst invertebrate species) and Karst Zone 2 (areas having a high probability of containing habitat suitable for listed karst invertebrate species), or within the Edwards Aquifer Recharge Zone or the 100-year floodplain. Regarding potential golden-cheeked warbler habitat, sites 2, 3, 7, 8, and 10 have no potential habitat, followed by Site 6 (70%), Site 11 (75%), sites 1 and 5 (80%), Site 9 (95%), and Site 4 (100%). Additionally, sites 2 and 8 are the only alternative substation sites located over 300 ft from potential golden-cheeked warbler habitat. Sites 7 and 8

would require transmission and/or distribution lines through potential habitat, however, and were therefore ranked lower than the other alternative sites that do not contain any habitat. Sites 4, 8, and 10 are the only sites that are located within the 100-year floodplain. With regards to site location in karst zones, sites 1, 2, 3, 4, 5, 7, 8, 9, and 10 are the best because they are located in Karst Zone 3 or 4, followed by Site 6 (approximately 65% in Karst Zone 2), and Site 11, which is entirely in Karst Zone 1. Site 11 is also the only site located within the Edwards Aquifer Recharge Zone. Therefore, from an ecological perspective, Site 2 was ranked first, followed by sites 3, 10, 7, and 8, respectively. Site 11 would be the most impacting site from an ecological perspective and thus was ranked last.

The cultural resources evaluator selected Site 1 as the best site from a cultural resources perspective. Although Site 1 is within 1,000 ft of a potentially NRHP-eligible ranch (the Heimsmith-Haby-White Ranch), direct impacts to this potentially NRHP-eligible property are not anticipated as a result of construction of the proposed substation. Therefore, the proposed sites were ranked by whether the site is located within the potentially NRHP-eligible property and then by the percentage of the site favorable for preserving archeological resources. In this regard, Site 1 was ranked first, followed by sites 11, 4, 6, 10, 7, 8, 5, 3, 9, and 2, respectively.

Based on a group discussion of the relative value and importance of each set of criteria (human, cultural, and natural resources), it was the consensus of the group that Site 3 is the first choice, followed by sites 2, 10, 7, 1, 6, 8, 5, 9, 4, and 11, respectively. While the group put most weight on endangered species, additional consideration was given to the proximity of habitable structures and parks, the Heimsmith-Haby-White Ranch (a potentially NRHP-eligible property), percent coverage of soils favorable for preserving cultural resources, and the length of potential transmission lines. The top three sites, sites 3, 2, and 10 were very close and difficult to separate. None of these sites contains potential golden-cheeked warbler habitat, although sites 3 and 10 are within 300 ft of habitat. Site 3 was ranked ahead of Site 2 because Site 2 is a recreational area (Oak Valley Golf Course). Site 2 was ranked ahead of Site 10 because Site 2 has no habitable structures within the footprint (Site 10 has a commercial structure) and is not within 300 ft of golden-cheeked warbler habitat (whereas Site 10 is within 300 ft of habitat). Although no potential golden-cheeked warbler habitat occurs at Site 7, subsequent transmission and distribution lines would have to cross potential habitat. Site 7 was preferred to Site 1 because it would impact less potential golden-cheeked warbler habitat, and Site 1 was ranked ahead of Site 6 because Site 6 has a residence. Although Site 8 contains no potential golden-cheeked warbler habitat, it has 16 residences within 300 ft and is partially within a floodplain; it was thus ranked below Site 6.

Of the remaining four sites, Site 11 is within potential golden-cheeked warbler habitat and is also the only site within Karst Zone 1 (areas known to contain endangered karst invertebrate species). Thus, it was ranked last (11th). While sites 4, 5, and 9 all contain at least 80% potential golden-cheeked warbler habitat, Site 4 has 100% and would also have a visual impact from people travelling along Bandera Road. It was thus ranked as the second-worst site (10th). Site 9 was

ranked as the third-worst site (9th) because it contains about 95% potential golden-cheeked warbler habitat, whereas Site 5 (ranked 8th) contains 80%. Furthermore, the potential habitat on Site 9 is of a better quality than that on Site 5.

7.2 CPS ENERGY'S EVALUATION

7.2.1 Evaluation Criteria

CPS Energy conducted an extensive review of Atkins' environmental site analysis for the 11 potential sites listed. CPS Energy also considered other constraints including engineering, transmission and distribution access, land availability and compatibility, and costs.

- **Transmission:** Near an existing transmission line (avoids/minimizes acquisition of new transmission easements and/or new transmission line crossings).
- **Distribution:** Near an existing distribution line or existing distribution path (minimizes construction of new distribution lines and acquisition of new distribution easement).
- **Land Availability/Compatibility:** Centrally located among the geographic areas to be served, compatibility with area development, accessibility, property on market.
- **Schedule/Cost:** Overall costs (transmission, substation, and distribution cost) and schedule risks.

7.2.2 Evaluation

Site 1

Transmission:

- New transmission line needed (1,000 ft).

Distribution:

- Distribution lines could immediately exit the station east or west on either side of Bandera Road.

Land Availability/Compatibility:

- A good location adjacent to the Bandera Road and moderately close to the transmission line.
- Located near the geographic areas to be served with access to a public roadway.
- The site is located in the Edwards Aquifer Contributing Zone.
- The site is located within potential golden-cheeked warbler habitat.
- The site is located within 300 ft of one habitable structure.
- Most of the property is for sale.

Schedule/Cost:

- Overall estimated cost: 6% more than lowest.
- The site is located within golden-cheeked warbler habitat and creates a minimum schedule delay of 3 years, which is not acceptable to the project.

Site 2

Transmission:

- New transmission line needed (250 ft).

Distribution:

- Distribution lines could immediately exit the substation east or west on either side of Bandera Road.

Land Availability/Compatibility:

- Ranked best for land use and a good location adjacent to Bandera Road and close to the transmission line.
- Located near the center of geographic areas to be served with access to public roadway.
- The site is located in the Edwards Aquifer Contributing Zone
- The site is located within 300 ft of two habitable structures.
- This site is one of only two sites not located within 300 ft of potential golden-cheeked warbler habitat.

Schedule/Cost:

- This site has the highest cost of the 11 sites at 75% more than the lowest cost site, and 30% more than the 10th-highest cost site (Site 11).

Site 3

Transmission:

- No transmission easement will be required.
- The site is adjacent to the existing transmission line.

Distribution:

- Distribution line installation would be needed to exit the circuits to Bandera Road.
- We also have limited paths for future circuits, creating a risk; the circuits would need to be placed underground to Bandera Road, significantly raising the cost for the substation.

Land Availability/Compatibility:

- The site is adjacent to the transmission line and within a short distance to Bandera Road.
- Located near the geographic areas to be served.

- The site is within 300 ft of golden-cheeked warbler habitat.
- The site is located within the Edwards Aquifer Contributing Zone.
- The site is within 300 ft of two habitable structures.

Schedule/Cost:

- Overall estimated cost: 18% more than lowest.
- The site is located within 300 ft of potential golden-cheeked warbler habitat that creates a potential for permitting delays.

Site 4

Transmission:

- No transmission easement will be required.
- The site is adjacent to the existing transmission line.

Distribution:

- Distribution lines could immediately exit the station east or west on either side of Bandera Road.

Land Availability/Compatibility:

- Ranked best for land use.
- The site is adjacent to Bandera Road and close to the transmission line.
- Located near the center of geographic areas to be served with access to a public roadway.
- The site is within 300 ft of five habitable structures.
- The site is located within golden-cheeked warbler habitat.
- The site is located within the Edwards Aquifer Contributing Zone.
- The property owner is willing the sell the property.

Schedule/Cost:

- Overall estimated cost: 11% more than the lowest.
- The site is located within potential golden-cheeked warbler habitat that creates a minimum schedule delay of 3 years, which is not acceptable to the project.

Site 5

Transmission:

- New transmission line needed (1,750 ft).

Distribution:

- Distribution lines could immediately exit the station east or west on either side of Bandera Road.

Land Availability/Compatibility:

- Located adjacent to Bandera Road and moderately close to the transmission line.
- Located near the geographic areas to be served with access to the public roadway.
- The site is within 300 ft of five habitable structures.
- The site is located within potential golden-cheeked warbler habitat.
- The site is located within the Edwards Aquifer Contributing Zone.

Schedule/Cost:

- Overall estimated cost: 7% more than lowest.
- The site is located within potential golden-cheeked warbler habitat that creates a minimum schedule delay of 3 years, which is not acceptable to the project.

Site 6

Transmission:

- New transmission line needed (2,650 ft).
- The second-longest transmission line.

Distribution:

- Distribution lines could immediately exit the station east or west on either side of Bandera Road.

Land Availability/Compatibility:

- Location adjacent to Bandera Road and moderately close to the transmission line.
- Located near the geographic areas to be served with access to public roadways.
- The site is located within potential golden-cheeked warbler habitat.
- The site has one habitable residence located within the site location.
- The site is located in the Edwards Aquifer Contributing Zone.
- The site is for sale.

Schedule/Cost:

- Overall estimated cost: 9% more than the lowest.
- The site is located within potential golden-cheeked warbler habitat that creates a minimum schedule delay of 3 years, which is not acceptable to the project.

Site 7

Transmission:

- New transmission line needed (1,650 ft).
- Clearing potential golden-cheeked warbler habitat will be required to build the line.

Distribution:

- Distribution line installation will be required to extend the exits to Bandera Road and clearing potential golden-cheeked warbler habitat will be required to build the line.
- We also have limited paths for future circuits, creating a risk; the circuits would need to be placed underground to Bandera Road, raising the cost of the substation.

Land Availability/Compatibility:

- The location is moderately close to the transmission line and located near the geographic areas to be served.
- The site is within 300 ft of two habitable structures
- The site is located within 300 ft of potential golden-cheeked warbler habitat.
- The site is within the Edwards Aquifer Contributing Zone.

Schedule/Cost:

- Overall estimated cost: 30% more than the lowest.
- The site is located within 300 ft of potential golden-cheeked warbler habitat that creates a potential for permitting delays. However, building the transmission and distribution lines for the station will cause a minimum schedule delays of 3 years, which is not acceptable to the project.

Site 8

Transmission:

- New transmission line needed (3,250 ft).
- The longest transmission line length.
- Clearing potential golden-cheeked warbler habitat would be required to build the line.

Distribution:

- Distribution lines could immediately exit the station east or west on either side of Bandera Road.
- Clearing may be required if a distribution circuit is needed along the transmission line.

Land Availability/Compatibility:

- Location adjacent to Bandera Road and moderately close to the transmission line.
- The site is located within 300 ft of 16 habitable structures (the most of any site).

- The site is not located in or within 300 ft of potential golden-cheeked warbler habitat.
- The site is located within the Edwards Aquifer Contributing Zone.
- Almost half the site is located within the floodplain.

Schedule/Cost:

- Overall estimated cost: 8% more than lowest.
- The site is located within 300 ft of potential golden-cheeked warbler habitat that creates a potential for permitting delays. However, building the transmission and distribution lines for the station will cause a minimum schedule delay of 3 years, which is not acceptable to the project.

Site 9

Transmission:

- No transmission easement will be required.
- The site is adjacent to the existing transmission line.

Distribution:

- Distribution line installation would be needed to exit the circuits to Bandera Road.
- We also have limited paths for future circuits, thus creating a risk; the circuits would need to be placed underground to Bandera Road, significantly raising the cost for the substation.

Land Availability/Compatibility:

- The site is adjacent to the transmission line and within a short distance to Bandera Road.
- Located near the geographic areas to be served.
- The site is within potential golden-cheeked warbler habitat.
- The site is located within the Edwards Aquifer Contributing Zone.
- The property owner has expressed interest in selling the property.
- The site is within 300 ft of three habitable structures.

Schedule/Cost:

- Overall estimated cost: 9% more than lowest.
- The site is located within potential golden-cheeked warbler habitat that creates a minimum schedule delay of 3 years, which is not acceptable to the project.

Site 10

Transmission:

- New transmission line needed (750 ft).

Distribution:

- Distribution lines could immediately exit the station east or west on either side of Bandera Road.

Land Availability/Compatibility:

- Location adjacent to Bandera Road and close to the transmission line.
- Located near the geographic areas to be served and compatible with commercial/ industrial use in the area; access to public roadway.
- The site is within 300 ft of three habitable structures.
- The site is located within 300 ft of potential golden-cheeked warbler habitat.
- The site is located within the Edwards Aquifer Contributing Zone.
- The property owner has expressed interest in selling the property.

Schedule/Cost:

- This site is the lowest cost estimate.
- The site is located within 300 ft of potential golden-cheeked warbler habitat that creates a potential for permitting delays.

Site 11

Transmission:

- New transmission line needed (500 ft).

Distribution:

- Distribution line installation would be required to exit the circuits to Bandera Road.
- We also have limited paths for future circuits creating a risk; the circuits would need to be placed underground to Bandera Road. This site ranks least favorable for distribution.

Land Availability/Compatibility:

- The site is close to the transmission line and within a short distance of Bandera Road.
- We must cross a creek to access the substation, and significant site work would be required to develop the site.
- The site is located near the geographic areas to be served and compatible with the commercial development in the area.
- The site is within potential golden-cheeked warbler habitat.
- The site is located within the Edwards Aquifer Recharge Zone.
- The site is in within 300 ft of three habitable structures.
- The property owner has expressed interest in selling the property.

Schedule/Cost:

- Overall estimated cost: 30% more than lowest.
- The site is located within potential golden-cheeked warbler habitat that creates a minimum schedule delay of 3 years, which is not acceptable to the project.

The CPS Energy evaluation team has expertise in utility management, engineering, system planning, ROW management, and environmental stewardship. CPS Energy used a consensus process to evaluate the 11 alternative sites. CPS Energy's evaluation categories included environment and land use/availability; cost and schedule; transmission maintenance and engineering (which includes feasibility, operations, and maintenance). The team assigned relative ratings in each of the categories and selected Site 10 as the overall preferred site.

CPS Energy Ranking of 11 Potential Sites
Ranchtown Substation

Site	Cost	Maintenance*	Customer Input**	Atkins Environmental Ranking	Consensus Ranking
1	2	1	1	5	2
2	11	1	1	2	7
3	7	2	1	1	3
4	6	1	0	10	9
5	3	1	1	8	6
6	5	1	0	6	4
7	9	2	1	4	8
8	4	2	0	7	5
9	8	2	0	9	10
10	1	1	0	3	1
11	10	2	0	11	11

*Maintenance reflects the relative difficulty maintaining transmission lines to the substation. The lower the number, the lower the difficulty of maintenance.

**Customer Input reflects a property owner's willingness to sell the property: 0 means the property owner is willing to sell the property.

Sites 1, 4, 5, 6, 9, 11 are all located within potential golden-cheeked warbler habitat that creates a minimum permitting schedule delay of 3 years, which is not acceptable to the project. For that reason, sites 1, 4, 5, 6, 9, and 11 were eliminated from consideration. Sites 7 and 8 are not located within potential golden-cheeked warbler habitat but the transmission and distribution lines needed to transmit power to and from the substation will be located in potential habitat, which will trigger the same permitting delays as described above. For that reason sites 7 and 8 were eliminated from consideration.

CPS Energy Ranking of 3 Remaining Potential Sites
Ranchtown Substation

Site	Cost	Maintenance	Customer Input	Atkins Environmental Ranking	Consensus Ranking
2	11	1	1	2	3
3	7	2	1	1	2
10	1	1	0	3	1

Site 2 was eliminated due to the extreme cost associated with acquiring the property. Site 10 was selected as the recommended site over site 3 because it was the lowest cost site, was ranked the best for transmission maintenance, ranked third environmentally, and the property owner expressed a desire to sell the property. Site 3 would cost more to develop and the property owner was not interested in selling the property.

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Appendix A

Agency Correspondence

June 29, 2012

«Prefix» «First_Name» «Last_Name»
«TitleDepartment»
«AgencyCompany»
«Address1»
«City», «State» «Zip»

Dear «Salutation» «Last_Name»

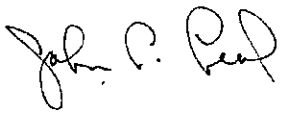
Enclosed please find a copy of correspondence from the Atkins firm, distributed on our behalf, to affected and impacted local government organizations and political entities notifying them of the intent of CPS Energy to construct a new electric substation in Bexar County. The proposed substation would be built in the northwest area of San Antonio near Helotes. The proposed substation would be connected to the existing Helotes to Menger 138-kilovolt (kV) transmission line to improve reliability and provide for an increase in load growth within an area of our service territory. Once the site is selected the projected coverage area of the substation is estimated at five acres.

The purpose of this correspondence is to formally notify you of the project and if upon your review of the enclosed materials, should you have reason to do so, we request that you formally communicate to any comment or concerns regarding the siting and potential environmental effects from the construction of these facilities directly to the attention of: Derek Green, Atkins Senior Project Manager, at 512-342-3380 or Atkins North America Inc., 6504 Bridge Point Parkway, Ste. 200, Austin, TX 78730.

Please do not hesitate to contact me should you have any questions or comments.

Thank you for your support.

Regards,



John C. Leal
Senior Manager, Local Government Relations
CPS Energy – External Relations
210-353-3072

Enclosures 2

Salutation	Prefix	First Name	Middle	Last Name	Title/Department	Agency/Company	Address1	City	State	Zip
Mr.	Mr.	John		Kessel	City Administrator	City of Helotes	12951 Bandera Rd.	Helotes	TX	78023
Mayor	The Honorable	Tom		Schoolcraft	Mayor of Helotes	City of Helotes	12951 Bandera Rd.	Helotes	TX	78023
Councilman	The Honorable	Edward		Villanueva	Councilman, Place 1	City of Helotes	12951 Bandera Rd.	Helotes	TX	78023
Councilman	The Honorable	Alex		Blue	Councilman, Place 2	City of Helotes	12951 Bandera Rd.	Helotes	TX	78023
Councilman	The Honorable	Bert		Buys	Councilman, Place 3	City of Helotes	12951 Bandera Rd.	Helotes	TX	78023
Councilwoman	The Honorable	Cynthia		Massey	Councilwoman, Place 4	City of Helotes	12951 Bandera Rd.	Helotes	TX	78023
Councilman	The Honorable	Paul		Friedrichs	Councilman, Place 5	City of Helotes	12951 Bandera Rd.	Helotes	TX	78023

Salutation	Prefix	First Name	Middle	Last Name	Title/Department	Agency/Company	Address1	City	State	Zip
Judge	The Honorable	Nelson		Wolff	County Judge	Bexar County Courthouse	101 W. Nueva, 10th floor	San Antonio	TX	78205
Commissioner	The Honorable	Sergio		Rodriguez	Bexar County Commissioner		101 W. Nueva, 10th floor	San Antonio	TX	78205
Commissioner	The Honorable	Paul		Elizondo	Bexar County Commissioner		101 W. Nueva, 10th floor	San Antonio	TX	78205
Commissioner	The Honorable	Kevin		Wolff	Bexar County Commissioner		101 W. Nueva, 10th floor	San Antonio	TX	78205
Commissioner	The Honorable	Tommy		Adkisson	Bexar County Commissioner		101 W. Nueva, 10th floor	San Antonio	TX	78205
Ms.	Ms.	Ruby	A.	Webb	Chief of Staff	Bexar County	101 W. Nueva, 10th floor	San Antonio	TX	78205
Mayor	The Honorable	Julian		Castro	Mayor of San Antonio		P.O. Box 839966	San Antonio	TX	78205
Councilwoman	The Honorable	Diego		Bernal	Councilwoman, District 1	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilwoman	The Honorable	Ivy		Taylor	Councilwoman, District 2	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilwoman	The Honorable	Leticia		Ozuna	Councilwoman, District 3	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilman	The Honorable	Rey		Saldana	Councilman, District 4	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilman	The Honorable	David		Medina	Councilman, District 5	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilman	The Honorable	Ray		Lopez	Councilman, District 6	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilman	The Honorable	Cris		Medina	Councilman, District 7	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilman	The Honorable	Reed		Williams	Councilman, District 8	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilwoman	The Honorable	Elisa		Chan	Councilwoman, District 9	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Councilman	The Honorable	Carlton		Soules	Councilman, District 10	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Mr.	Mr.	Ben		Gorzell	Chief Financial Officer	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Mr.	Mr.	Majed		Al-Ghafry	Director, Public Works	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Mr.	Mr.	Michael		Frisbie	Director, Capital Improvement	City of San Antonio	P.O. Box 839966	San Antonio	TX	78205
Mr.	Mr.	Jeff		Pullin		City of San Antonio	P.O. Box 839966	San Antonio	TX	78205

ATKINS

Atkins North America, Inc.
6504 Bridge Point Parkway, Suite 200
Austin, Texas 78730

Telephone: +1.512.327.6840
Fax: +1.512.327.2453

www.atkinsglobal.com/northamerica

June 29, 2012

Project No. 100028673

Re: Proposed CPS Energy Ranchtown Substation Project

Dear:

CPS Energy is planning to construct a new electric substation northwest of San Antonio and the Helotes area along State Highway (SH) 16 in Bexar County. The proposed Ranchtown Substation will provide additional electric capacity to support community growth and improve the reliability of electric services to homes and businesses in that area. The new substation will require an area of approximately 5 acres and will be connected to CPS Energy's existing Helotes to Menger 138-kilovolt (kV) transmission line by a short span of transmission line. We are seeking your assistance in obtaining any information that would be useful in planning the project.

CPS Energy has tasked Atkins to prepare an Environmental Assessment and Alternative Site Analysis (EA). Atkins is in the process of collecting and evaluating environmental data for the study area. We ask that your agency/office relate to us any concerns regarding the siting and potential environmental effects from the construction of this electric substation. A map showing the study area is attached for your convenience.

Atkins would like to thank you in advance for comments from your office regarding the natural, cultural or human resources in the study area. Also, we would like to know if any permits, easements, or other approvals are required by your office, or if you are aware of any proposed development or construction in the study area.

Questions may be directed to me at (512) 342-3380. Your earliest reply will be appreciated.

Sincerely,

Derek Green
Senior Project Manager

Attachment

cc: Bruce Raney, CPS Energy
Juan Sandoval, CPS Energy

FEDERAL/STATE/LOCAL AGENCIES CONTACTED
RANCHTOWN SUBSTATION PROJECT

FEDERAL

Ms. Teri Bruner
Southwest Regional Administrator
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, TX 76137-4298

Mr. Salvador Salinas
State Conservationist
NRCS Texas State Office
WR Poage Federal Building
101 South Main St
Temple, TX 76501

Mr. Al Armendariz
Regional Administrator
U. S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Mr. Ross Richardson
Floodplains Branch Chief
Attn: Mitigation
Federal Emergency Management Agency
FRC 800 N. Loop 288
Denton, TX 76209-3698

Mr. Adam Zerrenner
Field Supervisor
U.S. Fish & Wildlife Service
10711 Burnet Rd., Ste. 200
Austin, TX 78758-4455

Colonel Richard J. Muraski, Jr.
District Commander
USACE - Fort Worth District
P.O. Box 17300
Fort Worth, TX 76102-0300

STATE

Ms. Kathy Boydston
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744

Ms. Melanie Callahan
Executive Administrator
Texas Water Development Board
1700 N. Congress Avenue
Austin, TX 78701

Mr. David Fulton
Director
Texas Department of Transportation
Department of Aviation
125 E. 11th Street
Austin, TX 78701-2483

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

Mr. Carlos Swonke
Director, Environmental Affairs
Texas Department of Transportation
125 E. 11th Street
Austin, TX 78701-2483

Mr. Zak Covar
Executive Director
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

LOCAL

Mr. Dean Danos
Executive Director
Alamo Area Council of Governments
8700 Tesoro Drive, Suite 700
San Antonio, TX 78217

Mr. Rene Dominguez
City Economic Development
City of San Antonio
P.O. Box 839966
San Antonio, TX 78205

Mr. John M. Dugan, AICP
Director
City of San Antonio Planning Department
P.O. Box 839966
San Antonio, TX 78205

Ms. Suzanne B. Scott
General Manager
San Antonio River Authority
100 East Guenther Street
San Antonio, TX 78204

Mr. Mark Schnur
Planner IV, Program Planning Division
San Antonio Water System
P.O. Box 2449
San Antonio, TX 78298-2449

Mr. Bruce Haby
Manager Corporate Real Estate
San Antonio Water System
P.O. Box 2449
San Antonio, Texas 78298-2449

Mr. Karl J. Dreher
General Manager
Edwards Aquifer Authority
1615 N. St. Mary's Street
San Antonio, TX 78215

Mr. Bruce MacDougal
Executive Director
San Antonio Conservation Society
107 King William Street
San Antonio, TX 78204

Mr. John Folks
Superintendent
Northside ISD
5900 Evers Rd
San Antonio, TX 78238

Mr. Robert M. Perez
Interim Right of Way Division Manager
City of San Antonio Public Works
5103 Old Hwy 90 West
San Antonio, TX 78227

BEXAR COUNTY

Mr. David Marquez
Executive Director
Bexar County Economic Development
203 West Nueva, Suite 200
San Antonio, TX 78205

Mr. Joe A. Aceves
Executive Director
Bexar County Infrastructure Services
233 North Pecos, Suite 420
San Antonio, TX 78207

Mr. Arturo Villarreal, CFM
Flood Control Division Manager
Bexar County Infrastructure Services
233 N. Pecos
San Antonio, TX 78207

0 1,500 Feet

ATKINS

STUDY AREA LOCATION
RANCHTOWN SUBSTATION PROJECT

Path: N:\Clients\C_D\CPS_Energy\100028673\geo\agency_contact_map.mxd

San Antonio Water System

July 3, 2012

Mr. Derek Green
Senior Project Manager
Atkins North America, Inc.
6504 Bridge Point Parkway, Suite 200
Austin, Texas, 78730

Re: Proposed CPS Energy Ranchtown Substation Project

Dear Mr. Green:

Thank you for contacting the San Antonio Water System referencing the CPS Energy Ranchtown Substation Project. We have reviewed our Capital Improvements Projects and found that we do not have any projects in the study area.

Thank you again for your request. If you have any questions or need further clarification, please contact me at 210-233-3451.

Sincerely,

Mark Schnur
Planner IV

Green, Derek

From: Rafael Arias [rarias@sara-tx.org]
Sent: Tuesday, July 10, 2012 2:29 PM
To: Green, Derek
Subject: Leon Creek Watershed Master Plan files

You have been sent a secure delivery.

To access the delivery, click on the following link or copy and paste the link into any browser.

Sender : Rafael Arias
Link : https://www.sara-tx.org/bds/Login.do?id=A041406011&p1=z9j151osbfcfbhbcclcckhfj20

Sent To : derek.green2@atkinsglobal.com Expires : 8/9/12 2:17:00 PM CDT

Files:
1. LIDAR_contours.zip
2. Leon_Creek_Watershed_Master_Plan_GIS_data.zip

Sent through the San Antonio River Authority Delivery System.

Green, Derek

From: Rafael Arias [rarias@sara-tx.org]
Sent: Tuesday, July 10, 2012 2:32 PM
To: Green, Derek
Subject: Leon Creek Watershed Master Plan files 2

You have been sent a secure delivery.

To access the delivery, click on the following link or copy and paste the link into any browser.

Sender : Rafael Arias
Link : https://www.sara-tx.org/bds/Login.do?id=A041407422&p1=naj05i8sbfcfbifddlcckhdi20

Sent To : derek.green2@atkinsglobal.com Expires : 8/9/12 2:21:00 PM CDT

Files:
1. Bexar_County_DFIRM_database.zip
2. Leon_Creek_Watershed_Master_Plan_Final_Phase1_Report.zip

Sent through the San Antonio River Authority Delivery System.

Green, Derek

From: Rafael Arias [rarias@sara-tx.org]
Sent: Tuesday, July 10, 2012 3:35 PM
To: Green, Derek
Cc: Burmeister, William S
Subject: RE: Leon Creek Watershed Master Plan files 2

Let me know if you have questions or need anything else.

Rafael Arias Jr., PE, CFM
Engineer
Watershed Engineering
San Antonio River Authority
600 E. Euclid, San Antonio, TX
(210) 302-3650

-----Original Message-----
From: Green, Derek [mailto:Derek.Green2@atkinsglobal.com]
Sent: Tuesday, July 10, 2012 3:34 PM
To: Rafael Arias
Subject: RE: Leon Creek Watershed Master Plan files 2

Ralf:

Thank you. I have successfully downloaded the 4 files in the two emails.

Derek

Derek Green
Senior Project Manager - Environment and Energy

ATKINS

6504 Bridge Point Pkwy, Austin, TX, 78730 | Tel: +1 (512) 342 3380 | Fax: +1 (512) 327 2453
Email: derek.green2@atkinsglobal.com | Web: www.atkinsglobal.com/northamerica
www.atkinsglobal.com

-----Original Message-----
From: Rafael Arias [mailto:rarias@sara-tx.org]
Sent: Tuesday, July 10, 2012 2:32 PM
To: Green, Derek
Subject: Leon Creek Watershed Master Plan files 2

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Sender : Rafael Arias
Link : https://www.sara-tx.org/bds/Login.do?id=A041407422&p1=naj05i8sbfcfbifddlcckhdi20

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Files:
1. Bexar_County_DFIRM_database.zip
2. Leon_Creek_Watershed_Master_Plan_Final_Phase1_Report.zip

Sent through the San Antonio River Authority Delivery System.

Green, Derek

From: Rafael Arias [rarias@sara-tx.org]
Sent: Monday, July 16, 2012 3:43 PM
To: Green, Derek
Cc: Neblett, R. Hunter
Subject: RE: Leon Creek Watershed Master Plan files 2

Derek,

There is no specified time frame. The idea is that the land would be developed sometime in the future according to any existing zoning or land-use plans. For areas where there is no existing zoning, USGS land cover data was modified to incorporate Texas Water Development Board population projections based on water use planning studies in the region.

Hope this helps.

Rafael Arias Jr., PE, CFM
Engineer
Watershed Engineering
San Antonio River Authority
600 E. Euclid, San Antonio, TX
(210) 302-3650

-----Original Message-----
From: Green, Derek [mailto:Derek.Green2@atkinsglobal.com]
Sent: Monday, July 16, 2012 3:28 PM
To: Rafael Arias
Cc: Neblett, R. Hunter
Subject: RE: Leon Creek Watershed Master Plan files 2

Ralf, I noticed on your floodplain information that you had a layer for 1% future conditions. Over what time period iddis this projected, or does it vary. If it does vary, maybe you could provide me with a range. This is great information, and very very useful. Thanks you so much.

Derek

Derek Green
Senior Project Manager - Environment and Energy

ATKINS

6504 Bridge Point Pkwy, Austin, TX, 78730 | Tel: +1 (512) 342 3380 | Fax: +1 (512) 327 2453
Email: derek.green2@atkinsglobal.com | Web: www.atkinsglobal.com/northamerica
www.atkinsglobal.com

-----Original Message-----
From: Rafael Arias [mailto:rarias@sara-tx.org]
Sent: Tuesday, July 10, 2012 3:35 PM
To: Green, Derek
Cc: Burmeister, William S
Subject: RE: Leon Creek Watershed Master Plan files 2

Let me know if you have questions or need anything else.

Rafael Arias Jr., PE, CFM
Engineer
Watershed Engineering
San Antonio River Authority
600 E. Euclid, San Antonio, TX
(210) 302-3650

-----Original Message-----
From: Green, Derek [mailto:Derek.Green2@atkinsglobal.com]
Sent: Tuesday, July 10, 2012 3:34 PM
To: Rafael Arias
Subject: RE: Leon Creek Watershed Master Plan files 2

Ralf:

Thank you. I have successfully downloaded the 4 files in the two emails.

Derek

Derek Green
Senior Project Manager - Environment and Energy

ATKINS

6504 Bridge Point Pkwy, Austin, TX, 78730 | Tel: +1 (512) 342 3380 | Fax: +1 (512) 327 2453
Email: derek.green2@atkinsglobal.com | Web: www.atkinsglobal.com/northamerica
www.atkinsglobal.com

-----Original Message-----
From: Rafael Arias [mailto:rarias@sara-tx.org]
Sent: Tuesday, July 10, 2012 2:32 PM
To: Green, Derek
Subject: Leon Creek Watershed Master Plan files 2

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To access the delivery, click on the following link or copy and paste the link into any browser.

Sender : Rafael Arias
Link : https://www.sara-tx.org/bds/Login.do?id=A041407422&p1=naj05i8sbfcfbifddlcckhdi20

Sent To : derek.green2@atkinsglobal.com Expires : 8/9/12 2:21:00 PM CDT

Files:
1. Bexar_County_DFIRM_database.zip
2. Leon_Creek_Watershed_Master_Plan_Final_Phase1_Report.zip

Sent through the San Antonio River Authority Delivery System.

Texas Department of Transportation

AVIATION DIVISION
125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • 512/416-4500 • FAX 512/416-4510

Mr. Derek Green
Atkins North America, Inc.
6504 Bridge Point Parkway
Suite 200
Austin, Texas 78730

July 2, 2012

Dear Mr. Green;

I received your letter dated June 29, 2012 concerning Atkins job number 100028673.

Title 14, US Code, Part 77 of the Federal Aviation Administration's (FAA) Federal Aviation Regulations (FAR) requires notice to the FAA if the facility to be constructed fits either of the below listed conditions:

77.13 A 2 (ii) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport specified in paragraph (a)(5) of this section with its longest runway greater than 3,200 feet in actual length, excluding heliports. (ii) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport specified in paragraph (a)(5) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports.

77.13(1) Any construction or alteration of more than 200' above the surface of the ground at its location

There no public use airports or heliports in or near the study area.

However, if the criterion of FAR 77.13(1) is met, the FAA must be notified using FAA Form 7460-1, "Notice of Proposed Construction or Alteration".

This form and supporting documents are available at <www.faa.gov/airports_airtraffic/airports/> - Obstruction Evaluations (Part 77) - Airspace/Landing Area Forms. Alternatively, you may file this form electronically at:

https://oeaaa.faa.gov

Sincerely,

William B. Gunn
Compliance

Texas Department of Transportation
DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

August 2, 2012

Mr. Derek Green
Atkins North America, Inc.
6504 Bridge Point Parkway; Suite 200
Austin, Texas 78730

Re: CPS Energy
Proposed Ranchtown Substation Project
Environmental Assessment

Dear Mr. Green:

The Environmental Affairs Division and the San Antonio District of the Texas Department of Transportation (TxDOT) have completed their review of the proposed project information submitted in your letter dated June 29, 2012.

TxDOT has no comments to the proposed project at this time, however, for any portion of the project that crosses TxDOT right-of-way, CPS would be responsible for compliance with all applicable local, state, and federal regulations and for performing any environmental analysis. If CPS does plan to cross TxDOT right-of-way, please contact Mr. John Bohuslav in the San Antonio District Maintenance office at 210.615.5856 for any coordination and permitting that may be required.

Thank you for affording TxDOT the opportunity to comment on this proposed project. If you have any questions or require further assistance, please contact Barrlynn West in the TxDOT-San Antonio District at 210.615.5840 or Vicki Crnich in the Environmental Affairs Division at 512.416.3029.

Sincerely,

Melissa A. Neeley
Project Delivery Management Section Director
Environmental Affairs Division

TEXAS HISTORICAL COMMISSION
real places telling real stories

July 30, 2012

Derek Green
Senior Project Manager
Atkins North America, Inc
6504 Bridge Point Parkway, Suite 200
Austin, TX 78730

Re: Project review under Section 106 of the National Historic Preservation Act of 1966
Proposed CPS Energy Ranchtown Substation Project (Proj. No. 100028673)

Dear Mr. Green:

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

The review staff, led by Bradford Jones, has examined our records. According to our maps, the study area depicted on the map you have provided is in an area surrounded by a high density of previously recorded archeological sites. Although two sites have been recorded within the study area, the majority of it has never been surveyed by a professional archeologist.

Based on the general location, we would recommend that a professional archeologist survey the tract. 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 50 years old or older that are located on or adjacent to the tract should be documented with photographs and included in the report. If the project is conducted on land controlled by a subsidiary of the State of Texas, a Texas Antiquities Code permit will need to be obtained from our office prior to the investigations. You may obtain lists of most professional archeologists in Texas on-line at: www.counciloftexasarcheologists.org/?page_id=5 or www.rpanet.org. Please note that other potentially qualified archeologists not included on these lists may be used.

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 our review or if we can be of further assistance, please contact Bradford Jones at 512/463-5865.**

Sincerely,

Patricia Mercado-Allinger
for
Mark Wolfe, State Historic Preservation Officer
Executive Director

MW/bmj

TEXAS PARKS & WILDLIFE

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August 15, 2012

Derek Green
Atkins North America, Inc.
6504 Bridge Point Parkway, Suite 200
Austin, TX 78730

RE: Request for information for proposed CPS Energy Ranchtown Substation, Bexar County
Project #100028673

Dear Mr. Green:

This letter is in response to your request for information concerning potential impacts upon fish, wildlife, and plant resources or other land use concerns associated with the proposed construction of a new electric substation. Atkins North America, Inc. (Atkins) is preparing an Environmental Assessment (EA) and Alternative Site Analysis for the proposed project.

Project Description

CPS Energy proposes to construct a new electric substation in the northwest area of San Antonio near State Highway (SH) 16 in Bexar County, Texas. The new substation would require an area of approximately five acres and would be connected to CPS Energy's existing Helotes to Menger 138-kilovolt (kV) transmission line by a short span transmission line.

Texas Parks and Wildlife Department (TPWD) staff reviewed the information provided and offer the following comments.

TPWD Review Methods

As part of the review, TPWD searched the Texas Natural Diversity Database (TXNDD) of known records for species and rare resources within 1.5 miles of the study area boundary. TXNDD Element Occurrence (EOID) records found within the delineated study area boundary and extending 1.5 miles outside of that boundary provide a best estimate of the species and other rare resources that could potentially occur in the project's study area. **A lack of site-specific records should not be interpreted as presence/absence data, but instead that little information is available to date.**

Rare and Protected Species

Based on the project as presented, the TPWD annotated county list of rare species for Bexar County, and presently known TXNDD records for the general project area, the following listed species could be impacted by proposed project activities *if suitable habitat* is present:

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.state.tx.us

Federal and State Listed Endangered

Bracken Bat Cave meshweaver (*Cicurina venii*)
Cokendolpher cave harvestman (*Texella cokendolpheri*)
Government Canyon Bat Cave meshweaver (*Cucurina vespera*)
Government Canyon Bat Cave spider (*Neoleptoneta microps*)
* Madla Cave meshweaver (*Cicurina madla*)
Robber Baron Cave meshweaver (*Cicurina baronia*)
Black-capped Vireo (*Vireo atricapilla*)
* Golden-cheeked Warbler (*Setophaga chrysoparia*)
* A ground beetle (*Rhadine exilis*)
* A ground beetle (*Rhadine infernalis*)
* Helotes mold beetle (*Batrisodes venyivi*)

State Listed Threatened

Cascade Caverns salamander (*Eurycea latitans complex*)
Comal blind salamander (*Eurycea tridentifera*)
Toothless blindcat (*Trogloglanis pattersoni*)
Widemoutn blindcat (*Satan eurystomus*)
Timber/Canebrake rattlesnake (*Crotalus horridus*)

Species of Concern

* Texas salamander (*Eurycea neotenes*)
Cave myotis bat (*Myotis velifer*)
Plains spotted skunk (*Spilogale putorius interrupta*)
* Texas garter snake (*Thamnophis sirtalis annectens*)
Big red sage (*Salvia pentstemonoides*)
Bracted twistflower (*Streptanthus bracteatus*)
Hill Country wild-mercury (*Argythamnia aphoroides*)

Special Features and Natural Communities

* Ash Juniper-Oak Series (*Juniperus ashei-Quercus* spp. Series)
* Plateau Live Oak-Little bluestem Series (*Quercus fusiformis-Schizachyrium scoparium* Series)
* Karst Zone 1 and 2

Managed Lands

* Government Canyon State Natural Area

Review of the TXNDD indicates that occurrences of the species or special features shown above preceded by an asterisk (*) have been documented in and/or possibly within 1.5 miles of the project study area. Element Occurrence Records and a map of the project area are included to assist in project planning.

Please be aware that 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, taking into account all the variable factors contributing to the lack of detectable presence.

The TXNDD is intended to assist users in avoiding harm to rare species or significant ecological features. Absence of information in an area does not imply that a species is absent from that area. 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. 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 on-the-ground surveys. The TXNDD is updated continuously; for the most current and accurate information, please contact TPWD at txndd@tpwd.state.tx.us.

Please review the most current TPWD county lists as other rare species could be present depending upon habitat availability. These lists are available online at http://www.tpwd.state.tx.us/gis/ris/es/default.aspx

For the U.S. Fish and Wildlife Service (USFWS) rare species lists please visit: http://eco.fws.gov/tess_public/serviet/gov.doi.tess_public.serviets.EntryPage.

Federal Regulations

Endangered Species Act

Federally-listed animal species and their habitat are protected from "take" on any property by the ESA. Take of a federally-listed species can be allowed if it is "incidental" to an otherwise lawful activity and must be permitted in accordance with Section 7 or 10 of the ESA. Federally-listed plants are not protected from take except on lands under federal/state jurisdiction or for which a federal/state nexus (i.e., permits or funding) exists. Any take of a federally listed species or its habitat without the required take permit (or allowance) from U.S. Fish and Wildlife Service (USFWS) is a violation of the ESA.

> **Recommendation:** Much of north and northwest Bexar County consists of vegetation assemblages that provide highly suitable habitat for Golden-cheeked Warblers. In order to avoid potential negative impacts to Golden-

cheeked Warblers or suitable warbler habitat, TPWD recommends locating the proposed substation within previously disturbed (i.e., cleared) areas near the existing Helotes-Menger transmission line.

Additionally, the proposed project area boundary is located within Karst Zones 1 and 2, as identified in the USFWS 2011 Final Bexar County Karst Invertebrate Recovery Plan. Karst Zones 1 and 2 are known to contain listed karst invertebrate species or have a high probability of containing suitable karst invertebrate habitat, respectively. Karst Zone 3, karst areas that most likely do not contain listed karst species, also occurs within the project area. TPWD recommends locating the project outside of Karst Zones 1 or 2. Locating the proposed substation within Karst Zones 1 or 2 or within presumptive Golden-cheeked Warbler habitat would require coordination with the USFWS-Ecological Services Office in Austin, Texas (512-490-0057).

Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) implicitly prohibits intentional *and unintentional* take of migratory birds, including their nests and eggs, except as permitted by the USFWS. Although not documented in the TXNDD, many bird species which are not listed as *threatened* or *endangered* are protected by the MBTA and are known to be year-round residents or seasonal migrants through the proposed project area.

Review of aerial photography and vegetation models indicate that high quality habitat that may provide nesting, feeding, and cover sites for birds occurs throughout the project area boundaries.

Recommendation: In order to avoid potential negative impacts to birds and wildlife habitat, TPWD recommends identifying existing or previously disturbed areas to locate the proposed substation, if possible.

Regardless of where the substation is located, TPWD recommends scheduling any vegetation clearing or trampling outside of the April 1-July 15 migratory bird nesting season in order to fully comply with the MBTA. Contractors should be made aware of the potential of encountering migratory birds (either nesting or wintering) in the proposed project site and be instructed to avoid negatively impacting them. Please contact the U.S. Fish and Wildlife Service Southwest Regional Office (Region 2) at (505) 248-7882 for more information regarding the MBTA.

State Regulations

Parks and Wildlife Code

State law prohibits any take (incidental or otherwise) of state-listed species. Laws and regulations pertaining to state-listed endangered or threatened animals are contained in Chapters 67 and 68 of the Texas Parks and Wildlife (TPW) Code; laws pertaining to endangered or threatened plants are contained in Chapter 88 of the TPW Code.

The potential occurrence of state-listed species in the project area is primarily dependent upon the availability of suitable habitat. Direct impacts to high quality or suitable habitat therefore are directly proportional to the magnitude and potential to directly impact state-listed species. State-listed species that are most likely to occur in the project area are either dependent on aquatic environments (both surface and subsurface) or riparian corridors along creeks in the project area.

> **Recommendation:** The EA should include an inventory of existing natural resources within the alternative substation construction sites; specific evaluations should be designed to predict project impacts upon these natural resources including potential impacts upon state-listed species. Project impacts will be avoided and/or minimized by locating the proposed substation in previously disturbed areas or in areas that do not contain high or medium quality habitat. Clearing riparian vegetation to locate the proposed substation is discouraged by TPWD.

Protection of Public Parks and Recreational Lands

TPW Code §26.001 states 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 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."

The study area boundary for the project that was provided to TPWD encompasses a portion of Government Canyon State Natural Area (SNA). This TPWD property is a highly sensitive ecosystem that is managed to allow visitors the opportunity to experience an undeveloped property in the Texas Hill County.

> **Recommendation:** TPWD recommend locating the proposed substation and short transmission line in an area that avoids impacting or crossing over Government Canyon SNA. If the proposed substation is located near the SNA and would require locating any transmission line support structures on land

owned by TPWD, additional coordination with TPWD would be required per Chapter 26 to develop the project.

Please provide TPWD with a copy of the resulting environmental assessment prior to submittal to the Texas Public Utilities Commission (PUC), if applicable, as per the interagency agreement between TPWD and the PUC.

TPWD advises review and implementation of these recommendations in the preparation of the environmental document for the project. Please contact me at (361) 825-3240 or Russell.hooten@tpwd.state.tx.us if you have any questions or we may be of further assistance.

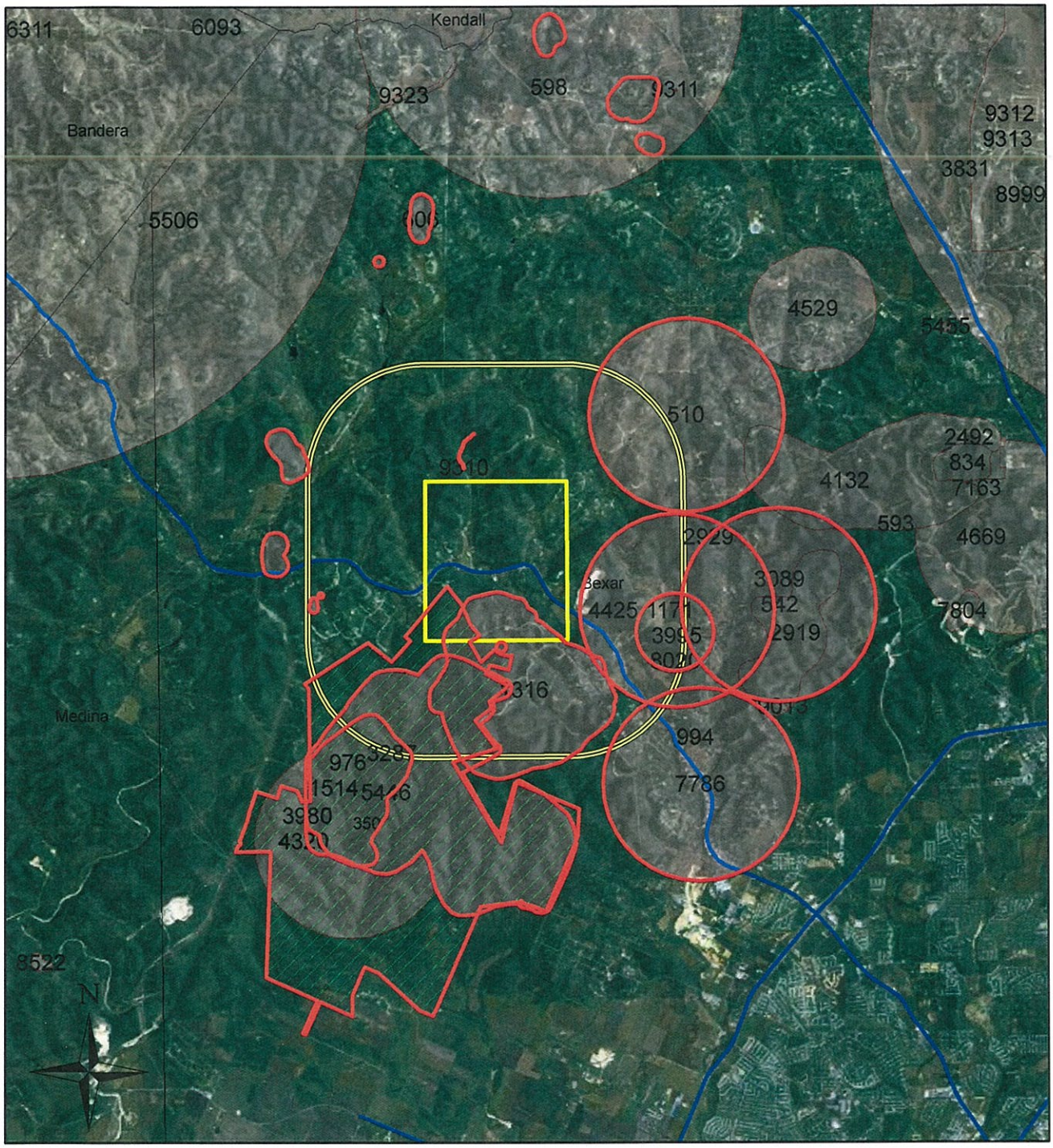
Sincerely,

Russell Hooten
Wildlife Habitat Assessment Program
Wildlife Division

/rh 1726

Attachments

cc: Mohammed Ally, Public Utilities Commission of Texas (w/o attachments)

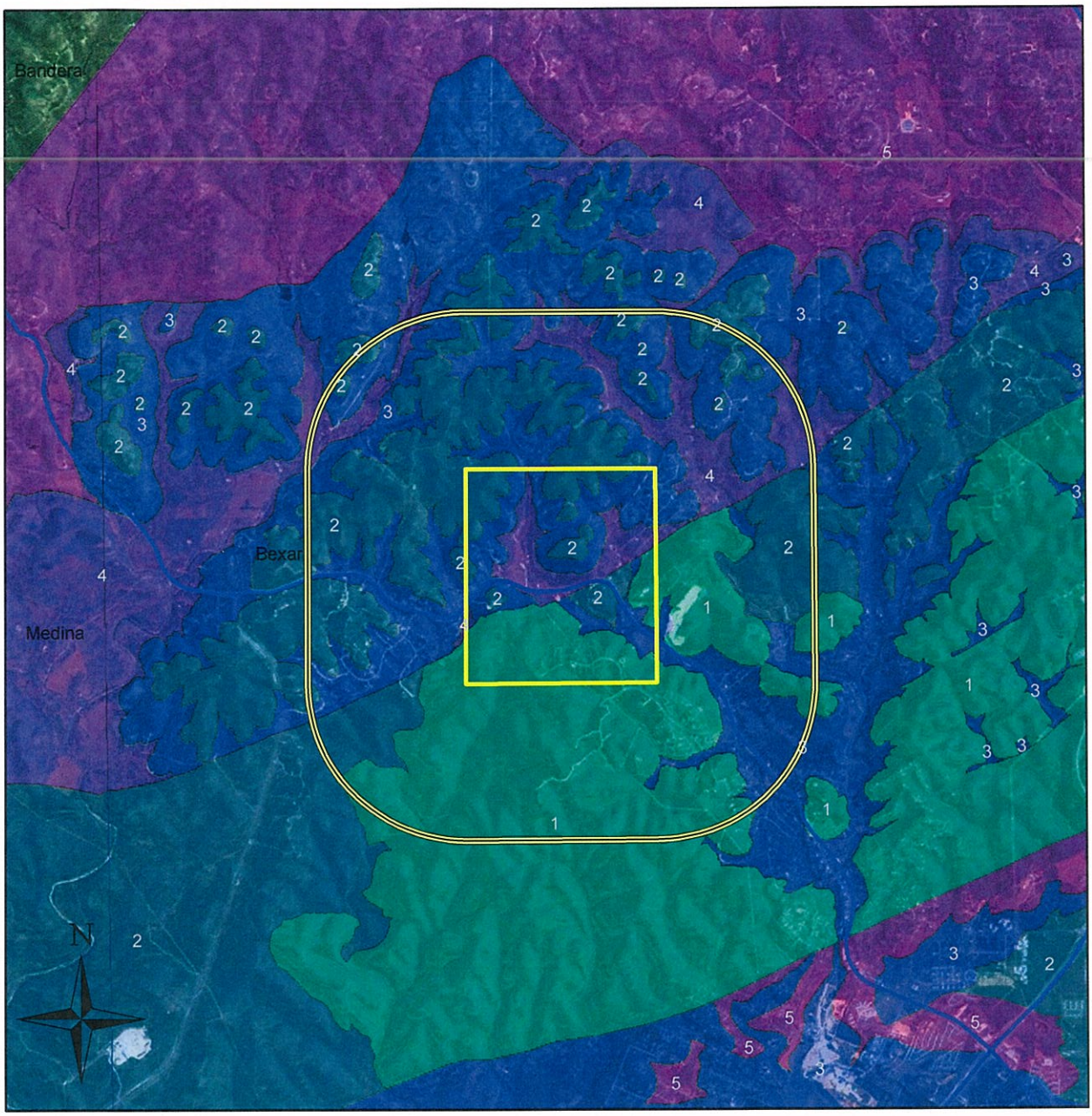


0 0.5 1 2 3 4 Miles

Rare resources near CPS Energy Ranchtown Substation site, Bexar County, Texas

- CPS Energy Ranchtown Substation
- 1.5-mile Buffe, CPS Energy Ranchtown Substation
- Element Occurrence ID#
- Gov't Canyon SNA
- Highways

TEXAS PARKS & WILDLIFE



0 0.375 0.75 1.5 2.25 3
Miles

Karst zones near CPS Energy Ranchtown Substation site, Bexar County, Texas

- CPS Energy Ranchtown Substation
- 1.5-mile Buffe, CPS Energy Ranchtown Substation
- Highways

Bexar Countyc02_karstzones_revised

KarstZone

- 1
- 2
- 3
- 4
- 5

TEXAS PARKS & WILDLIFE

Green, Derek

From: Gabriel, Wayne - NRCS, Temple, TX [Wayne.Gabriel@tx.usda.gov]
Sent: Friday, July 06, 2012 1:08 PM
To: Green, Derek
Cc: Ross, Claude - NRCS, Temple, TX; Shock, Nadine - NRCS, Temple, TX
Subject: RE: CPS Energy Ranchtown study area
Attachments: CPS Ranchtown Substation Project Soil_Report.pdf

Mr. Green,
Please find attached a Web Soil Survey Custom Soil Resource Report on the Ranchtown Substation project area.
One soil map unit in the valley is Prime Farmland if irrigated meaning that it is prime farmland if it has a developed source of irrigation water and a means to irrigate a cropland field. If it does not meet these criteria then it is not prime farmland.
Hydric soil determinations are always made on site, but none of the map units in the area normally have enough hydric soil included in them to identify their composition on the attached report.
I have also included some reports related to construction including a soil map, legend, soil map unit descriptions, and soil interpretations reports on shallow excavations, and reinforced concrete slabs.
The soil map unit name will assist you in selecting areas with slope gradients under 5 percent.
We advise that you take steps to minimize soil erosion during construction.
Claude Ross will let you know if there are any conservation easements in the proposed project area, and where they are if any.

Wayne J. Gabriel
Soil Data Quality Specialist
101 South Main Street,Temple, Texas 76501-7602 Phone (254) 742-9855, Fax (254) 742-9859
email: wayne.gabriel@tx.usda.gov

From: Green, Derek [mailto:Derek.Green2@atkinsglobal.com]
Sent: Friday, July 06, 2012 11:09 AM
To: Gabriel, Wayne - NRCS, Temple, TX
Subject: CPS Energy Ranchtown study area

Wayne:

As per our phone conversation, attached is the shapefile of the study area for CPS Energy's proposed Ranchtown substation project. CPS Energy will build their site on 5 acres within this study area.

Derek

Derek Green
Senior Project Manager - Environment and Energy

ATKINS

6504 Bridge Point Pkwy, Austin, TX, 78730 | Tel: +1 (512) 342 3380 | Fax: +1 (512) 327 2453
Email: derek.green2@atkinsglobal.com | Web: www.atkinsglobal.com/northamerica www.atkinsglobal.com

Green, Derek

From: Gabriel, Wayne - NRCS, Temple, TX [Wayne.Gabriel@tx.usda.gov]
Sent: Friday, July 06, 2012 1:11 PM
To: Green, Derek
Cc: Shock, Nadine - NRCS, Temple, TX
Subject: RE: CPS Energy Ranchtown study area

Mr. Green,
Please find a link to the Web Soil Survey information I provided today.
Report:
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx?aoicoords=((-98.71889%2029.60494,-98.74824%2029.605,-98.74824%2029.60659,-98.74817%2029.63506,-98.71881%2029.635,-98.71889%2029.60654,-98.71889%2029.60494))
Soil data explorer:
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx?aoicoords=((-98.71889%2029.60494,-98.74824%2029.605,-98.74824%2029.60659,-98.74817%2029.63506,-98.71881%2029.635,-98.71889%2029.60654,-98.71889%2029.60494))

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Email: derek.green2@atkinsglobal.com | Web: www.atkinsglobal.com/northamerica www.atkinsglobal.com

Green, Derek

From: Ross, Claude - NRCS, Temple, TX [Claude.Ross@tx.usda.gov]
Sent: Thursday, July 12, 2012 1:16 PM
To: Gabriel, Wayne - NRCS, Temple, TX; Green, Derek
Cc: Shock, Nadine - NRCS, Temple, TX
Subject: RE: CPS Energy Ranchtown study area

The NRCS GIS files for our current easement holdings can be downloaded at
http://www.tx.nrcs.usda.gov/easements.html

Claude W. Ross
Natural Resources Specialist
USDA NRCS
101 South Main
Temple, TX 76501
ph. 254.742.9822
fax 254.742.9848

From: Gabriel, Wayne - NRCS, Temple, TX
Sent: Friday, July 06, 2012 1:08 PM
To: Green, Derek
Cc: Ross, Claude - NRCS, Temple, TX; Shock, Nadine - NRCS, Temple, TX
Subject: RE: CPS Energy Ranchtown study area

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We advise that you take steps to minimize soil erosion during construction.
Claude Ross will let you know if there are any conservation easements in the proposed project area, and where they are if any.

Wayne J. Gabriel
Soil Data Quality Specialist
101 South Main Street,Temple, Texas 76501-7602 Phone (254) 742-9855, Fax (254) 742-9859
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Sent: Friday, July 06, 2012 11:09 AM
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Subject: CPS Energy Ranchtown study area

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As per our phone conversation, attached is the shapefile of the study area for CPS Energy's proposed Ranchtown substation project. CPS Energy will build their site on 5 acres within this study area.

Derek

Derek Green
Senior Project Manager - Environment and Energy

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Email: derek.green2@atkinsglobal.com | Web: www.atkinsglobal.com/northamerica www.atkinsglobal.com

Green, Derek

From: Gabriel, Wayne - NRCS, Temple, TX [Wayne.Gabriel@tx.usda.gov]
Sent: Thursday, July 12, 2012 2:13 PM
To: Green, Derek
Cc: Shock, Nadine - NRCS, Temple, TX
Subject: FW: CPS Energy Ranchtown study area

Mr. Green,
FYI below from Claude Ross. There are no easements in this project study area.

Wayne J. Gabriel
Soil Data Quality Specialist
101 South Main Street,Temple, Texas 76501-7602 Phone (254) 742-9855, Fax (254) 742-9859
email: wayne.gabriel@tx.usda.gov

From: Ross, Claude - NRCS, Temple, TX
Sent: Thursday, July 12, 2012 1:14 PM
To: Gabriel, Wayne - NRCS, Temple, TX
Subject: RE: CPS Energy Ranchtown study area

No easements in that area.

Claude W. Ross
Natural Resources Specialist
USDA NRCS
101 South Main
Temple, TX 76501
ph. 254.742.9822
fax 254.742.9848

From: Gabriel, Wayne - NRCS, Temple, TX
Sent: Friday, July 06, 2012 12:47 PM
To: Ross, Claude - NRCS, Temple, TX
Subject: FW: CPS Energy Ranchtown study area

Claude,
Are there any conservation easements in this project study area?
If so where?
Thanks

Wayne J. Gabriel
Soil Data Quality Specialist
101 South Main Street,Temple, Texas 76501-7602 Phone (254) 742-9855, Fax (254) 742-9859
email: wayne.gabriel@tx.usda.gov

From: Green, Derek [mailto:Derek.Green2@atkinsglobal.com]
Sent: Friday, July 06, 2012 11:09 AM
To: Gabriel, Wayne - NRCS, Temple, TX
Subject: CPS Energy Ranchtown study area

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Derek

Derek Green
Senior Project Manager - Environment and Energy

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United States Department of Agriculture

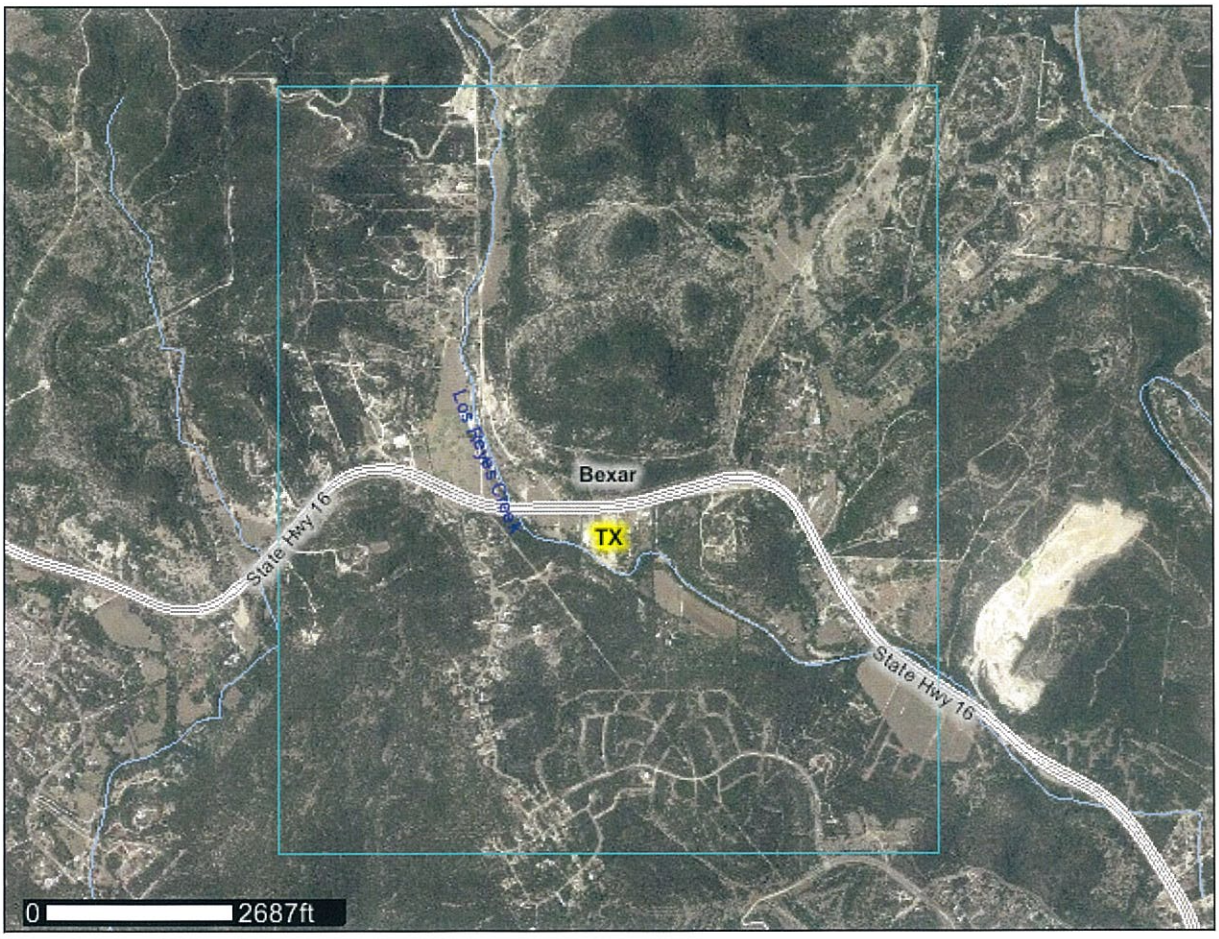
NRCS

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 Bexar County, Texas

Proposed CPS Energy Ranchtown Substation Project



July 6, 2012

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://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

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 Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the 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 Units

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
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

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

MAP INFORMATION

Map Scale: 1:22,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

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

Soil Survey Area: Bexar County, Texas
Survey Area Data: Version 13, Oct 8, 2010

Date(s) aerial images were photographed: Data not available.

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

Bexar County, Texas (TX029)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BtE	Brackett-Eckrant association, 20 to 60 percent slopes	1,205.1	51.5%
Kr	Krum clay, 1 to 5 percent slopes	413.3	17.7%
TaB	Eckrant cobbly clay, 1 to 5 percent slopes	48.8	2.1%
TaC	Eckrant cobbly clay, 5 to 15 percent slopes	189.8	8.1%
TaD	Eckrant-Rock outcrop complex, 15 to 60 percent slopes	484.1	20.7%
Totals for Area of Interest		2,341.1	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.

Bexar County, Texas

BtE—Brackett-Eckrant association, 20 to 60 percent slopes

Map Unit Setting

Elevation: 1,000 to 2,400 feet
Mean annual precipitation: 22 to 32 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 210 to 240 days

Map Unit Composition

Brackett and similar soils: 60 percent
Eckrant and similar soils: 40 percent

Description of Brackett

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Properties and qualities

Slope: 20 to 60 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 90 percent
Gypsum, maximum content: 5 percent
Available water capacity: Very low (about 1.5 inches)

Interpretive groups

Land capability (nonirrigated): 7s
Ecological site: Steep Adobe 29-35" PZ (R081CY362TX)

Typical profile

0 to 4 inches: Gravelly clay loam
4 to 12 inches: Gravelly clay loam
12 to 30 inches: Bedrock

Description of Eckrant

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Properties and qualities

Slope: 20 to 60 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.6 inches)

Interpretive groups

Land capability (nonirrigated): 7s
Ecological site: Steep Rocky 29-35" PZ (R081CY363TX)

Typical profile

0 to 10 inches: Cobbly clay loam
10 to 18 inches: Extremely stony clay
18 to 25 inches: Bedrock

Kr—Krum clay, 1 to 5 percent slopes

Map Unit Setting

Elevation: 600 to 1,300 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 63 to 70 degrees F
Frost-free period: 230 to 250 days

Map Unit Composition

Krum and similar soils: 100 percent

Description of Krum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread, riser
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from limestone

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water capacity: High (about 9.3 inches)

Interpretive groups

Land capability (nonirrigated): 3e
Ecological site: Clay Loam 29-35" PZ (R081CY357TX)

Typical profile

0 to 18 inches: Clay
18 to 50 inches: Clay
50 to 62 inches: Clay

TaB—Eckrant cobbly clay, 1 to 5 percent slopes

Map Unit Setting

Elevation: 1,000 to 2,400 feet
Mean annual precipitation: 22 to 32 inches
Mean annual air temperature: 66 to 70 degrees F
Frost-free period: 210 to 240 days

Map Unit Composition

Eckrant and similar soils: 100 percent

Description of Eckrant

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Properties and qualities

Slope: 1 to 5 percent
Surface area covered with cobbles, stones or boulders: 3.0 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.6 inches)

Interpretive groups

Land capability (nonirrigated): 7s
Ecological site: Low Stony Hill 29-35" PZ (R081CY360TX)

Typical profile

0 to 10 inches: Cobbly clay
10 to 18 inches: Extremely stony clay loam
18 to 25 inches: Bedrock

TaC—Eckrant cobbly clay, 5 to 15 percent slopes

Map Unit Setting

Elevation: 1,000 to 2,400 feet
Mean annual precipitation: 22 to 32 inches
Mean annual air temperature: 66 to 70 degrees F
Frost-free period: 210 to 240 days

Map Unit Composition

Eckrant and similar soils: 100 percent

Description of Eckrant

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Properties and qualities

Slope: 5 to 15 percent
Surface area covered with cobbles, stones or boulders: 3.0 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.6 inches)

Interpretive groups

Land capability (nonirrigated): 7s
Ecological site: Low Stony Hill 29-35" PZ (R081CY360TX)

Typical profile

0 to 10 inches: Cobbly clay
10 to 18 inches: Extremely stony clay loam
18 to 25 inches: Bedrock

TaD—Eckrant-Rock outcrop complex, 15 to 60 percent slopes

Map Unit Setting

Elevation: 300 to 8,700 feet
Mean annual precipitation: 10 to 35 inches
Mean annual air temperature: 52 to 73 degrees F
Frost-free period: 120 to 320 days

Map Unit Composition

Eckrant and similar soils: 75 percent
Rock outcrop: 17 percent
Minor components: 8 percent

Description of Eckrant

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Properties and qualities

Slope: 15 to 60 percent
Surface area covered with cobbles, stones or boulders: 5.0 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 8 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.6 inches)

Interpretive groups

Land capability (nonirrigated): 7s
Ecological site: Steep Rocky 29-35" PZ (R081CY363TX)

Typical profile

0 to 10 inches: Cobbly clay
10 to 18 inches: Extremely stony clay
18 to 25 inches: Bedrock

Description of Rock Outcrop

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, side slope

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Limestone

Properties and qualities

Slope: 15 to 90 percent
Depth to restrictive feature: 0 to 2 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 19.98 in/hr)

Interpretive groups

Land capability (nonirrigated): 8s

Typical profile

0 to 80 inches: Bedrock

Minor Components

Unnamed, minor components

Percent of map unit: 8 percent

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations 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 interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Shallow Excavations

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.

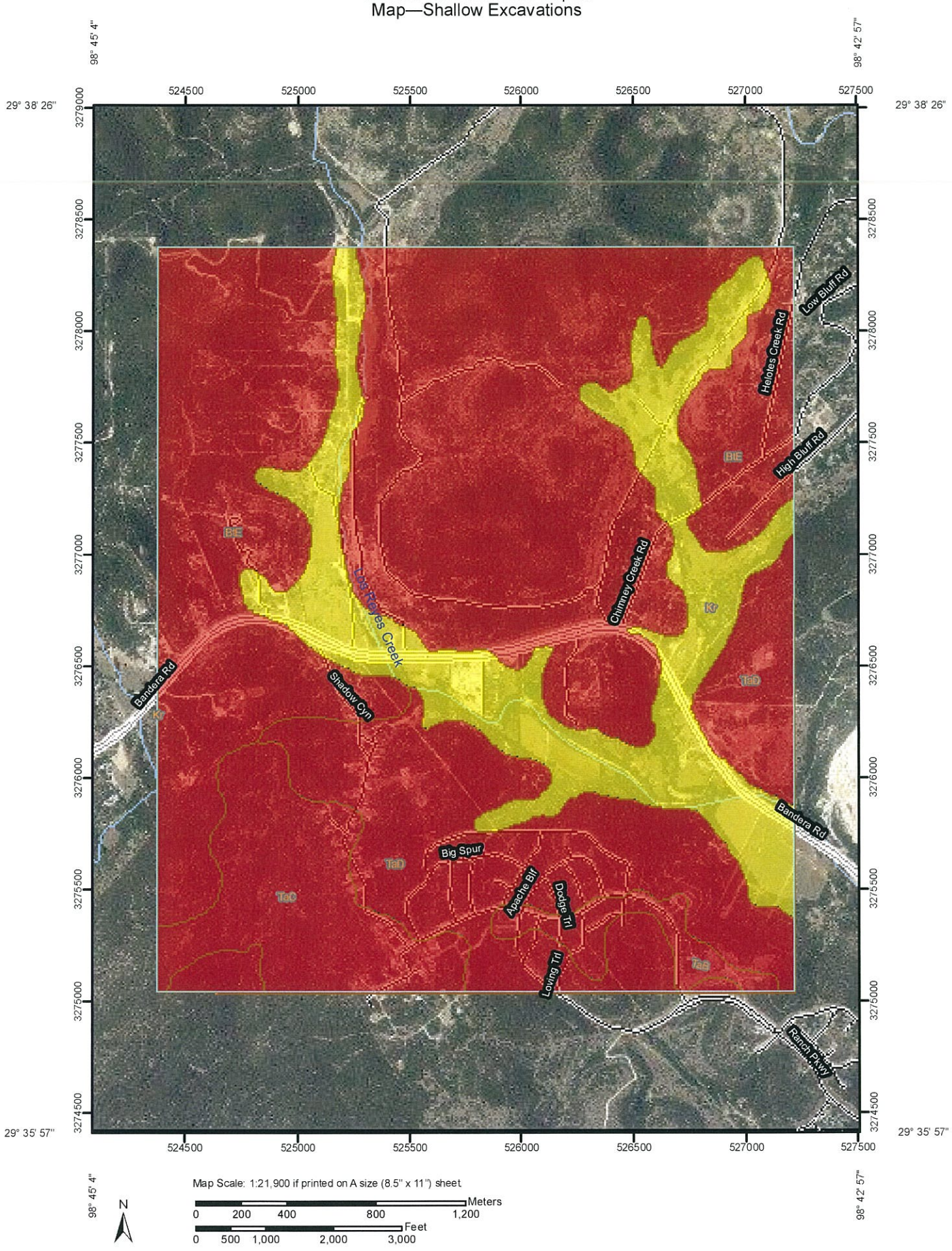
"Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Shallow Excavations



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Soil Ratings

Very limited

Somewhat limited

Not limited

Not rated or not available

Political Features

Cities

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

MAP INFORMATION

Map Scale: 1:22,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

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

Soil Survey Area: Bexar County, Texas
Survey Area Data: Version 13, Oct 8, 2010

Date(s) aerial images were photographed: Data not available.

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.

Tables—Shallow Excavations

Shallow Excavations— Summary by Map Unit — Bexar County, Texas (TX029)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BtE	Brackett-Eckrant association, 20 to 60 percent slopes	Very limited	Brackett (60%)	Depth to soft bedrock (1.00)	1,205.1	51.5%
				Too steep (1.00)		
				Unstable excavation walls (0.10)		
			Eckrant (40%)	Depth to hard bedrock (1.00)		
				Too steep (1.00)		
				Large stones (1.00)		
				Unstable excavation walls (0.10)		
Kr	Krum clay, 1 to 5 percent slopes	Somewhat limited	Krum (100%)	Too clayey (0.50)	413.3	17.7%
				Unstable excavation walls (0.10)		
TaB	Eckrant cobbly clay, 1 to 5 percent slopes	Very limited	Eckrant (100%)	Depth to hard bedrock (1.00)	48.8	2.1%
				Large stones (1.00)		
				Unstable excavation walls (0.10)		
TaC	Eckrant cobbly clay, 5 to 15 percent slopes	Very limited	Eckrant (100%)	Depth to hard bedrock (1.00)	189.8	8.1%
				Large stones (1.00)		
				Slope (0.16)		
				Unstable excavation walls (0.10)		
TaD	Eckrant-Rock outcrop complex, 15 to 60 percent slopes	Very limited	Eckrant (75%)	Depth to hard bedrock (1.00)	484.1	20.7%
				Too steep (1.00)		
				Large stones (1.00)		
				Unstable excavation walls (0.10)		
Totals for Area of Interest					2,341.1	100.0%

Shallow Excavations— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	1,927.8	82.3%
Somewhat limited	413.3	17.7%
Totals for Area of Interest	2,341.1	100.0%

Rating Options—Shallow Excavations

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Reinforced Concrete Slab (TX)

Reinforced concrete slabs are 4 to 8 inches thick and built on undisturbed soil graded to a depth of 1 to 2 feet.

Ratings for reinforced concrete slabs are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

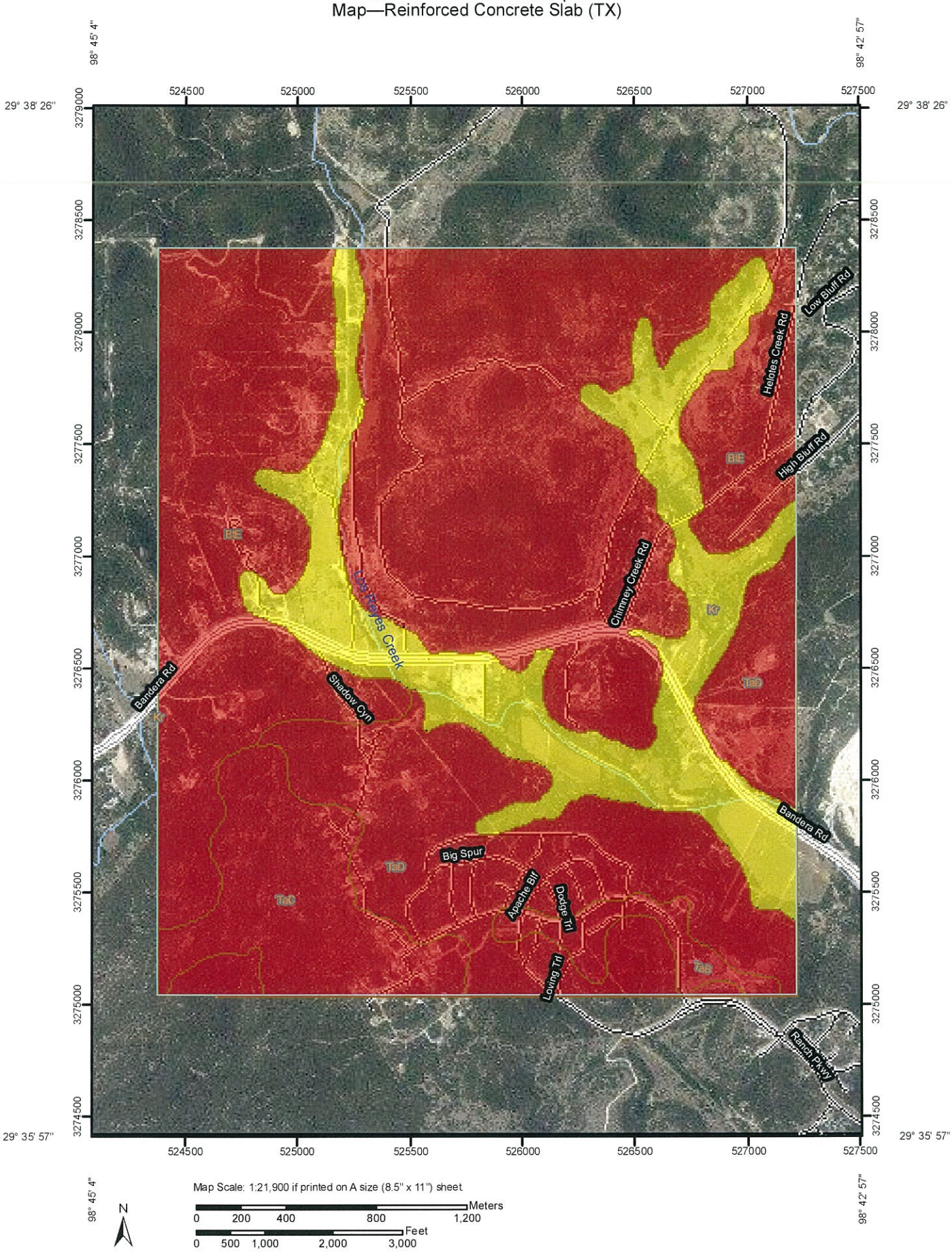
Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as the one shown for the map unit. The percent composition of each component in a particular map unit is given to help the user better understand the extent to which the rating applies to the map unit.

Other components with different ratings may occur in each map unit. The ratings for all components, regardless the aggregated rating of the map unit, can be viewed by

generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Reinforced Concrete Slab (TX)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Very limited
- Somewhat limited
- Not limited
- not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

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

MAP INFORMATION

Map Scale: 1:22,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

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

Soil Survey Area: Bexar County, Texas
Survey Area Data: Version 13, Oct 8, 2010

Date(s) aerial images were photographed: Data not available.

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.

Tables—Reinforced Concrete Slab (TX)

Reinforced Concrete Slab (TX)— Summary by Map Unit — Bexar County, Texas (TX029)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BtE	Brackett-Eckrant association, 20 to 60 percent slopes	Very limited	Brackett (60%)	Slope (1.00)	1,205.1	51.5%
			Eckrant (40%)	Slope (1.00)		
				Content of large stones (1.00)		
				High shrink-swell (0.12)		
Kr	Krum clay, 1 to 5 percent slopes	Somewhat limited	Krum (100%)	High shrink-swell (0.88)	413.3	17.7%
TaB	Eckrant cobbly clay, 1 to 5 percent slopes	Very limited	Eckrant (100%)	Content of large stones (1.00)	48.8	2.1%
				High shrink-swell (0.12)		
TaC	Eckrant cobbly clay, 5 to 15 percent slopes	Very limited	Eckrant (100%)	Content of large stones (1.00)	189.8	8.1%
				Slope (0.06)		
				High shrink-swell (0.12)		
TaD	Eckrant-Rock outcrop complex, 15 to 60 percent slopes	Very limited	Eckrant (75%)	Slope (1.00)	484.1	20.7%
				Content of large stones (1.00)		
				High shrink-swell (0.12)		
Totals for Area of Interest					2,341.1	100.0%

Reinforced Concrete Slab (TX)— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Very limited	1,927.8	82.3%
Somewhat limited	413.3	17.7%
Totals for Area of Interest	2,341.1	100.0%

Rating Options—Reinforced Concrete Slab (TX)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the proportion of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is designated as "all hydric," "partially hydric," "not hydric," or "unknown hydric," depending on the rating of its respective components.

"All hydric" means that all components listed for a given map unit are rated as being hydric, while "not hydric" means that all components are rated as not hydric. "Partially hydric" means that at least one component of the map unit is rated as hydric, and at least one component is rated as not hydric. "Unknown hydric" indicates that at least one component is not rated so a definitive rating for the map unit cannot be made.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

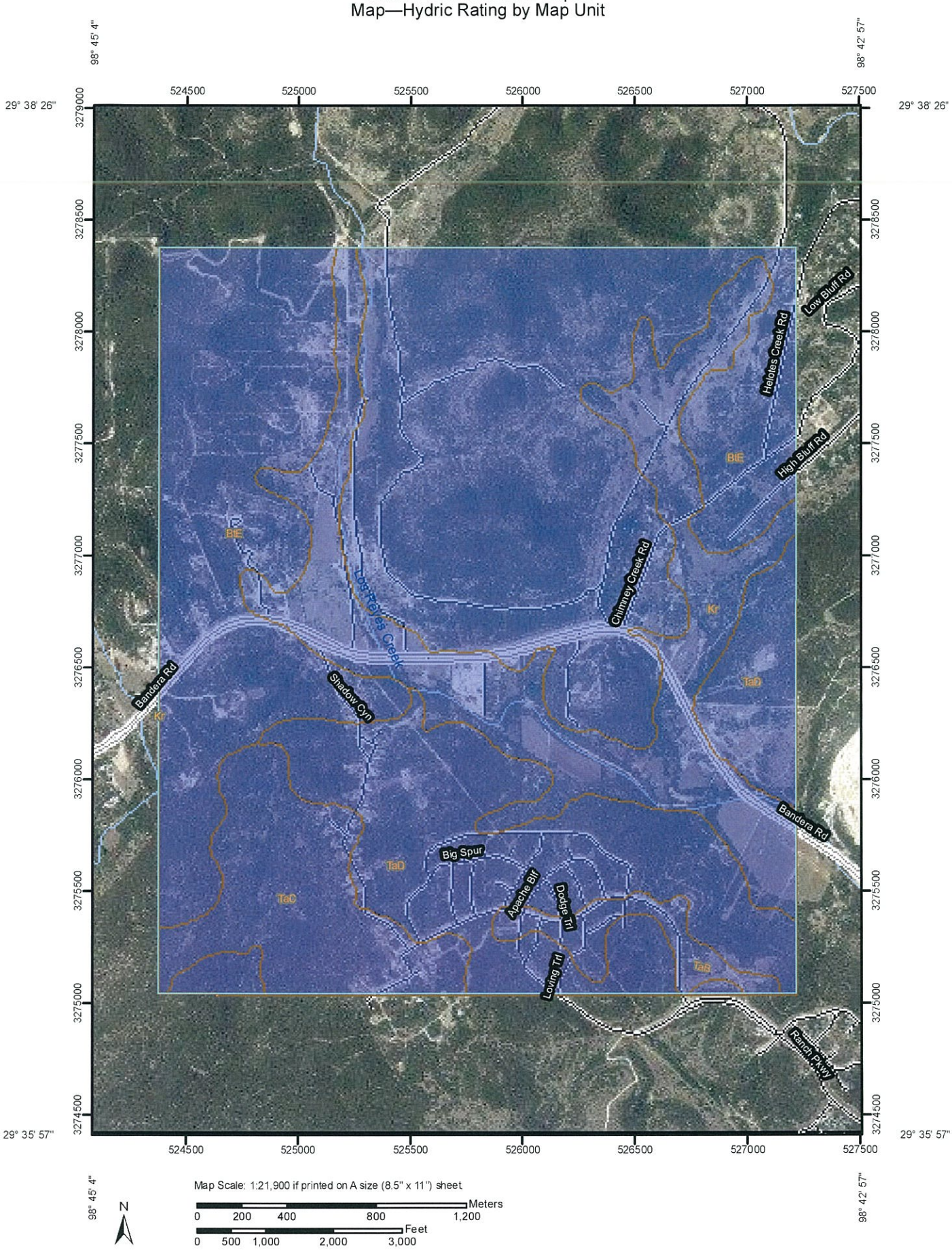
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- All Hydric
- Partially Hydric
- Not Hydric
- Unknown Hydric
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

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

MAP INFORMATION

Map Scale: 1:22,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

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

Soil Survey Area: Bexar County, Texas
Survey Area Data: Version 13, Oct 8, 2010

Date(s) aerial images were photographed: Data not available.

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—Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Bexar County, Texas (TX029)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BtE	Brackett-Eckrant association, 20 to 60 percent slopes	Not Hydric	1,205.1	51.5%
Kr	Krum clay, 1 to 5 percent slopes	Not Hydric	413.3	17.7%
TaB	Eckrant cobbly clay, 1 to 5 percent slopes	Not Hydric	48.8	2.1%
TaC	Eckrant cobbly clay, 5 to 15 percent slopes	Not Hydric	189.8	8.1%
TaD	Eckrant-Rock outcrop complex, 15 to 60 percent slopes	Not Hydric	484.1	20.7%
Totals for Area of Interest			2,341.1	100.0%

Rating Options—Hydric Rating by Map Unit

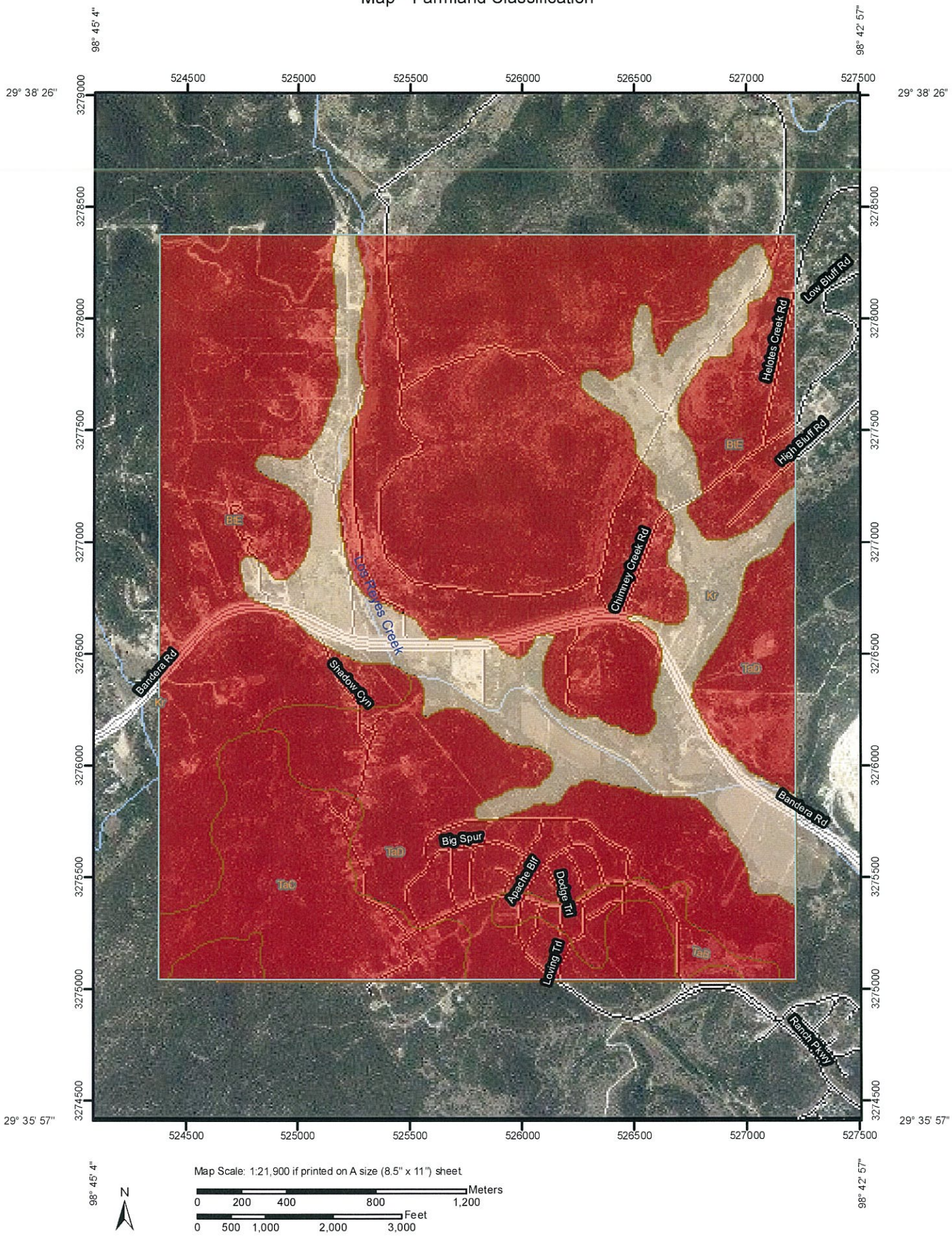
Aggregation Method: Absence/Presence

Tie-break Rule: Lower

Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Custom Soil Resource Report
Map—Farmland Classification



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

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

MAP INFORMATION

Map Scale: 1:22,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

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

Soil Survey Area: Bexar County, Texas
Survey Area Data: Version 13, Oct 8, 2010

Date(s) aerial images were photographed: Data not available.

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—Farmland Classification

Farmland Classification— Summary by Map Unit — Bexar County, Texas (TX029)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BtE	Brackett-Eckrant association, 20 to 60 percent slopes	Not prime farmland	1,205.1	51.5%
Kr	Krum clay, 1 to 5 percent slopes	Prime farmland if irrigated	413.3	17.7%
TaB	Eckrant cobbly clay, 1 to 5 percent slopes	Not prime farmland	48.8	2.1%
TaC	Eckrant cobbly clay, 5 to 15 percent slopes	Not prime farmland	189.8	8.1%
TaD	Eckrant-Rock outcrop complex, 15 to 60 percent slopes	Not prime farmland	484.1	20.7%
Totals for Area of Interest			2,341.1	100.0%

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

References

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DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

July 6, 2012

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number SWF-2012-00297, CPS Energy Ranchtown Substation Project

Derek Green
Atkins North America, Inc.
6504 Bridge Point Parkway
Suite 200
Austin, TX 78730

Dear Mr. Green:

Thank you for your letter received July 2, 2012 concerning a proposal by CPS Energy to construct a new electric substation located northwest of the City of San Antonio, Bexar County, TX. This project has been assigned Project Number SWF-2012-00297. Please include this number in all future correspondence concerning this project.

Mr. Darvin Messer has been assigned as the regulatory project manager for your request and will be evaluating it as expeditiously as possible.

You may be contacted for additional information about your request. For your information, please reference the Fort Worth District Regulatory Branch homepage at http://www.swf.usace.army.mil/regulatory and particularly guidance on submittals at http://www.swf.usace.army.mil/pubdata/environ/regulatory/introduction/submital.pdf, and mitigation at http://www.usace.army.mil/CECW/Pages/final_cmr.aspx that may help you supplement your current request or prepare future requests.

If you have any questions about the evaluation of your submittal or would like to request a copy of one of the documents referenced above, please contact Mr. Darvin Messer at the address above or telephone (817) 886-1744 and refer to your assigned project number. Please note that it is unlawful to start work without a Department of the Army permit if one is required.

Please help the Regulatory Program improve its service by completing the survey on the following website: http://per2.nwp.usace.army.mil/survey.html.

Stephen L Brooks
Chief, Regulatory Branch

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

July 25, 2012

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number SWF-2012-00297, CPS Energy Ranchtown Substation Project

Mr. Derek Green
Atkins North America, Inc.
6504 Bridge Point Parkway, Suite 200
Austin, Texas 78730

Dear Mr. Green:

Thank you for your letter received July 2, 2012, concerning the proposal by CPS Energy to construct a new electric substation located northwest of the city of San Antonio, Bexar County, Texas. This project has been assigned Project Number SWF-2012-00297. Please include this number in all future correspondence concerning this project.

Under Section 404 of the Clean Water Act the U. S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. USACE responsibility under Section 10 of the Rivers and Harbors Act of 1899 is to regulate any work in, or affecting, navigable waters of the United States. Based on your description of the proposed work, and other information available to us, we have determined this project will involve activities subject to the requirements of Section 404. The USACE based this decision on a preliminary jurisdictional determination that there are waters of the United States within the project site.

We have reviewed the proposal and based on the information provided, it appears the activity may qualify for Nationwide Permit 12 for Utility Line Activities. Please review the enclosed nationwide permit concerning the proposed placement of dredged or fill material into waters of the United States. Provided the permittee complies with all the terms and conditions therein, the project may proceed. If the permittee cannot comply with the conditions of the nationwide permit, please reply.

This nationwide permit is valid until March 18, 2017, unless prior to that date the nationwide permit is suspended, revoked, or modified such that the activity would no longer comply with the terms and conditions of the nationwide permit on a regional or national basis. The USACE will issue a public notice announcing the changes when they occur. Furthermore, activities that have commenced, or are under contract to commence, in reliance on a nationwide permit will remain

authorized provided the activity is completed within 12 months of the date of the nationwide permit's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d). Continued confirmation that an activity complies with the specifications and conditions, and any changes to the nationwide permit, is the responsibility of the permittee.

Thank you for your interest in our nation's water resources. If you have any questions concerning our regulatory program, please refer to our website at http://www.swf.usace.army.mil/regulatory or contact Mr. Darvin Messer at the address above or telephone 817-886-1744.

Please help the Regulatory Program improve its service by completing the survey on the following website: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Stephen L Brooks
for Chief, Regulatory Branch

Enclosure

Appendix B

Public Involvement Information

July 31, 2012

Dear CPS Energy Customer:

CPS Energy would like to invite you to attend an open house to learn about an upcoming project that will improve the electric reliability in your area. The Ranchtown Substation project consists of building a new substation and associated distribution lines northwest of San Antonio and Helotes along State Hwy 16 in Bexar County. The new substation will require approximately 5 acres of property and may require the addition of a short span of transmission line to the existing Helotes-Menger Transmission Line. We propose to start construction in early 2014.

At the open house we will explain our plans for the substation, and we want to hear your views and suggestions regarding the project. CPS Energy team members who will plan and build this substation will be there to meet you and answer your questions. This event will have an informal "come and go" type format consisting of information stations addressing specific areas of the project. Attendees are encouraged to review each station at their own pace and ask questions.

CPS Energy Open House
Ranchtown Substation Project
5:30pm-7:30pm August 16, 2012
Helotes 4-H Activity Center
12132 Leslie Rd. Helotes, Texas 78023

Included in this packet is a brochure describing the project and a map showing the location of potential sites for the substation and transmission lines. Additional information is also available at www.cpsenergy.com (search word "Ranchtown").

I look forward to meeting you and answering your questions. Thank you in advance for taking the time to join us and provide us with your feedback.

Sincerely,

Bruce Raney
Project Manager

31 de julio de 2012

Apreciable cliente de CPS Energy:

CPS Energy le invita a una reunión pública sobre un proyecto para mejorar la confiabilidad eléctrica en su área. El proyecto de la Subestación Ranchtown consiste en construir una nueva subestación y sus líneas de distribución al noroeste de San Antonio y Helotes, a lo largo de la Carretera Estatal 16 en el Condado de Béjar. La nueva subestación ocupará aproximadamente 5 acres de terreno y puede que también añadamos un corto tramo de línea de transmisión a la Línea de Transmisión Helotes-Menger. Proponemos iniciar la construcción a principios de 2014.

En la reunión pública explicaremos nuestros planes para la subestación, y nos gustaría recibir sus comentarios y sugerencias sobre el proyecto. Los miembros del equipo de CPS Energy que planearán y construirán esta subestación estarán presentes para conocerlo y contestar sus preguntas. Este evento será informal y usted podrá llegar e irse cuando lo desee, después de visitar los puestos de información sobre áreas específicas del proyecto. Con toda confianza visite cada puesto y tome su tiempo para informarse y hacer preguntas.

Reunión Pública de CPS Energy
Proyecto de la Subestación Ranchtown
5:30 p.m.-7:30 p.m. 16 de agosto de 2012
Helotes 4-H Activity Center
12132 Leslie Rd. Helotes, Texas 78023

En este paquete hemos incluido un folleto que resume el proyecto y un mapa de los sitios posibles de la subestación y las líneas de transmisión. Hay más información disponible en www.cpsenergy.com (clave "Ranchtown").

Espero conocerlo y contestar sus preguntas. De antemano, muchas gracias por el tiempo que se tome para darnos sus comentarios.

Sinceramente,

Bruce Raney
Gerente del Proyecto

Who is CPS Energy?

CPS Energy is the nation's largest municipally owned natural gas and electric utility, providing service to approximately 728,000 electric and 328,000 natural gas customers in the Greater San Antonio area. The utility offers the lowest rates among the top 10 largest U.S. cities, while ranking number 1 in wind-energy capacity among municipally owned utilities and number 1 in Texas for solar generation.

CPS Energy's goal is to provide reliable energy in an environmentally responsible way. This brochure is a first step in notifying the public of this project in an effort to work together to achieve that goal. If the scope of the project changes, the public will be notified via letter and/or door hanger. If you have any questions regarding the project please contact Bruce Raney.

How can you follow the progress of this project?

The CPS Energy project team will post project information on the CPS Energy website at www.cpsenergy.com.

(search: Ranchtown)

Who can answer your questions?

The website will include regular updates on the project as steps are completed. Also, you may call, write or e-mail to:

CPS Energy

Bruce Raney, Project Manager

Ranchtown Substation Project

Mail Code 111008

P.O. Box 1771

San Antonio, Texas 78296-1771

(210) 353-3107

Baraney@cpsenergy.com

CPS ENERGY works for you

CPS ENERGY works for you

RANCHTOWN SUBSTATION PROJECT

INFORMATION ABOUT THE RANCHTOWN SUBSTATION PROJECT

What is the Ranchtown Substation Project?

CPS Energy is planning to construct a new electric substation northwest of San Antonio and the Helotes area along State Hwy 16 in Bexar County.

A substation is a local power hub or distribution point for electricity. This substation will improve reliability and provide additional electric capacity to homes and businesses in the area. The new substation will be supplied from an existing high-voltage transmission line illustrated in the Study Area map shown below.

The substation requires approximately 5 acres.

Construction is expected to begin in early 2014

How might this project affect you?

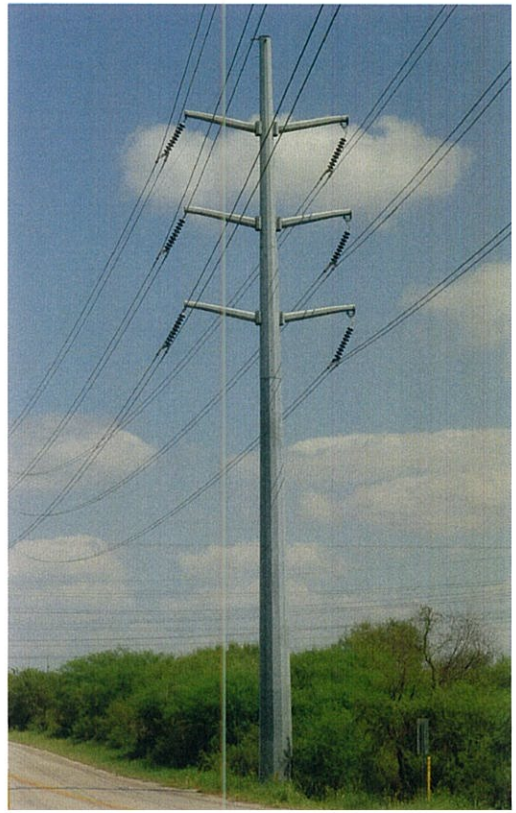
When a proposed site is identified, CPS Energy will contact individual land owners regarding acquisition of property for the substation and easements for power lines entering and exiting the substation. In addition, we will strive to minimize disruptions to landowners and their properties.

Why is this project needed?

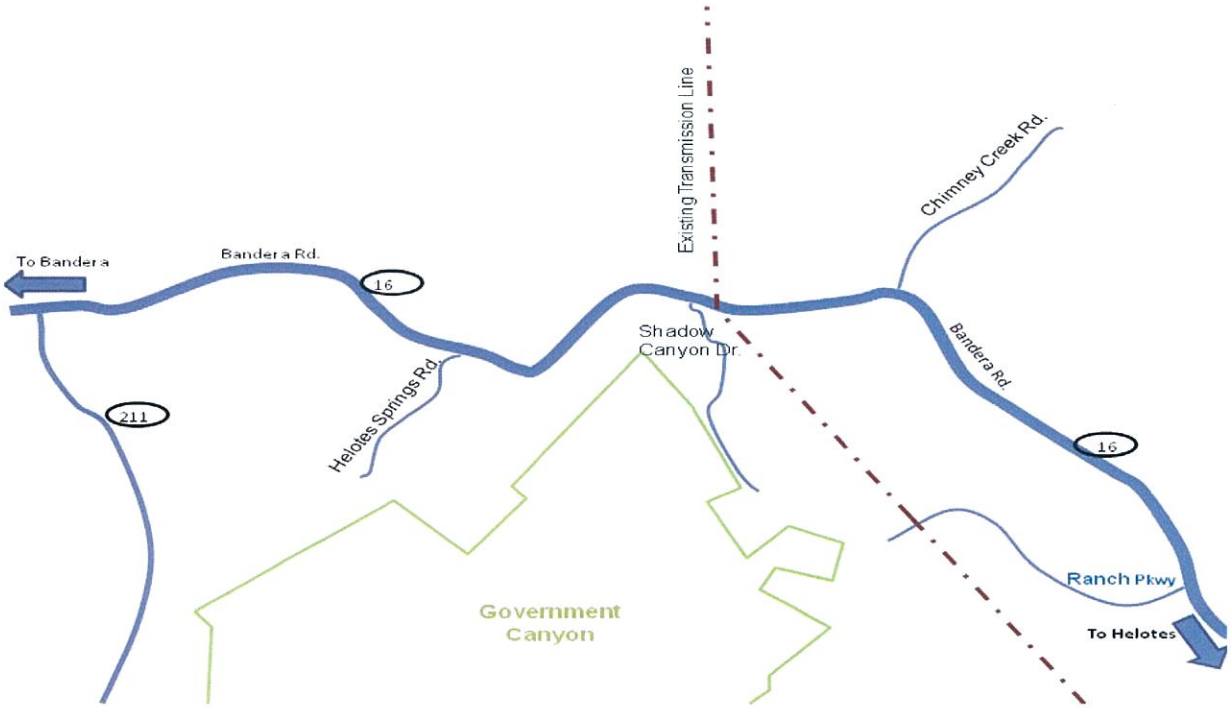
The existing CPS Energy electric system in northwest San Antonio must be expanded to serve customers' needs for reliable electric power. The demand for electricity is increasing in the area and we have an opportunity to improve the reliability of electric service to our customers.

Typical Substation

Typical Transmission Line



Study Area



¿Quién es CPS Energy?

CPS Energy es la mayor compañía municipal de luz y gas natural de EUA, con aproximadamente 728,000 clientes de electricidad y 328,000 clientes de gas natural en San Antonio y áreas circunvecinas. Ofrece las tarifas más bajas entre las 10 ciudades más importantes de la nación; es número 1 en energía eólica (del viento) instalada entre los sistemas eléctricos municipales; y en Tejas es número 1 en energía solar.

El objetivo de CPS Energy es suministrar energía confiable de una manera respetuosa del medioambiente. Este folleto es el primer paso para notificarle al público sobre este proyecto y trabajar juntos para lograr la meta. Si cambia el alcance del proyecto, se le notificará por carta o por avisos en las puertas. Si tiene preguntas sobre este proyecto, por favor, comuníquese con Bruce Raney.

¿Cómo puedo mantenerme al día del progreso de este proyecto?

El equipo de CPS Energy pondrá información actualizada sobre este proyecto en su portal Web en www.cpsenergy.com.

(Clave: Ranchtown)

¿Quién contestará mis preguntas?

El sitio Web incluirá información actualizada con regularidad a medida que se terminen ciertas etapas del proyecto. Además, usted puede llamar o escribir a:

CPS Energy

Bruce Raney, gerente

Proyecto de la Subestación Ranchtown

Mail Code 111008

P.O. Box 1771

San Antonio, Texas 78296-1771

(210) 353-3107

Baraney@cpsenergy.com

works for you

PROYECTO DE SUBESTACIÓN RANCHTOWN

INFORMACIÓN SOBRE EL PROYECTO DE LA SUBESTACIÓN RANCHTOWN

¿Qué es el proyecto de la Subestación Ranchtown?

CPS Energy planea construir una nueva subestación eléctrica al noroeste de San Antonio y el área de Helotes, a lo largo de la Carretera Estatal 16 en el Condado de Béjar.

Una subestación es un centro desde el cual se distribuye la electricidad. Esta subestación mejorará la confiabilidad y aumentará la capacidad para satisfacer las demandas de los hogares y comercios del área. La nueva subestación se abastecerá de una línea de alta tensión existente, como se muestra abajo en el mapa del Área de Estudio.

La subestación requerirá 5 acres. Esperamos comenzar la construcción a principios de 2014.

¿Cómo me afectaría este proyecto?

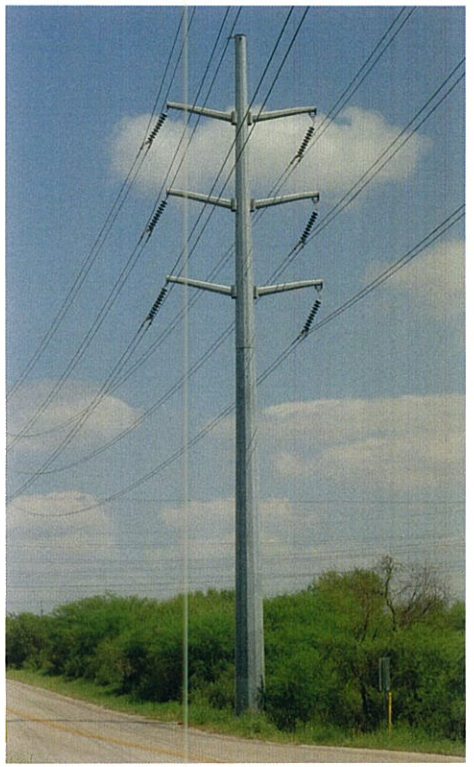
Cuando se identifique un sitio, CPS Energy se comunicará con los propietarios sobre la compra de terrenos para la subestación y los derechos de paso para las líneas que la conecten. Además, haremos todo lo posible por reducir las inconveniencias e interrupciones para los propietarios.

¿Por qué se necesita este proyecto?

La actual red eléctrica de CPS Energy en el noroeste de San Antonio se debe mejorar para ofrecerles a los clientes un servicio más confiable. La demanda de energía eléctrica está aumentando en el área, y ésta es la forma en que podemos proveer servicio más confiable y continuo a nuestros usuarios.

Una Subestación típica

Una línea de transmisión típica



Área del Estudio

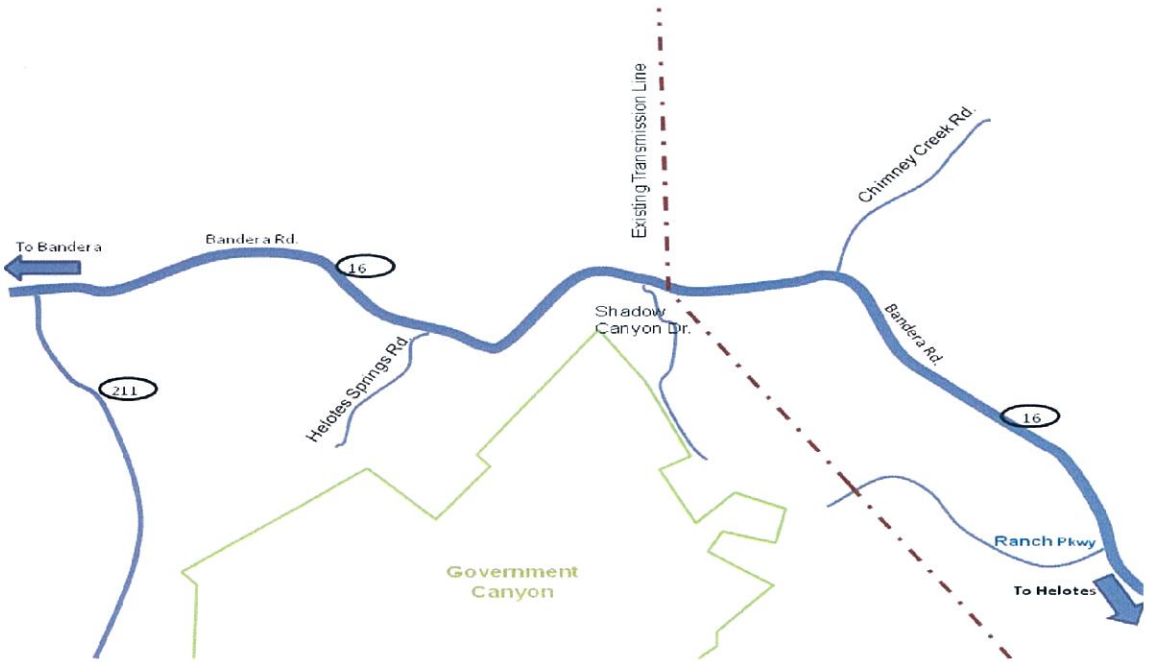


Figure 2-1

LAND USE AND ENVIRONMENTAL CONSTRAINTS

RANCHTOWN SUBSTATION PROJECT

Van Raub and Helotes Quadrangles
Bexar County, Texas

- Study Area
- Potential Substation Site (All sites approximately 5 acres)
- Potential Transmission/Dist. Line
- Existing Transmission Line
- 50' Contour
- Parcel Boundary (approximate)
- Edwards Aquifer Recharge Zone
- Park/Recreation Area
- 100 Year Floodplain
- SARA 1% Future Conditions
- Critical Habitat Area (Cicurina madla, Rhadine exilis, Rhadine infernalis)
- Karst Zone Boundary

Zone 1 = Areas known to contain endangered karst invertebrate features

Zone 2 = Areas having a high probability of containing suitable habitat for endangered karst invertebrate species

Zone 3 = Areas that probably do not contain endangered karst invertebrate species

Zone 4 = Areas that require further research but are generally equivalent to Zone 3, although they may include sections that could be classified as Zone 2 or Zone 5 as more information becomes available

Vicinity Map

0 250 500 1,000 1,500 Feet

ATKINS

Microsoft Corporation, DigitalGlobe, *Bing Maps Aerial*. 2010. 1:6,000. generated by Grant Cox using ArcMap. (http://www.bing.com/maps/ (22 May 2012)

Revised 7/26/2012

Path: N:\Clients\E_P\CPS_Energy\100029873\gis\Figure2_1.mxd

CPS FACILITY GENERAL ROUTING/SITING PROCESS

1. **Utility Planners/Engineers determine/establish need for project**
   - Transmission line voltage needs
   - Substation needs
2. **Study Area delineated based on end points for transmission line and/or electrical load area for substation**
   - Study area large enough to allow flexibility in transmission line routing/substation location
3. **Data Gathering Phase and Development of Constraints Map**
   - Letters sent to federal, state, and local agencies requesting information/concerns about study area
   - Aerial photographs of study area obtained
   - Information regarding sensitive/important natural, cultural, human resources mapped as constraints
   - Property boundary information obtained (not land ownership)
4. **Preliminary alternative transmission line routes/substation sites developed, considering:**
   - Environmental/land use constraints or avoidance/exclusion areas
   - Routing/siting opportunities
   - Engineering/right-of-way concerns
   - Evaluation of structure types
5. **Public Involvement Program**
   - Landowner and interested party notification and newspaper notices for public meetings
   - Public Open House meetings held to explain need for the project and to solicit input on preliminary alternative routes/sites
6. **Alternatives refined**
   - Public and agency input evaluated and used to modify alternative routes, if appropriate
7. **Additional public meetings**
   - Review revised routes with public, if necessary
8. **Primary alternative routes/sites evaluated using list of environmental criteria**
   - 25-35 environmental/land use criteria used to evaluate/compare alternatives
9. **Preferred route/site recommended**
   - Based on environmental/land use factors
   - One or more viable alternatives identified
10. **Environmental assessment report prepared, including discussion of:**
    - Purpose and need for project
    - Description of proposed design and construction
    - Existing environment
    - Alternative analysis
    - Public/Agency input
    - Impacts of each alternative
    - Local/state/federal permitting requirements
    - Mitigation (if necessary)
    - Costs for each alternative
11. **Utility selects overall preferred route based on factors such as:**
    - Public input
    - Engineering
    - Cost
    - Right-of-way considerations
    - Maintenance
    - Environmental
    - Land Use
12. **Public notified of final route/site selected and date for start of construction.**

cps ENERGY

ATKINS

PROCESO DE SELECCIÓN DE SITIOS Y RUTAS DE CPS ENERGY

1. **Los planificadores e ingenieros determinan que el proyecto se necesita**
   - Ya sean líneas de transmisión de alto voltaje
   - O subestaciones
2. **Se define el área para el estudio. Se basa en el comienzo y final de las líneas de transmisión o dependiendo de la capacidad que requiere una subestación.**
   - El área de estudio debe ser lo suficientemente grande como para dar flexibilidad para la ruta de una línea de transmisión o la ubicación de una subestación.
3. **Fase de recopilación de datos y desarrollo del mapa que identifique restricciones**
   - Se envían cartas a entidades federales, estatales y locales solicitándoles datos sobre el área de estudio
   - Se toman fotos aéreas del área de estudio
   - Se identifican en mapas las restricciones debido a recursos naturales, culturales y humanos
   - Se recopila información sobre los límites de propiedades (sin identificar a los dueños)
4. **Se proponen alternativas preliminares para las rutas de líneas de transmisión y sitios de subestaciones, tomando en cuenta:**
   - Restricciones ambientales o de uso de terrenos, o áreas que se deben evitar o excluir
   - Opciones de rutas o ubicaciones
   - Asuntos de ingeniería y derechos de paso
   - Evaluación de tipos de estructuras
5. **Se invita la participación del público**
   - Se notifican a los propietarios y partes interesadas. Se anuncian las reuniones públicas en periódicos
   - Se realizan las reuniones públicas para explicar porqué se necesita el proyecto y se solicitan comentarios sobre las rutas o sitios preliminares
6. **Se redefinen las alternativas**
   - Se evalúan los comentarios del público y de las entidades para hacer las modificaciones necesarias
7. **Reuniones públicas adicionales**
   - De ser necesaria, las rutas modificadas se repasan con el público
8. **Se evalúan las rutas o sitios principales a la luz de la lista de criterios medioambientales**
   - Se usan de 25 a 35 criterios ecológicos y de uso de terreno para evaluar o comparar alternativas
9. **Ruta o sitio preferido y recomendado**
   - En base a factores ecológicos o de uso de terrenos
   - Se identifican una o más alternativas
10. **Se prepara el informe de la evaluación medioambiental, incluso:**
    - Propósito y necesidad del proyecto
    - Descripción del diseño y construcción propuestos
    - El medioambiente actual
    - Análisis de alternativas
    - Análisis de comentarios públicos y de entidades
    - Impactos de cada alternativa
    - Permisos locales, estatales o federales requeridos
    - Mitigación (Si se necesita)
    - Costos de cada alternativa
11. **La compañía de luz selecciona la ruta preferida en base a varios factores, tales como:**
    - Aporte del público
    - Ingeniería
    - Costo
    - Consideraciones de derecho de paso
    - Mantenimiento
    - El medioambiente
    - Uso del terreno
12. **Se notifica al público sobre la selección de la ruta o sitio final, y la fecha para iniciar la construcción**

CPS ENERGY ATKINS

CPS ENERGY
RANCHTOWN SUBSTATION PROJECT
QUESTIONNAIRE

Please respond to the following questions so we can evaluate public interest in this project.

1. Has the need for the project been adequately explained to you? _____ Yes _____ No

2. What factors do you believe should be considered (avoided if possible) in the siting of this substation? (If you have multiple concerns, please rank them 1st, 2nd, 3rd, etc.)

   Proximity to:

Residential areas	_____
Floodplains/wetlands	_____
Recreational/park areas	_____
Archaeological/historic sites	_____
Commercial/industrial areas	_____
Wildlife habitat/woodlands	_____
Schools	_____

3. What other factors do you believe should be considered?

   _____
   _____

6. How did you learn about this Public Open House Meeting?

   _____

7. Do you have any additional comments or questions?

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

8. Would you like someone to follow-up with you to discuss the project in more detail?
   _____ No _____ Yes (Please provide contact information below.)

Optional:
Name _____
Address _____
City, State/ZIP _____
Daytime phone _____
E-mail _____

Please turn in your completed questionnaire at this meeting or mail within three days to:

Bruce Raney, Project Manager
CPS Energy, Mail Drop 111008
P.O. Box 1771
San Antonio, Texas 78296-1771

THANK YOU FOR YOUR COMMENTS

CUESTIONARIO DE CPS ENERGY
SOBRE EL PROYECTO DE LA SUBESTACIÓN RANCHTOWN

Por favor, responda las preguntas siguientes para que podamos evaluar el interés del público en este proyecto.

1. ¿Se le explicó bien la necesidad para este proyecto? _____ Sí_____ No

2. ¿Cuáles factores cree que se deben considerar (evitarlos si es posible) al seleccionar el sitio para esta subestación? (Si le interesan varias cosas, póngalas en orden de importancia, por ejemplo 1°, 2°, 3°, etc.)

   En las cercanías de:
   Áreas residenciales _____
   Planicie aluvial, humedal _____
   Áreas de recreo o parques _____
   Zonas arqueológicas o históricas _____
   Zonas comerciales o industriales _____
   Hábitat de fauna o bosques _____
   Escuelas _____

3. ¿Cuáles otros factores cree que se deben considerar?
   _____
   _____

6. ¿Cómo se enteró de esta Reunión Pública?
   _____

7. ¿Tiene más comentarios o preguntas?
   _____
   _____
   _____
   _____
   _____
   _____
   _____

8. ¿Le gustaría que alguien le llamara para hablar del proyecto más detalladamente?
   _____ No _____ Sí (Por favor, anote sus datos para comunicarnos con usted).

Opcional:
Nombre _____
Dirección _____
Ciudad, Estado/ Zona Postal_____
Teléfono durante el día _____
E-mail_____

Por favor, entregue su cuestionario al terminar de contestarlo, ya sea en esta reunión o enviándolo por correo dentro de tres días a:

Sr. Bruce Raney
CPS Energy, Mail Drop 111008
P.O. Box 1771
San Antonio, TX 78296-1771

¡MUCHAS GRACIAS POR SUS COMENTARIOS!

September 10, 2012

Dear CPS Energy Customer:

CPS Energy hosted an open house on August 16, 2012 to introduce the Ranchtown Substation Project that will improve the reliability of electric service in your area. In addition to explaining the details of the project to interested parties, the open house was an opportunity for CPS Energy to document feedback from those in the immediate area of the proposed project sites. The valuable feedback CPS Energy received from the open house prompted a modification of the original map included in the invitation to the open house.

Attached is the revised map reflecting the changes generated from feedback received at the open house. Three new potential substation sites were added and are numbered 9, 10 and 11. In addition, the transmission and distribution routes associated with the sites are included on the map and minor changes were made to align existing sites with existing property lines. No other changes were made to the map. The additional sites will be included in CPS Energy's evaluation process along with the original eight sites.

If you have comments or feedback regarding any of the three added sites please make contact with me as soon as possible using the telephone number or e-mail below. If you would prefer to document your comments in writing, please complete the enclosed questionnaire and return it in the self addressed envelope included in this package. If you would like to have your comments regarding the new sites considered in our evaluation process, please return the questionnaire or contact me directly no later than Friday September 28, 2012. Your prompt response is appreciated.

CPS Energy expects to complete the selection process by the end of November 2012. Once the CPS Energy project team selects a preferred site and recommends it to the CPS Energy Board of Trustees, a letter will be sent to you with a map identifying the recommended site and the scheduled date and location for a public input meeting. This meeting will be an opportunity for you to provide input to our Board of Trustees regarding the site selection.

As always, should you have any questions or need additional information feel free to email me at baraney@CPSEnergy.com or call me at 210-353-3107. You can also find the most up to date information regarding the project on the CPS Energy website by typing in the search word "Ranchtown".

Sincerely,

Bruce Raney
Project Manager
CPS Energy

14 de septiembre de 2012

Apreciable cliente de CPS Energy:

El 16 de agosto de 2012 CPS Energy realizó una reunión pública para presentar el Proyecto de la Subestación Eléctrica Ranchtown para mejorar la confiabilidad eléctrica en su área. Además de explicar los detalles del proyecto a las partes interesadas, durante la reunión se documentaron los comentarios de los residentes del área inmediata de los sitios propuestos para el proyecto. Debido a los valiosos comentarios que se recibieron, CPS Energy modificó el mapa original que se había incluido en la invitación a esa reunión pública.

Le adjuntamos el mapa modificado que muestra los cambios que se hicieron con base a los comentarios que se recibieron en la reunión. Se agregaron tres nuevos sitios potenciales para la subestación, que se identifican con los números 9, 10 y 11. Además, se incluyeron las rutas de transmisión y distribución asociadas con los sitios, y se hicieron cambios menores para alinear los sitios existentes con las líneas de propiedad actuales. No se hicieron más cambios al mapa. Los sitios adicionales se incluirán en el proceso de evaluación de CPS Energy junto con los ocho sitios originales.

Si tiene comentarios o sugerencias acerca de los tres sitios adicionales, por favor, comuníquese conmigo a mi número telefónico o correo electrónico tan pronto como le sea posible. Si prefiere documentar sus comentarios por escrito, por favor utilice el cuestionario adjunto y devuélvalo en el sobre incluido en este paquete. Si le gustaría que sus comentarios sobre los nuevos sitios sean considerados en nuestro proceso de evaluación, por favor, devuelva el cuestionario o comuníquese conmigo de inmediato o a más tardar el viernes 28 de septiembre de 2012. Se le agradece su pronta respuesta.

CPS Energy anticipa terminar el proceso de evaluación y selección para finales de noviembre de 2012. Cuando el equipo del proyecto seleccione un sitio preferido y lo recomiende a la Mesa Directiva de CPS Energy, le enviaremos otro mapa en el que se identificará el sitio recomendado, así como la fecha y lugar para otra reunión pública informativa. En dicha reunión usted podrá compartir su opinión con la Mesa Directiva sobre la selección del sitio.

Como siempre, si tiene preguntas o necesita más información, escríbame con toda confianza a baraney@cpsenergy.com o llámeme al 210-353-3107. También puede encontrar información actualizada sobre este proyecto en cpsenergy.com, haciendo una búsqueda con la palabra "Ranchtown".

Sinceramente,

Bruce Raney

Gerente del Proyecto
CPS Energy

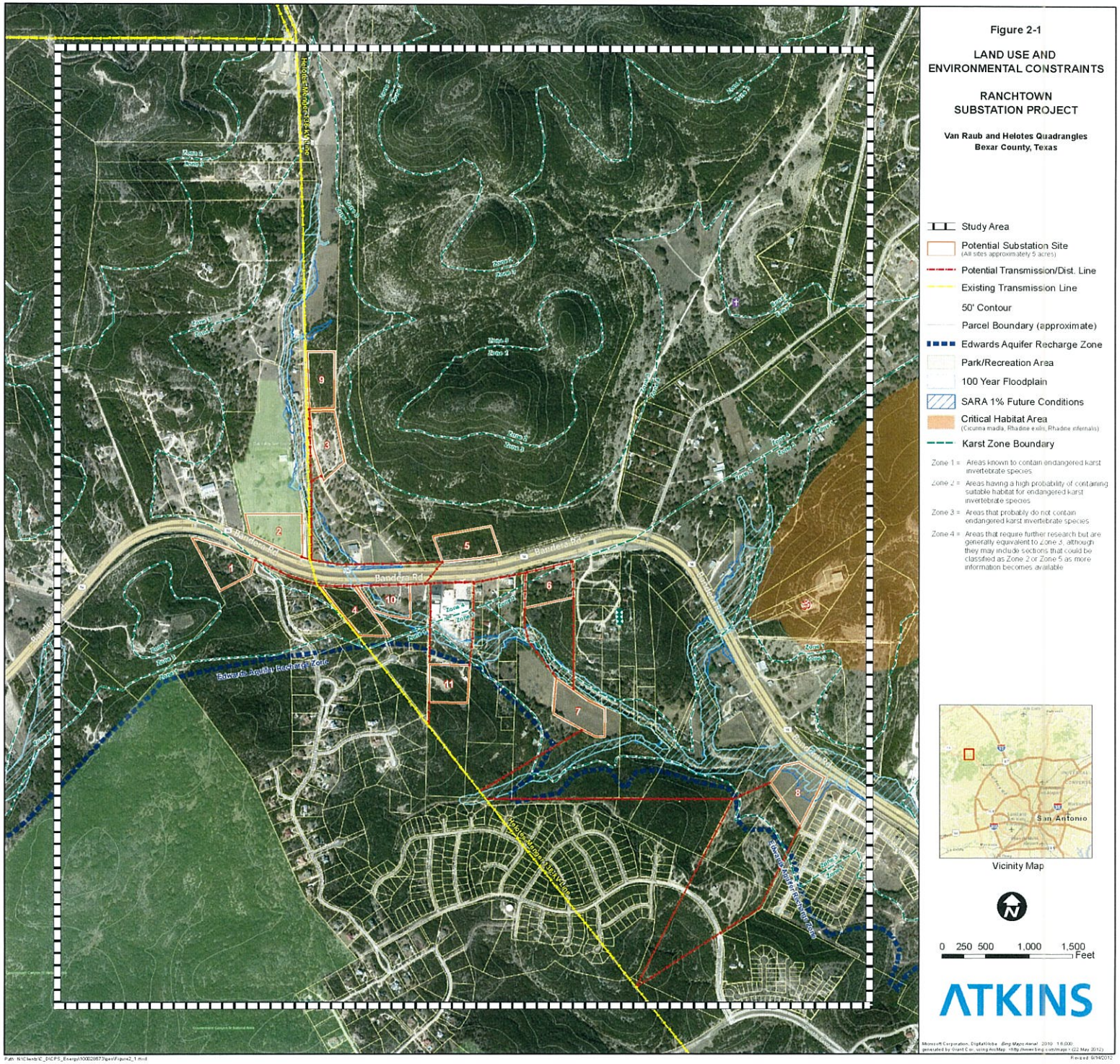


Figure 2-1

LAND USE AND ENVIRONMENTAL CONSTRAINTS

RANCHTOWN SUBSTATION PROJECT

Van Raub and Helotes Quadrangles
Bexar County, Texas

- Study Area
- Potential Substation Site (All sites approximately 5 acres)
- Potential Transmission/Dist. Line
- Existing Transmission Line
- 50' Contour
- Parcel Boundary (approximate)
- Edwards Aquifer Recharge Zone
- Park/Recreation Area
- 100 Year Floodplain
- SARA 1% Future Conditions
- Critical Habitat Area (Cicurina madla, Rhadine exilis, Rhadine infernalis)
- Karst Zone Boundary

Zone 1 = Areas known to contain endangered karst invertebrate species

Zone 2 = Areas having a high probability of containing suitable habitat for endangered karst invertebrate species

Zone 3 = Areas that probably do not contain endangered karst invertebrate species

Zone 4 = Areas that require further research but are generally equivalent to Zone 3, although they may include sections that could be classified as Zone 2 or Zone 5 as more information becomes available

Vicinity Map

0 250 500 1,000 1,500 Feet

ATKINS

Microsoft Corporation, DigitalGlobe, Bing Maps Aerial, 2010, 1:6,000, generated by Grant Cox, using ArcMap, <http://www.bing.com/maps>, (22 May 2012)

Revised: 6/14/2012

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CPS ENERGY
RANCHTOWN SUBSTATION PROJECT
QUESTIONNAIRE

Please respond to the following questions so we can evaluate public interest in this project.

1. Has the need for the project been adequately explained to you? _____ Yes _____ No

2. What factors do you believe should be considered (avoided if possible) in the siting of this substation? (If you have multiple concerns, please rank them 1st, 2nd, 3rd, etc.)

   Proximity to:

Residential areas	_____
Floodplains/wetlands	_____
Recreational/park areas	_____
Archaeological/historic sites	_____
Commercial/industrial areas	_____
Wildlife habitat/woodlands	_____
Schools	_____

3. What other factors do you believe should be considered?

   _____

   _____

6. How did you learn about this Public Open House Meeting?

   _____

7. Do you have any additional comments or questions?

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

8. Would you like someone to follow-up with you to discuss the project in more detail?
   _____ No _____ Yes (Please provide contact information below.)

Optional:
Name _____
Address _____
City, State/ZIP _____
Daytime phone _____
E-mail _____

Please turn in your completed questionnaire at this meeting or mail within three days to:

Bruce Raney, Project Manager
CPS Energy, Mail Drop 111008
P.O. Box 1771
San Antonio, Texas 78296-1771

THANK YOU FOR YOUR COMMENTS

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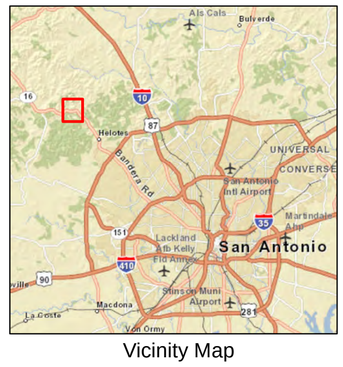

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ATKINS

Microsoft Corporation, DigitalGlobe. *Bing Maps Aerial.* 2010. 1:6,000; generated by Grant Cox; using ArcMap. <http://www.bing.com/maps> (22 May 2012)

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Revised: 9/14/2012