

25 September 2019

Introduction

New Braunfels Utilities (NBU) proposes to purchase and develop an undeveloped 48.575-acre property, described as “Tract 2- Mockford Survey No. 285” adjacent to the western terminus of Westpointe Dr in New Braunfels in Comal County, Texas. Zara Environmental LLC (Zara) was contracted by NBU to perform field and desktop assessments to identify and describe each of the following resources:

- potential habitat for federally-listed species protected under the Endangered Species Act (ESA) administered by the U.S. Fish and Wildlife Service (USFWS), and
- potential habitat for state-listed species protected under Code; Title 31 TAC §65.175 and 176 administered by the Texas Parks and Wildlife Department (TPWD).

The following report includes: (i) a list of all potential regulated endangered species in the area, (ii) an identification of any species or their habitat conditions that may affect the development of the site, (iii) a description of the areas surveyed, (iv) photographs of each habitat area examined, (v) maps depicting the areas surveyed, (vi) requirements for protecting any species or habitats that fall under state or federal regulation including permitting or other relevant information related to findings over the course of the services Zara is providing to NBU as described previously. It also includes recommendations for avoiding impacts on endangered species in the area and a plan of action with proposed timetable for seeking any permits required prior to construction.

Endangered Species Constraints

The property (Figure 1) contains potential habitat for one federally-listed species, the Golden-cheeked Warbler (GCWA; *Dendroica chrysoparia*), while several federally listed species, federal candidate species, and state-listed species may be found in the general area as detailed in Table 1. Reviewing aerial photographs and conducting a site visit determined that the site is dominated by habitat likely to be used by GCWA because it is composed of woodlands with mature Ashe juniper (*Juniperus ashei*) in a natural mix with oaks, elms, and other hardwoods, in relatively moist (mesic) areas such as steep canyons and slopes, and adjacent uplands (Figure 2, Figure 3). Any impacts on the site that would cause “take” of a federal or state-listed species may require coordination, consultation, or permitting for impacts to listed species through USFWS and/or TPWD. Take is defined by USFWS as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species”. Harm may include significant habitat modification that kills or injures a listed species directly or through impairment of essential behavior (e.g., nesting or reproduction). Take is defined by TPWD as “to capture, trap, take (remove), or kill, or attempt to capture, trap, take, or kill”.



Basemap: ESRI 2019.; GCWA Habitat Quality: Diamond Model C, 2007.

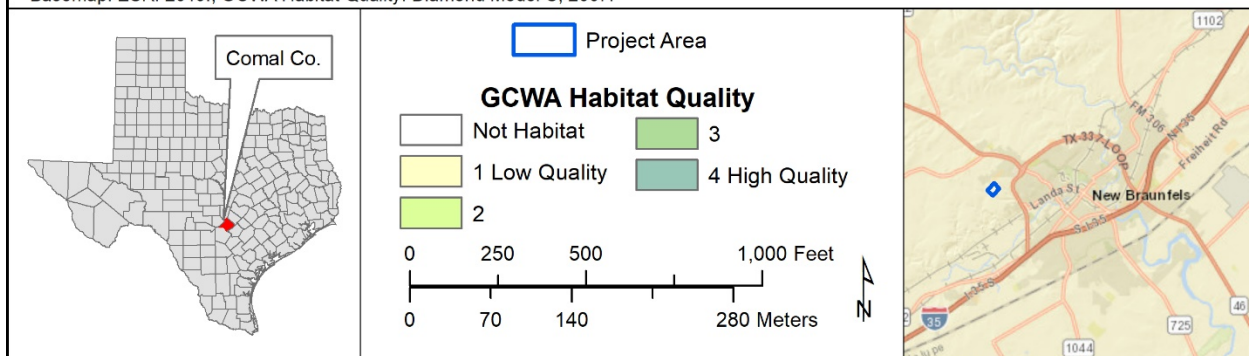


Figure 1. Map of Tract 2 of the Mockford Survey No. 285 with identified high quality GCWA habitat shown using the Diamond Model C.

Table 1. Federal and state-listed species with potential habitat on or adjacent to the site.

Species	Common Name	Federal Status	State Status
<i>Dendroica chrysoparia</i>	Golden-cheeked warbler	Endangered	Endangered
<i>Buteo albonotatus</i>	zone-tailed hawk	----	Threatened
<i>Sterna antillarum</i>	Least tern	Endangered	Endangered
<i>Vireo atricapilla</i>	Black-capped vireo	----	Endangered
<i>Calidris canutus rufa</i>	Red knot	Threatened	----
<i>Grus americana</i>	Whooping crane	Endangered	Endangered
<i>Haliaeetus leucocephalus</i>	Bald eagle	----	Threatened
<i>Nasua narica</i>	White-nosed coati	----	Threatened
<i>Eurycea latitans</i>	Cascade Caverns salamander	----	Threatened
<i>Eurycea nana</i>	San Marcos salamander	Threatened	Threatened
<i>Eurycea (Typhlomolge) rathbuni</i>	Texas blind salamander	Endangered	Endangered
<i>Eurycea tridentifera</i>	Comal blind salamander	----	Threatened
<i>Etheostoma fonticola</i>	Fountain darter	Endangered	Endangered
<i>Lampsilis bracteata</i>	Texas Fatmucket	Candidate	Threatened
<i>Truncilla macrodon</i>	Texas Fawnsfoot	Candidate	Threatened
<i>Quadrula petrina</i>	Texas Pimpleback	Candidate	Threatened
<i>Quadrula aurea</i>	Golden Orb	Candidate	Threatened
<i>Fusconaia mitchelli</i>	False Spike	----	Threatened
<i>Stygoparnus comalensis</i>	Comal Springs dryopid beetle	Endangered	Endangered
<i>Heterelmis comalensis</i>	Comal Springs riffle beetle	Endangered	Endangered
<i>Stygobromus pecki</i>	Peck's Cave amphipod	Endangered	Endangered
<i>Streptanthus bracteatus</i>	Bracted twistflower	Candidate	Rare
<i>Zizania texana</i>	Texas wild-rice	Endangered	----



Figure 2. Photograph of Tract 2 of the Mockford Survey No. 285 showing mature Ashe juniper and hardwoods.



Figure 3. Photograph of Tract 2 of the Mockford Survey No. 285 showing mature Ashe juniper and hardwoods.

Surveys for GCWA to support presence/absence of the species would follow the guidelines as provided in the USFWS Section 10(a)(1)(A) Scientific Permit Requirements for Conducting Presence/Absence Surveys and Habitat Assessments for Endangered Golden-cheeked Warblers (2010). The USFWS regularly suggests 2 years of surveys to determine absence for federal entities, but under certain conditions may suggest up to 3 or as few as 1. For non-federal entities, it is the number of surveys needed for the entity to feel confident that their activities will not result in take of endangered or threatened animal species. The following minimum procedures must be used to determine presence/absence:

- GCWA surveys must be conducted between March 15 and June 1 with 60 percent of the surveys being conducted prior to May 15.
- We recommend survey times start 30 minutes before sunrise. All surveys must be completed within 7 hours of sunrise.
- Surveys should not be conducted during unfavorable weather conditions, such as: a) wind speeds greater than 12 mph, b) fog, c) light to heavy precipitation, and d) temperatures <45°F or >80°F.
- Surveyors must not conduct surveys when experiencing temporary hearing impairment, such as from a cold.
- A minimum of five visits with no more than 1 visit within any 5-day period. Total survey time should be a minimum of 1 hour per 25 acres of potential habitat per visit.
- A minimum of 1 hour per visit is needed regardless of the size of the site.
- Taped or playback recordings of GCWA or screech owl calls may be used only after the above methodology (5 visits) has been exhausted and no birds have been located. Recordings must be used to verify negative results (absence of GCWAs). At any one point, recordings should be played for only 30 to 60 seconds, followed by a quiet period of at least 15 seconds before repeating this process once more. After the second quiet period with no detection, permittees may move to another area. Upon sighting or hearing a GCWA, the recording must be stopped immediately.
- Exceptions to this methodology may be allowed only through coordination with and prior written approval by the Austin Office of the U.S. Fish and Wildlife Service. Please call 512/490-0057 and ask for the GCWA species lead

Some development activities may impact other federally listed species that are located near the property. For example, if development will intersect the aquifer or alter recharge to the Edwards Aquifer, it may impact aquifer dwelling species such as *Eurycea rathbuni* or downstream listed species at Comal Springs.

Permitting through Section 10 (Non-federal Entity)

If development activities may cause take of a federally listed species, NBU will need to decide if they will pursue acquiring an incidental take permit from the USFWS. Incidental take permits may be sought when a non-federal entity believes their otherwise lawful activities may result in take

of endangered or threatened animal species. A habitat conservation plan (HCP) must accompany an application for an incidental take permit. The habitat conservation plan associated with the permit ensures that the effects of the authorized incidental take are adequately minimized and mitigated. Development of the HCP is the responsibility of the client and requires ongoing management activities carried out and funded by NBU. USFWS is available to provide guidance during HCP development. Developing an HCP and acquiring an incidental take permit typically takes at least one year but can take up to two years or more. The number of species impacted and complexity of the proposed project will determine the level of coordination required and how long and costly the process will be. There is no incidental take permit available for state listed species. All actions must avoid capturing, trapping, removing, or killing a state listed species.

If there is not federal funding or a federal nexus, it is to the responsibility of NBU to determine the number of surveys needed for them to feel confident that their activities will not result in take of GCWA since the site has been identified as potential habitat. A consultant can provide guidance to NBU as the project develops and more information is available. At a minimum, it is recommended that NBU hire a permitted biologist to conduct at least 1 year of presence/absence surveys for GCWAs. Once absence is inferred, it is recommended that construction begin immediately after the breeding season which ends on Aug 31. If construction doesn't by March 1 of the next year, another year of surveys would be recommended.

If construction occurs in or immediately adjacent (within 300 ft) to documented occupied species habitat without USFWS consultation, NBU could be prosecuted by USFWS under Section 9 of the Endangered Species Act. This could result in fines of up to \$49,467 and a stop to the development activities until coordination with USFWS occurs. The majority of prosecutions occur when a third party contacts USFWS to report potential impacts to endangered species, and USFWS investigates and determines that take has occurred.

Permitting through Section 7 (Federal Nexus)

If there are potential adverse effects to federally listed species or critical habitat from development activities authorized through federally funded projects or a federal agency, such as the U.S. Army Corps of Engineers (USACE), NBU will need to either demonstrate absence as previously discussed or enter into formal consultations with USFWS, with the federal agency (USACE in this example and throughout this paragraph) as the initiating agency. Formal consultations determine whether the proposed agency's actions (such as USACE authorizing activities that impact waters of the U.S.) are likely to jeopardize the continued existence of a species or adversely modify critical habitat. Formal consultation would be based on a biological assessment (BA), which will include details about how each development action may affect each listed species, including the results of any species surveys, proposed mitigation, and long-term benefits. A draft BA would take approximately four months to complete. The draft BA would be submitted to USFWS, which would require one to two months for review and comment. Once the final BA is received, the USFWS has 135 days to respond with a jeopardy or adverse modification biological opinion (BO). If they determine that the federal agency's permitting will

cause jeopardy or adverse modification, then the action agency (USACE) must undertake the required actions to minimize incidental take detailed in the BO or require them as conditions of the USACE permit. Removing occupied habitat, regardless of whether it is outside of the breeding season, will likely result in formal consultations with the USFWS. If construction occurs in or immediately adjacent (within 300 ft) to documented occupied species habitat without USFWS consultation, the project would not receive their federal funding or permit and the project would be delayed until a formal consultation was completed.

TPWD Coordination

If there will be impacts to fish and wildlife and their habitats by redevelopment activities to the property, project details, including design specifications and information about what resources may be impacted, should be submitted to the TPWD Wildlife Habitat Assessment (WHAB) Program for review. The WHAB Program response will provide an evaluation of the project for impacts to fish and wildlife and their habitats, including rare, threatened, and endangered species and other significant resources occurring in the vicinity of the project, and make recommendations for avoidance, minimization and mitigation. Project review by TPWD takes approximately 45 days; however, responses may be delayed due to workload and lack of TPWD staff.

Take of state-listed species is prohibited and the TPWD WHAB Program does not issue permits for project development. If it is found that development activities may result in take of a state-listed species, surveys for the presence of those species (including nests) should be conducted prior to initiating those activities and state-listed species found that may be impacted should be relocated. Any species relocation must be done so by a person with a scientific collecting permit through TPWD. Some species surveys can be dependent on season (as in the case for migratory birds or turtle nests) and others are not (freshwater mussels); therefore, surveying, relocation, and reporting timeframes may vary from one month to one year dependent on both the species and the timing of the project. The cost could range from \$0, if TPWD determines that no take will occur and no surveys or relocations are required, to approximately \$40,000 for surveys and relocation of species. The USFWS surveys as referenced previously and avoidance and minimization measures taken for the federally-listed species should be sufficient for TPWD for those species.

Other Constraints

During a desktop review, we did not identify any wetlands on the property indicating that it is not likely to fall under U.S. Army Corps of Engineers (USACE) jurisdiction for regulation under Section 404 of the Clean Water Act. If the project did fall under USACE jurisdiction, the USACE could authorize the impacts using available nationwide permits (NWP), which are permits for categories of impacts that have minimal adverse effects on the environment and generally require less time and paperwork to complete than an individual permit. Nationwide permits require applicants to fill out permit forms to provide detailed information on proposed impacts to jurisdictional waters and how those impacts will be mitigated. A Waters of the U.S. delineation would provide a formal determination of USACE jurisdiction.

The site is located entirely within the Edwards Aquifer Recharge zone and is regulated by the TCEQ under Title 30, Part 1, Chapter 213 of the Texas Administrative Code. Any regulated activity that occurs on the Recharge Zone would require the preparation of an Edwards Aquifer Protection Plan. Regulated activities include “Any construction-related or post-construction activity on the recharge zone of the Edwards Aquifer having the potential for polluting the Edwards Aquifer and hydrologically connected surface streams” (30 TAC §213(A)(28)).

Regulated activities include, but are not limited to:

- (i) construction of buildings, utility stations, utility lines, roads, highways, or railroads;
- (ii) clearing, excavation, or any other activities that alter or disturb the topographic, geologic, or existing recharge characteristics of a site;
- (iii) any installation of aboveground or underground storage tank facilities on the recharge or transition zone of the Edwards Aquifer; or
- (iv) any other activities that may pose a potential for contaminating the Edwards Aquifer and hydrologically connected surface streams.

Regulated activities do not include:

- (i) clearing of vegetation without soil disturbance;
- (ii) agricultural activities, except feedlots/concentrated animal feeding operations that are regulated under Chapter 321 of this title (relating to Control of Certain Activities by Rule);
- (iii) activities associated with the exploration, development, and production of oil, gas, or geothermal resources under the jurisdiction of the Railroad Commission of Texas;
- (iv) routine maintenance of existing structures that does not involve additional site disturbance, such as, but not limited to:
- (v) the resurfacing of existing paved roads, parking lots, sidewalks, or other development-related impervious surfaces; and
- (vi) the building of fences, or other similar activities in which:
 - a. there is little or no potential for contaminating groundwater; or
 - b. there is little or no change to the topographic, geologic, or existing sensitive features; or
- (vii) construction of single-family residences on lots that are larger than five acres, where no more than one single-family residence is located on each lot.

Regulated activities that are exempt from the Edwards Aquifer protection plan application requirements are:

- (i) the installation of natural gas lines;
- (ii) the installation of telephone lines;

- (iii) the installation of electric lines;
- (iv) the installation of water lines;
- (v) the installation of other utility lines which are not designed to carry and will not carry the following:
 - a. pollutants;
 - b. storm water runoff;
 - c. sewage effluent; or
 - d. treated effluent from a wastewater treatment facility.

There are four types of Edwards Aquifer Plans, Organized Sewage Collection Plan (SCS Plan), Underground Storage Tank Facility Plan (UST Plan), Aboveground Storage Tank Facility Plan (AST Plan), and Water Pollution Abatement Plan (WPAP). An SCS Plan is required for the construction of any public or private sewerage system for the collection and conveyance of sewage to a treatment and disposal system that is regulated pursuant to rules of the commission and provisions of Chapter 26 of the Texas Water Code. UST and AST plans are prepared to outline the best management practices that will be implemented to protect water quality when a regulated aboveground or underground storage tank facility is constructed. A WPAP is a detailed plan that outlines best management practices that will be implemented in order to protect water quality when other regulated activities are taking place (i.e. road construction and other developments). All four plans are prepared by a Licensed Professional Engineer and all four plans include within them a Geologic Assessment (GA) that must be prepared by a Licensed Professional Geoscientist. A GA is prepared to identify caves, karst features or other natural or manmade features that may act as a pathway for surface contaminants to infiltrate into the Edwards Aquifer. A GA identifies and determines the sensitivity of all features so that proper BMPs and setbacks may be implemented to protect the quality of the Edwards Aquifer. There are two known karst features on the project site which should be examined further if any development will take place near them. Specifically, the subsurface extent of the features should be determined if possible so that utility lines and other infrastructure can be sited to minimize the potential of intersecting the features.

The TCEQ also regulates sensitive karst features encountered during construction. According to Title 30, Texas Administrative Code, Section 213.3(29), "A sensitive feature is a permeable geologic or artificial feature located on the recharge zone or transition zone where there is a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer and rapid infiltration to the subsurface may occur." If a sensitive feature is discovered during construction the TCEQ must be contacted and all work near the feature must stop and temporary measures such as silt fence or sandbags must be installed as soon as possible to prevent dust and stormwater from entering the feature. A Licensed Professional Geoscientist (and a Licensed Professional Engineer if a sewer line is being installed) must evaluate the feature and propose methods to protect the feature and the Edwards Aquifer from potential degradation of water quality. Once the TCEQ receives a feature protection plan, it has one week to complete review unless there are deficiencies in the plan.

Soil disturbing activities may require coordination with the Texas Historical Commission (THC). Coordination can range from preparation of a letter to the THC stating that impacts to cultural resources is unlikely and receiving TCH concurrence with no additional requirements to field studies that may require several months to complete and additional coordination with THC. It is recommended that an Archeologist familiar with this process evaluate the site for the potential presence of cultural resources.

Conclusions

It is important to involve the USFWS early in the design and construction process so that potential issues that could delay the project can be identified and addressed, such as presence/absence surveys and formal USFWS consultation, if needed. Early discussions can also guide project design to include BMPs or designs that will minimize impacts to listed species and speed up the review process. Depending on the type of facilities NBU plans to build on the site, the preparation of an Edwards Aquifer Plan and an associated geologic assessment may be required by TCEQ.

With potential GCWA habitat on the site, we recommend that at least 1 year of surveys for the GCWA be conducted following the USFWS survey methods previously discussed. If the client is comfortable inferring absence from the year of surveys and the adjacent properties do not have known occupied habitat, construction should begin immediately after breeding season on September 1. If the potential habitat is occupied, NBU should immediately begin acquiring an incidental take permit or formal consultation with the USFWS. We recommend that construction activities occur outside of the breeding season, which extends from March 1 to August 31, and minimize impacts to the habitat by only removing trees that are critical for the project to be completed.

While potential habitat is not present on the property, subterranean development (such as drilling a well or developing a quarry) could take federally listed aquifer dwelling species. If development of the property could intersect the aquifer, we recommend that NBU consult with specialists (hydrologists and biologists) to develop avoidance and minimization measures for water flow and aquifer species.

This document was prepared based on information supplied to Zara by NBU as of 22 September 2019. Design plans can have significant implications on the permitting procedures and costs. Without initial design plans it is difficult to assess implications on the permitting process; therefore, it is important that NBU work closely with regulatory agencies as design plans are created to ensure that project cost and timeline is not negatively impacted by regulatory review. While the ultimate decision regarding risk to the client and how many surveys to conduct is up to NBU, a consultant and USFWS can help guide decisions as the project develops and moves through the permitting process.

Helpful Resources

Antiquities Code of Texas - <http://www.thc.state.tx.us/project-review/antiquities-code-texas>

National Historical Preservation Act –
<http://www.nps.gov/history/archeology/tools/laws/NHPA.htm>

USACE Nationwide Permits - http://www.usace.army.mil/cecw/pages/nw_permits.aspx

USFWS Section 7 Consultation - <http://www.fws.gov/Midwest/endangered/section7/index.html>

USFWS Section 10 - <http://www.fws.gov/southeast/es/hcp2.htm>

USFWS Section 10(a)(1)(A) Scientific Permit Requirements for Conducting Presence/Absence Surveys and Habitat Assessments for Endangered Golden-cheeked Warblers –

https://www.fws.gov/southwest/es/Documents/R2ES/GCWA_Survey_Guidelines_20100113.pdf

TCEQ Edward Aquifer Zones Map Viewer - <http://www.tceq.texas.gov/field/eapp/viewer.html>

TX Administrative Code: Edwards Aquifer –

[http://info.sos.state.tx.us/pls/pub/readtac\\$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=213](http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=213)

TPWD Federal/State Listed and Endangered Species –

http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/texas_rare_species/listed_species/