

**Habitat Conservation Plan  
for NS-374 Bridge over Leader Creek- Local No. 048-D3**

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# Executive Summary

## Executive Summary

Circuit Engineering District #4 (CED #4) has developed design plans to construct a new crossing over Leader Creek on County Road NS-374 near the town of Atwood in Hughes County, Oklahoma. The existing bridge (NBI 1310; Structure 32N3740E1430003) was built in 1923, is narrow (16.4 ft), structurally deficient, and situated on a dangerous curve. There have been several accidents associated with large trucks and school buses. The new crossing will be constructed along with new roadway on off-set alignment, which is needed to improve safety. The existing bridge is expected to remain in place.

The proposed project will affect habitat of the American burying beetle (*Nicrophorus americanus*) (ABB) within the project area. The ABB is listed as endangered under the Endangered Species Act (ESA) of 1973, as amended (16 U.S. Code [U.S.C.] 1531 et seq.). Project construction is expected to have transient and permanent impacts to approximately 0.75 acres of suitable ABB habitat. Therefore, CED #4 requires authorization from the U.S. Fish and Wildlife Service (USFWS) for “take” of the species under the ESA. This Habitat Conservation Plan (HCP) supports an application by CED #4 to the USFWS for take authorization under Section 10(a)(1)(B) of the ESA for impacts on the ABB from the construction of a new crossing over Leader Creek in Hughes County, Oklahoma.

## Section 1

# Introduction and Background

### 1.1 Overview and Background

The Habitat Conservation Plan (HCP) prepared by CC Environmental addresses potential impacts to suitable habitat and possible incidental “take” of threatened or endangered species that may occur during construction of a new crossing over Leader Creek on off-set alignment along County Road NS-374 near Atwood in Hughes County, Oklahoma. A vicinity map of the project area is provided (Figure 1). The project area encompasses 1.88 acres of land in the Arkansas River Species Status Assessment Analysis Area for the ABB south of the Canadian River in Hughes County, OK. The project area is entirely within designated Conservation Priority Area for the ABB.

The site is located in the Northern Cross Timbers Level IV Ecoregion which is typified by a mosaic of oak savanna, scrubby oak forest, eastern red cedar, and tallgrass prairie (Woods et al. 2005). The project area consists of both wooded riparian and upland prairie habitat. A portion of the project area to the south consists primarily of a dense stand of eastern red cedars. An intermittent length of Leader Creek flows to the northeast and intersects the project area near the existing bridge and NS-374 roadway.

A review was conducted to determine the project’s potential impact on federally listed threatened and endangered species, federal candidate species, and designated critical habitat. According to the USFWS’ Information Planning and Conservation (IPaC) decision making process, six (6) threatened and endangered species were identified. Based on the field reconnaissance (conducted November 17, 2017 and May 1, 2019), potential habitat was identified for the American burying beetle (ABB), but no suitable habitat was identified for the Arkansas River shiner (*Notropis girardi*), interior least tern (*Sterna antillarum*), red knot (*Calidris canutus rufa*), whooping crane (*Grus americana*), and piping plover (*Charadrius meladus*). On August 25, 2018 a presence/absence survey for the ABB was conducted for the proposed project. The survey results were positive for ABB.

### 1.2 Permit Holder/Permit Duration

CED #4 is seeking a 3-year incidental take permit from the USFWS. This permit term was selected to encompass all activities associated with roadway and crossing construction in the project area. The proposed term length should also allow for the recovery of any

temporary impacts to ABB resulting from the action. No additional take is expected in association with any ongoing right-of-way (ROW) maintenance within the project area.

### 1.3 Permit Boundary/Covered lands

The lands covered within this HCP include the new crossing over Leader Creek (34.939245, -96.353582) and off-set alignment along County Road NS-374 near Atwood in Hughes County, Oklahoma (Section 4, Township 5 North, Range 9 East IM). The project area includes a total of 1.88 acres west adjacent to the existing county roadway (Figures 1-4).

### 1.4 Species to be Covered by Permit

The following species are referred to as "covered species" related to the Incidental Take Permit if it is issued.

<u>Covered Species</u>	<u>Federal Status/State Status</u>
<b>American Burying Beetle (<i>Nicrophorus americanus</i>)</b>	<b><i>Endangered</i></b>

## 1.5 Regulatory Framework

### 1.5.1 Federal Endangered Species Act

Section 9 of the Endangered Species Act (Act) and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the U.S. Fish and Wildlife Service (Service) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying them to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Pursuant to section 11(a) and (b) of the Act, any person who knowingly violates this section 9 of the Act or any permit, certificate, or regulation related to section 9, may be subject to civil penalties of up to \$25,000 for each violation or criminal penalties up to \$50,000 and/or imprisonment of up to one year.

Individuals and State and local agencies proposing an action that is expected to result in the take of federally listed species are encouraged to apply for an incidental take permit (ITP) under section 10(a)(1)(B) of the Act to be in compliance with the law. Such permits are issued by the Service when take is not the intention of and is incidental to otherwise lawful activities. An application for an incidental take permit must be accompanied by a habitat conservation plan, commonly referred to as an HCP. The regulatory standard under section 10(a)(2)(B) of the Act for issuance of an ITP is that the effects of authorized incidental take must be minimized and mitigated to the maximum extent practicable. Under section 10(a)(2)(B) of the Act, a proposed project also must not appreciably reduce the likelihood of the survival and recovery of the species in the wild, and adequate funding for a plan to minimize and mitigate impacts must be ensured.

Section 7 of the Act requires Federal agencies to ensure that their actions, including issuing permits, do not jeopardize the continued existence of listed species or destroy or adversely modify listed species' critical habitat. "Jeopardize the continued existence of..." pursuant to 50 CFR 402.2, means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. Issuance of an incidental take permit under section 10(a)(1)(B) of the Act by the Service is a Federal action subject to section 7 of the Act. As a Federal agency issuing a discretionary permit, the Service is required to consult with itself (i.e., conduct an internal consultation). Delivery of the HCP and a section 10(a)(1)(B) permit application initiates the section 7 consultation process within the Service.

The requirements of section 7 and section 10 substantially overlap. Elements unique to section 7 include analyses of impacts on designated critical habitat, analyses of impacts on listed plant species, if any, and analyses of indirect and cumulative impacts on listed species. Cumulative effects are effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area, pursuant to section 7(a)(2) of the Act. The action area is defined by the influence of direct and indirect impacts of covered activities. The action area may or may not be solely contained within the HCP boundary. These additional analyses are included in this HCP to meet the requirements of section 7 and to assist the Service with its internal consultation.

### **1.5.2 The Section 10(a)(1)(B) Process - Habitat Conservation Plan Requirements and Guidelines**

The Section 10(a)(1)(B) process for obtaining an incidental take permit has three primary phases: (1) the HCP development phase; (2) the formal permit processing phase; and (3) the post-issuance phase.

During the HCP development phase, the project applicant prepares a plan that integrates the proposed project or activity with the protection of listed species. An HCP submitted in support of an incidental take permit application must include the following information:

1. impacts likely to result from the proposed taking of the species for which permit coverage is requested;
2. measures that will be implemented to monitor, minimize, and mitigate impacts; funding that will be made available to undertake such measures; and procedures to deal with unforeseen circumstances;
3. alternative actions considered that would not result in take; and
4. additional measures Service may require as necessary or appropriate for purposes of the plan.

The HCP development phase concludes and the permit processing phase begins when a complete application package is submitted to the appropriate permit-issuing office. A complete application package consists of 1) an HCP, 2) an Implementing Agreement (IA) if applicable, 3) a permit application, and 4) a \$100 fee from the applicant. The Service must also publish a Notice of Availability of the HCP package in the Federal Register to allow for public comment. The Service also prepares an Intra-Service Section 7 Biological Opinion; and prepare a Set of Findings, which evaluates the Section 10(a)(1)(B) permit application as in the context of permit issuance criteria (see below). An Environmental Action Statement, Environmental Assessment, or Environmental Impact Statement serves as the Service's record of compliance with the National Environmental Policy Act (NEPA), which has gone out for a 30-day, 60-day, or 90-day public comment period. An implementing agreement is required for HCPs unless the HCP qualifies as a low-effect HCP. A Section 10(a)(1)(B) incidental take permit is granted upon a determination by the Service that all requirements for permit issuance have been met. Statutory criteria for issuance of the permit specify that:

1. the taking will be incidental;
2. the impacts of incidental take will be minimized and mitigated to the maximum extent practicable;
3. adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided;
4. the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild;
5. the applicant will provide additional measures that the Service requires as being necessary or appropriate; and
6. the Service has received assurances, as may be required, that the HCP will be implemented.

During the post-issuance phase, the Permittee and other responsible entities implement the HCP, and the Service monitors the Permittee's compliance with the HCP as well as the long-term progress and success of the HCP. The public is notified of permit issuance by means of the Federal Register.

### **1.5.3 National Environmental Policy Act**

The purpose of the National Environmental Policy Act (NEPA) is two-fold: to ensure that Federal agencies examine environmental impacts of their actions (in this case deciding whether to issue an incidental take permit) and to utilize public participation. NEPA serves as an analytical tool on direct, indirect, and cumulative impacts of the proposed project alternatives to help the Service decide whether to issue an incidental take permit (ITP or section 10(a)(1)(B) permit). NEPA analysis must be done by the Service for each HCP as part of the incidental take permit application process.

### **1.5.4 National Historic Preservation Act**

All Federal agencies are required to examine the cultural impacts of their actions (e.g. issuance of a permit). This may require consultation with the State Historic Preservation Office (SHPO) and appropriate American Indian tribes. All incidental take permit applicants are requested to submit a Request for Cultural Resources Compliance form to the Service. To complete compliance, the applicants may be required to contract for cultural resource surveys and possibly mitigation.

### **1.5.5 Other Introductory or Background Topics as Appropriate**

Other relevant laws to the ITP process include Migratory Bird Treaty Act, Clean Water Act, State Endangered Species Act, California Environmental Quality Act, and other state and local legislation.

## Section 2

# Project Description/Activities Covered by Permit

### 2.1 Project Description

CED #4 proposes to construct a new crossing over Leader Creek on off-set alignment along County Road NS-374 near Atwood in Hughes County, Oklahoma. The anticipated crossing will consist of three 10-foot diameter corrugated steel pipes 75-foot in length. The newly constructed roadway will be crushed stone with two 12-foot driving lanes. The total area of impact is expected to be 1.88 acres. The new roadway and crossing will improve driver safety and the existing bridge is expected to remain in place.

### 2.2 Activities Covered by Permit

Covered activities are those that will receive take authorization through the ESA permit. Covered activities associated with the new crossing over Leader Creek and off-set alignment along County Road NS-374 include the following:

**Site Preparation-** This includes all activities related to surveying, land clearing/grubbing, earth grading and materials staging for roadway and crossing construction. Vegetation may also be cleared for property fence line reconstruction.

**Crossing Construction-** This includes all work associated with the placement of corrugated steel pipes within the OHWM of Leader Creek. Such activities often require erosion control measures (including silt fencing, earthen berms, etc.). Construction of temporary work roads, placement of fill, and equipment staging related to this activity will occur completely within the boundaries of the defined project area.

**Roadway Construction-** This includes all work associated with the construction of approximately 1,200-feet of crushed stone roadway, approximately 24-feet in total width within the study area. The roadway will be constructed of native materials, stockpiled onsite and graded using earth-moving equipment. Such activities often require erosion control measures (including silt fencing, earthen berms, etc.).

**Maintenance Activities-** Ongoing maintenance activities in the project area will include regular ROW mowing and periodic roadway regrading. Because these activities will occur in areas that have permanently been converted to unsuitable habitat as defined by USFWS (2016), they are not considered to result in incidental take and thus are not reflected in the proposed permit duration.

## Section 3

# Environmental Setting/Biological Resources

### 3.1 Environmental Setting

The project area is located within the Northern Cross Timbers subset of the Cross Timbers ecoregion of Oklahoma (29a). The Northern Cross Timbers are naturally covered by oak savanna, scrubby oak forest, eastern red cedar, and tallgrass prairie. Tallgrass prairie occurs on fine textured soils derived from shale or limestone. Livestock farming is the main land use and soils are highly erodible when disturbed. Streams are typically shallow and have sandy substrates (Woods et al. 2005).

The project area consists of both wooded riparian and upland prairie habitat. A portion of the project area to the south consists primarily of a dense stand of eastern red cedars. An intermittent length of Leader Creek flows to the northeast and intersects the project area near the existing bridge and NS-374 roadway. The project area encompasses 1.88 acres of land in the Arkansas River Species Status Assessment Analysis Area for the ABB south of the Canadian River in Hughes County, OK. The project area is entirely within designated Conservation Priority Area for the ABB.

#### 3.1.1 Climate

<b>Precipitation</b>	Mean annual inches	36-46 inches
<b>Growing Season</b>	Number of days	195-225 days
<b>Mean Temperatures</b>	Summer min/max	70/94 degrees F
	Winter min/max	26/49 degrees F

#### 3.1.2 Topography/Geology

Surface topography in the project area ranges from 800-feet above mean sea level (MSL) at the southern boundary of the project area to 785-feet MSL at the northern boundary.

Soil Class	Arkansas Ridge and Valley
Soil Name	Kamie-Larton-Porum
Soil Type	Alfisols
Soil Characteristics	Very deep, loamy, and moderately acid soils on gentle slopes (up to 5%);

### 3.1.3 Hydrology/Streams, Rivers, Drainages

The project is within the Leader Creek local watershed which is part of the Big Creek (HUC-12-110902020604) watershed of Lake Konawa and the Canadian River. Leader Creek is designated as an intermittent stream within the study area but becomes a perennial stream system approximately 1.40 miles downstream and to the northeast of the project area.

### 3.1.4 Existing Land Use

Existing land use in the project area includes upland forested land south of Leader Creek and upland prairie to the north. Woody species include oak (*Quercus* spp.) and eastern red cedar (*Juniperus virginiana*) in the upland areas and green ash (*Fraxinus pennsylvanica*), redbud (*Cercis canadensis*), elm (*Ulmus* spp.), and cottonwood (*Populus deltoides*) along the riparian corridor. Common understory species included Virginia creeper (*Parthenocissus quinquefolia*), greenbrier (*Smilax* spp.), poison ivy (*Toxicodendron radicans*), and milkvetch (*Astragalus* spp.). The upland prairie area of the study area includes a mix of grasses/forbs such as bermudagrass (*Cynododon dactylon*), cheatgrass (*Bromus tectorum*), and annual bluegrass (*Poa annua*) as well as silver bluestem (*Bothriochloa laguroides*), little bluestem (*Andropogon scoparium*), and berseem (*Trifolium alexandrinum*).

The surrounding area appears to exhibit similar community composition as the project area. Much of the current land use is grazed rangeland with swaths of cross timbers woodlands primarily along riparian corridors and surface water impoundments. There are few residences in the vicinity and the nearest town is Atwood, OK, approximately 1.50 miles to the northeast. There appears to be some older oil wells and tank batteries in the vicinity of the project area.

## 3.2 Covered Wildlife and Fish Species

The American burying beetle (*Nicrophorus americanus*; ABB) was federally listed as endangered in 1989 (54 FR 29652) by the USFWS. Due to its federal listing as endangered, activities that may affect ABB, whether adverse or completely beneficial, are regulated to ensure conservation and persistence of the species.

The ABB is the largest silphid (carrion beetle) in North America, and is native to 35 states in the U.S. The species is believed to be extirpated from all but nine of these states and is now known only to occur in portions of Arkansas, Kansas, Oklahoma, Nebraska, South Dakota, and Texas (none documented since 2008), on Block Island off the coast of Rhode Island, and reintroduced populations in Massachusetts and southwest Missouri (USFWS, 2019).

The ABB is primarily a nocturnal species that lives for only about one year. They are active from late spring through early fall before burying themselves in the soil to hibernate for the winter. Reproduction occurs in the spring to early summer. New adult offspring (called teneral)

emerge in the summer, over-winter, then comprise the breeding population the following summer (Kozol et al., 1988; Amaral et al., 2005). Adults and larvae both depend on carrion or dead animals for food, moisture, and reproduction (USFWS, 2019).

Ecosystems supporting ABB populations are diverse and include several suitable vegetation and soil types (Creighton et al., 1993; Lomolino and Creighton, 1996; Lomolino et al., 1995; USFWS, 1991). Although they are considered habitat generalists while foraging, they are believed to be more selective with suitable breeding habitat (Anderson, 1982). Foraging habitat for the ABB can include nearly any generally undisturbed area where carrion is available. Furthermore, carrion types are less limiting for adequate foraging compared to carrion for reproduction because forage carrion does not have to be buried. Reproductive habitat for the ABB is crucial to the persistence of the species, especially because the ABB is an annual species. Properly functioning ecosystems that contain diverse vegetative communities to sustain wildlife populations are essential to facilitating ABB reproduction. In addition, soils must be suitable for excavation, formation of brood chambers, and over-wintering. Soils that are too compact may prevent ABBs from completing their life cycle.

The project area is located within the Arkansas River Species Status Assessment Analysis Area. This ABB population area encompasses 17,753,431 acres made up of multiple ecoregions and habitat types from old mountains to prairies. Large portions of the Arkansas River Analysis Area are dominated by forests and grasslands/pasturelands and approximately 46% of the total area included in this analysis area is considered favorable for ABB. Based on the most recent Species Status Assessment Report published by the USFWS (February 2019), the Arkansas River Analysis Area currently has a high resiliency but are at risk of extirpation under future climate change scenarios.

## Section 4

# Potential Biological Impacts/Take Assessment

### 4.1 Direct and Indirect Impacts

Permanent changes to habitat are expected in the study area as a result of roadway and crossing construction. Because the proposed project requires off-set alignment to the west of the existing roadway, some forested area and upland grass/pastureland will be converted to impermeable roadway and maintained ROW. There will also be some work within the ordinary high-water mark of Leader Creek, however, based on design plans, less than 0.1 acre of fill is anticipated in potentially jurisdictional waters. Furthermore, the crossing design is not expected to impede current hydraulic flow. This project is expected to qualify for a U.S. Army Corps of Engineers (USACE) Nationwide-14 permit and appropriate coordination and approval will be obtained from the USACE prior to any construction activities within Leader Creek. Any water quality impacts associated with construction of the crossing or placement of temporary work roads are considered temporary and best management practices (BMPs) will be in place to minimize such impacts. The existing bridge is expected to be left in place.

### 4.2 Anticipated Take on Covered Wildlife or Fish Species

Take of ABBs is anticipated to occur from covered activities in the form of direct mortality of individuals (adults and/or larvae) by mechanical means associated with site preparation and construction activities. Take is also anticipated in the form of loss and degradation of suitable habitat as well as temporary disruptions in normal ABB behavior (harassment) in the project area.

Due to the difficulty of quantifying mortality of ABBs in the field because of their size and life history traits, take, as it pertains to this HCP, will be quantified by impacts to suitable ABB habitat within the project area. Currently, the project area contains approximately 0.75 acres of suitable ABB habitat.

**Table 1.** ABB Habitat Breakdown for the Proposed Study Area

Habitat	Impact Duration	Acreage
<b>Suitable Habitat</b>	Temporary	-
	Permanent Cover Change	0.5
	Permanent	0.25
	-	<b>0.75</b>
<b>Unsuitable Habitat</b>	-	<b>1.13</b>

**Temporary impacts-** These are considered impacts that affect ABB habitat for 5 years or less (USFWS, 2016). Because the entire study area is expected to be converted to impermeable roadway and maintained ROW, none of the covered activities are expected to only have a temporary impact to suitable ABB habitat within the study area.

**Permanent cover change impacts-** These are considered impacts that change the successional stage of an area. Similar to temporary impacts, these areas will be restored to suitable ABB habitat within 5 years. However, if these areas are permanently maintained at a different successional stage (through processes such as vegetation control), the USFWS considers the vegetation cover of the area to have been permanently changed. Of the approximately 0.75 acres of suitable ABB habitat within the project area, 0.50 acres will be converted to vegetated ROW which will periodically be maintained to inhibit woody encroachment into driving lanes. Initially, the ROW will be resodded with bermudagrass, however, once exposed soils/slopes are stabilized, a second reseeding will occur with native and/or local grown or collected species and seeds. Specific selection will follow NRCS, OSU Extension guidance references (e.g., PT 97-42 October 1997 Vol. 9, No. 42; OSU Extension NREM-2872; NREM-2869, etc.) as well as other accepted resources (e.g., Noble Foundation).

**Permanent impacts-** These are considered impacts that eliminate ABB habitat or impacts to habitat that take longer than 5 years recover. Construction of roadway and crossing in the project area will result in permanent conversion of suitable ABB habitat. Of the approximately 0.75 acres of suitable ABB habitat within the project area, 0.25 acres will be converted to impermeable roadway surface.

### 4.3 Cumulative Impacts

In contrast with the analysis of cumulative impacts under section 7 of the Act, NEPA analysis of cumulative impacts account for incremental impacts of the action on the environment when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. The geographic area for analysis may be defined by the manifestation of direct or indirect impacts as a result of covered activities.

The purpose of this project is to improve public safety on a rural county road. At this time, it is not expected that traffic will increase as a result of the action. There are no commercial businesses and few residences in the area.

## **4.6 Anticipated Impacts of the Taking**

Incidental take of the ABB within the project area may result in a small reduction of breeding individuals due to direct mortality during construction activities which could lead to lower recruitment in the following year. Also, soil compaction and removal of reproductively viable carrion may interrupt ABB larval stages, and lower the reproductive population the following year. However, the project area is relatively small and bounded by large swaths of suitable ABB habitat which may increase the ABBs ability to avoid the area altogether during construction activities.

## Section 5

# Conservation Program/Measures to Minimize and Mitigate for Impacts

### 5.1 Biological Goals and Objectives

Section 10(a)(2)(A) of the Act requires that an HCP specify the measures that the permittee will take to minimize and mitigate to the maximum extent practicable the impacts of the taking of any federally listed animal species as a result of activities addressed by the plan.

As part of the “Five Point” Policy adopted by the Services in 2000, HCPs must establish biological goals and objectives (65 *Federal Register* 35242, June 1, 2000). The purpose of the biological goals is to ensure that the operating conservation program in the HCP is consistent with the conservation and recovery goals established for the species. The goals are also intended to provide to the applicant an understanding of why these actions are necessary. These goals are developed based upon the species’ biology, threats to the species, the potential effects of the Covered Activities, and the scope of the HCP.

**Goal 1:** Minimize impacts on ABB habitat from covered activities during construction of a new crossing over Leader Creek on off-set alignment along County Road NS-374 near Atwood in Hughes County, Oklahoma.

**Objective 1:** Goal 1 will be achieved through the implementation of Avoidance and Minimization Measures (AMMs) detailed in Section 5.2.

**Goal 2:** Mitigate the unavoidable loss of suitable ABB habitat from construction of a new crossing over Leader Creek on off-set alignment along County Road NS-374.

**Objective 2:** Goal 2 will be achieved through the purchase of credits determined by established mitigation ratios for the species. Credits will be purchased through a USFWS-approved ABB conservation bank.

## 5.2 Minimization and Mitigation Measures

### 5.2.1 Minimization Measures

#### 1. Reduce motor vehicle, machinery, and heavy equipment use

Motor vehicles, machinery, and heavy equipment can generate take of ABBs by crushing and collisions when individuals of the species are above-ground or by soil compaction when the species is underground. Reducing the number and use of motor vehicles and heavy equipment in occupied ABB habitat can minimize impacts from these activities. The number and use of motor vehicles and heavy equipment necessary in occupied ABB habitat will be minimized to meet the objectives of the project. When heavy equipment, machinery, or motor vehicle use is required, these vehicles will be allowed only in the areas that are necessary for the required activity. All motor vehicles, machinery, and heavy equipment shall be parked within areas already impacted or in areas where disturbance is planned to occur.

#### 2. Reduce soil erosion/increase soil stability

Land erosion can directly impact ABB habitat and cause take of ABBs. To prevent topsoil loss, gully formation, or other negative impacts to ABB habitat, erosion control techniques will be implemented and an Oklahoma Department of Environmental Quality (ODEQ) Stormwater Management Plan utilizing BMPs will be used to control the volume, rate and water quality of stormwater runoff during and post-construction.

#### 3. Provide education to onsite personnel

Human presence and movement within ABB habitat may cause take of ABBs. All workers operating in the project area will be trained about ABB habitat, biology, reasons for ABB decline, and the responsibility of all workers to protect the ABB. All workers will be required to report any ABB sightings to the project manager or environmental inspector, remove all food wastes from the ROW each day, and prohibit dogs or cats on the. Additionally, all workers will park their vehicles within already impacted areas or areas where disturbance is planned to occur.

#### 4. Limit Use of Artificial Lighting

Artificial lighting (i.e., from construction or operations at night) can cause take of ABBs by interfering with normal behavior patterns. Activities occurring during the ABB active season within the project area will be limited to daylight hours.

#### 5. Prevent Invasive Species Establishment

Invasive plant or animal species could occur or be introduced into areas that have been cleared during construction activities onsite, subsequently reducing or affecting the quality of future potential habitat for the ABB by changing the vegetation characteristics or carrion base. In order to minimize the potential spread of invasive species, vehicles should be cleaned prior to entering the site. Weed free seed mixes and weed free haybales could be used as well. Should noxious weed infestations occur in the project area, invasive species control measures will be implemented. Such measures might include capture or destruction

of the invasive species through mechanical, biological, and, in carefully limited circumstances, chemical measures.

**5.2.2 Measures to Mitigate Unavoidable Impacts**

Unavoidable ABB habitat impacts from covered activities will be offset through conservation and management of ABB habitat in perpetuity. ABB credits will be purchased at a USFWS approved conservation bank with a service territory that includes the plan area. Conservation banks are mitigation lands that are established by a bank sponsor. These sites are usually established to mitigate for the effects of multiple projects. By definition, a USFWS-approved conservation bank meets the minimum standards and other requirements described in the USFWS guidelines, American Burying Beetle Conservation Strategy for the Establishment, Management, and Operations of Mitigation Lands and Guidance for the Establishment, Use, and Operation of Conservation Banks (USFWS, 2014). Conservation banks are established through a conservation bank agreement with FWS and a conservation easement for the bank that must be approved by the USFWS. The appropriate amount of credits will be purchased prior to any habitat impacts that could result in take of the ABB.

**5.2.3 Mitigation Ratios**

Mitigation ratios are established to provide appropriate mitigation for the type, duration, and location of project-related impacts and related take or effects of take as well as provide progressively more mitigation for progressively more severe levels of adverse effects or take.

**Table 2.** Mitigation Ratios for ABB Impacts. Ratio = acres of impact; acres of offset

Impact Duration	Location of impact		
	ABB Range (but not within CPA)	Conservation Priority Area (CPA)	Mitigation Land
Temporary	1:0.25	1:0.5	1:1.5*
Permanent Cover Change	1:0.5	1:1	1:2*
Permanent	1:1	1:2	1:3*

\*Mitigation Land ratio= CPA ratio plus replacement of lost mitigation value

Based on USFWS established mitigation ratios, the following table provides a summary of the expected mitigation required for the construction of a new crossing over Leader Creek on off-set alignment along County Road NS-374 near Atwood in Hughes County, Oklahoma.

**Table 3.** Mitigation for the crossing and roadway construction in Conservation Priority Area in Hughes County, OK

Impact Duration	Mitigation Ratio	Project Impacts to ABB (acres habitat)	Required Mitigation (acres)
Temporary	1:0.5	-	0
Permanent Cover Change	1:1	0.5	0.5
Permanent	1:2	0.25	0.5
<b>Total</b>	-	<b>0.75</b>	<b>1.0</b>

### 5.3 MONITORING

Compliance monitoring verifies that the HCP is being fully implemented and that terms and conditions of permit are being met. Compliance monitoring requires that an annual report be prepared and submitted for USFWS review and comment throughout the permit term.

Annual Reports to the USFWS will include:

1. Brief summary or list of project activities accomplished during the reporting year (e.g. this includes development/construction activities, and other covered activities)
2. Project impacts (e.g. number of acres graded, roadway construction specifications, etc.)
3. Description of any take that occurred for each covered species (includes cause of take, form of take, take amount, location of take and time of day, and deposition of dead or injured individuals). In addition to inclusion of any take described and submitted in annual reports, immediate notification will be given to the USFWS for any encountered dead or injured ABB discovered onsite.
4. Brief description of conservation strategy implemented
5. Monitoring results (compliance, effects and effectiveness monitoring) and survey information (if applicable)
6. Description of circumstances that made adaptive management necessary and how it was implemented. Please include a table including the cumulative totals; by reporting period all adaptive management changes to the HCP, including a very brief summary of the actions.
7. Description of any changed or unforeseen circumstances that occurred and how they were dealt with
8. Funding expenditures, balance, and accrual
9. Description of any minor or major amendments

Adaptive management is a component of the HCP Handbook. However, the USFWS acknowledges that an adaptive management strategy is not needed for HCPs where the effects of the HCP are minor and well understood and when implementation of the HCP would not pose a significant risk to the species at the time the incidental take permit is issued. Due to the minor impacts that would result from this HCP, no adaptive management strategy is needed.

## Section 6

# Changed and Unforeseen Circumstances

### 6.1 Changed Circumstances

#### 6.1.1 Summary of Circumstances

Section 10 regulations [(69 *Federal Register* 71723, December 10, 2004 as codified in 50 Code of Federal Regulations (C.F.R.), Sections 17.22(b)(2) and 17.32(b)(2))] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the HCP No Surprises Rule [50 CFR 17.22 (b)(5) and 17.32 (b)(5)] describes the obligations of the permittee and the Service. The purpose of the No Surprises Rule is to provide assurance to the non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

Changed circumstances are defined in 50 CFR 17.3 as changes in circumstances affecting a species or geographic area covered by an HCP that can reasonably be anticipated by plan developers and the Service and for which contingency plans can be prepared (e.g., the new listing of species, a fire, or other natural catastrophic event in areas prone to such event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating conservation program (e.g., the conservation management activities or mitigation measures expressly agreed to in the HCP or IA), then the permittee will implement those measures as specified in the plan. However, if additional conservation management and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Service will not require these additional measures absent the consent of the permittee, provided that the HCP is being

“properly implement” (properly implemented means the commitments and the provisions of the HCP and the IA have been or are fully implemented).

### **6.1.2 Delisting During Permit Term**

If the ABB is delisted during the term of the Permit, it is expected that such delisting would be made partly in response to mitigation actions including those listed in this HCP. Consequently, mitigation funding refund will not be sought and operation and maintenance of any established mitigation lands would continue into perpetuity. However, delisting would remove the prohibition for new project-related incidental take to occur, so restrictions related to future operation or maintenance activities within ABB habitat would no longer apply. Implementation of conservation measures to reduce threats to the species may continue within the project area, especially during the Service’s required 5-year post delisting monitoring of the species’ status.

### **6.1.3 Fire, Flood, Drought, and Tornadoes**

Restored ABB habitat or habitat included in the permanent land cover change may experience fire, flooding, or tornado impacts during the term of the HCP. If a fire, flood, or tornado occurs in the project area during the permit term and vegetated sites are damaged, the locations will be revegetated as necessary to restore ABB habitat. If a natural event affects ABB habitat or habitat included in the permanent land cover change which had met success criteria, no additional restoration or vegetation re-establishment efforts are necessary.

### **6.1.4 New Species Listing During the Permit Term**

In the event that a species occurring within the project area becomes listed under the ESA, the degree to which the species has potential to be taken by the covered activities will be evaluated. Depending on this evaluation, a decision as to whether to seek coverage of the species through an amendment to the HCP will be made.

## **6.3 Unforeseen Circumstances**

Unforeseen circumstances are defined in 50 CFR 17.3 as changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the Service at the time of the HCP’s negotiation and development and that result in a substantial and adverse change in status of the covered species. The purpose of the No Surprises Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

In case of an unforeseen event, the permittee shall immediately notify the Service staff who have functioned as the principal contacts for the proposed action. In determining whether such an event constitutes an unforeseen circumstance, the Service shall consider, but not be limited to, the following factors: size of the current range of the affected species; percentage of range adversely affected by the HCP; percentage of range conserved by the HCP; ecological significance of that portion of the range affected by the HCP; level of knowledge about the affected species and the degree of specificity of the species' conservation program under the HCP; and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

If the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstances where the HCP is being properly implemented, the additional measures required of the permittee must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to adjustments within lands or waters that already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures shall involve the commitment of additional land or financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under original terms of the HCP only with the consent of the permittee.

## **6.4 Amendments**

### **6.4.1 Minor Amendments**

Minor amendments are changes that do not affect the scope of the HCP's impact and conservation strategy, change amount of take, add new species, and change significantly the boundaries of the HCP. Examples of minor amendments include correction of spelling errors or minor corrections in boundary descriptions. The minor amendment process is accomplished through an exchange of letters between the permit holder and the Service's Field Office.

### **6.4.2 Major Amendments**

Major amendments to the HCP and permit are changes that do affect the scope of the HCP and conservation strategy, increase the amount of take, add new species, and change significantly the boundaries of the HCP. Major amendments often require amendments to the Service's decision documents, including the NEPA document, the biological opinion, and findings and recommendations document. Major amendments will often require additional public review and comment.

## 6.5 Suspension/Revocation

The Service may suspend or revoke their respective permits if CED #4 fails to implement the HCP in accordance with the terms and conditions of the permits or if suspension or revocation is otherwise required by law. Suspension or revocation of the Section 10(a)(1)(B) permit, in whole or in part, by the Service shall be in accordance with 50 CFR 13.27-29, 17.32 (b)(8).

## 6.6 Permit Renewal

Upon expiration, the Section 10(a)(1)(B) permit may be renewed without the issuance of a new permit, provided that the permit is renewable, and that biological circumstances and other pertinent factors affecting covered species are not significantly different than those described in the original HCP. To renew the permit, CED #4 shall submit to the Service, in writing:

- \* a request to renew the permit; reference to the original permit number;
- \* certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct, and inclusion of a list of changes;
- \* a description of any take that has occurred under the existing permit; and
- \* a description of any portions of the project still to be completed, if applicable, or what activities under the original permit the renewal is intended to cover.

If the Service concurs with the information provided in the request, it shall renew the permit consistent with permit renewal procedures required by Federal regulation (50 CFR 13.22). If CED #4 files a renewal request and the request is on file with the issuing Service office at least 30 days prior to the permits expiration, the permit shall remain valid while the renewal is being processed, provided the existing permit is renewable. However, CED #4 may not take listed species beyond the quantity authorized by the original permit or change the scope of the HCP. If CED #4 fails to file a renewal request within 30 days prior to permit expiration, the permit shall become invalid upon expiration. CED #4 and the mitigation bank operator (if applicable) must have complied with all annual reporting requirements to qualify for a permit renewal.

## 6.7 Permit Transfer

In the event of a sale or transfer of ownership of the property during the life of the permit, the following will be submitted to the Service by the new owner(s): a new permit application, permit fee, and written documentation providing assurances pursuant to 50 CFR 13.25 (b)(2) that the new owner will provide sufficient funding for the HCP and will implement the relevant terms and conditions of the permit, including any outstanding minimization and mitigation. The new owner(s) will commit to all requirements regarding the take authorization and mitigation obligations of this HCP unless otherwise specified in writing and agreed to in advance by the Service.

## Section 7 Funding

### 7.1 Costs of HCP Implementation

CED #4 is committed to funding and implementing all conservation measures described in Section 5. The cost of minimization measures is expected to be minimal compared to the capital cost of construction of the crossing and new roadway. Ultimately, revegetation will occur with native and/or local grown or collected species and seeds. Specific selection will follow NRCS, OSU Extension guidance references (e.g., PT 97-42 October 1997 Vol. 9, No. 42; OSU Extension NREM-2872; NREM-2869, etc.) as well as other accepted resources (e.g., Noble Foundation). The estimated cost of vegetation restoration outside the roadway and in disturbed areas within the project area is estimated to be \$5,000, including monitoring and remediation, if necessary.

CED #4 will also enter into a purchase agreement with Mitigation Solutions, USA, from which it will purchase mitigation credits to offset impacts from covered activities, as described in Section 5. Prior to issuance of the permit and prior to impacts on ABB, a letter documenting the reservation or purchase of credits at a USFWS-approved conservation bank for ABB will be provided to USFWS personnel. The amount of credits reserved or purchased will be consistent with the amounts required in Section 5.

The credit price paid will include the long-term cost of all ABB management and monitoring actions at the conservation bank. Therefore, the conservation bank sponsor will be responsible for implementing all management and monitoring actions to maintain ABB habitat at the conservation bank.

CED #4 will be responsible for funding any remedial actions during the term of the permit that may be necessary in response to changed circumstances described in Section 6.

## Section 8 Alternatives

### 8.1 Summary

Section 10(a)(2)(A)(iii) of the Endangered Species Act of 1973, as amended, [and 50 CFR 17.22(b)(1)(iii) and 17.32(b)(1)(iii)] requires that alternatives to the taking of species be considered and reasons why such alternatives are not implemented be discussed.

### 8.2 No Action Alternative

The No Action Alternative means that an HCP and incidental take permit would not be issued. This also means current conditions and activities that will not cause take of federally listed species could continue.

A No Action Alternative would not address the need for the proposed project and public safety would continue to be at risk at this location. Because crossing construction and curve correction in the project area are necessary for improving public safety, this alternative was not selected.

### 8.3 Existing Structure Replacement, No Roadway Realignment

Under this alternative, rather than constructing a new crossing on off-set alignment, the existing structure would be replaced with a structurally sufficient crossing on alignment with the existing roadway. While this alternative would reduce the impacted area, it would not appropriately address public safety since it does not correct the existing dangerous curve. Therefore, this alternative was not selected.

## 9.0 LITERATURE CITED

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## **APPENDICES (Optional)**

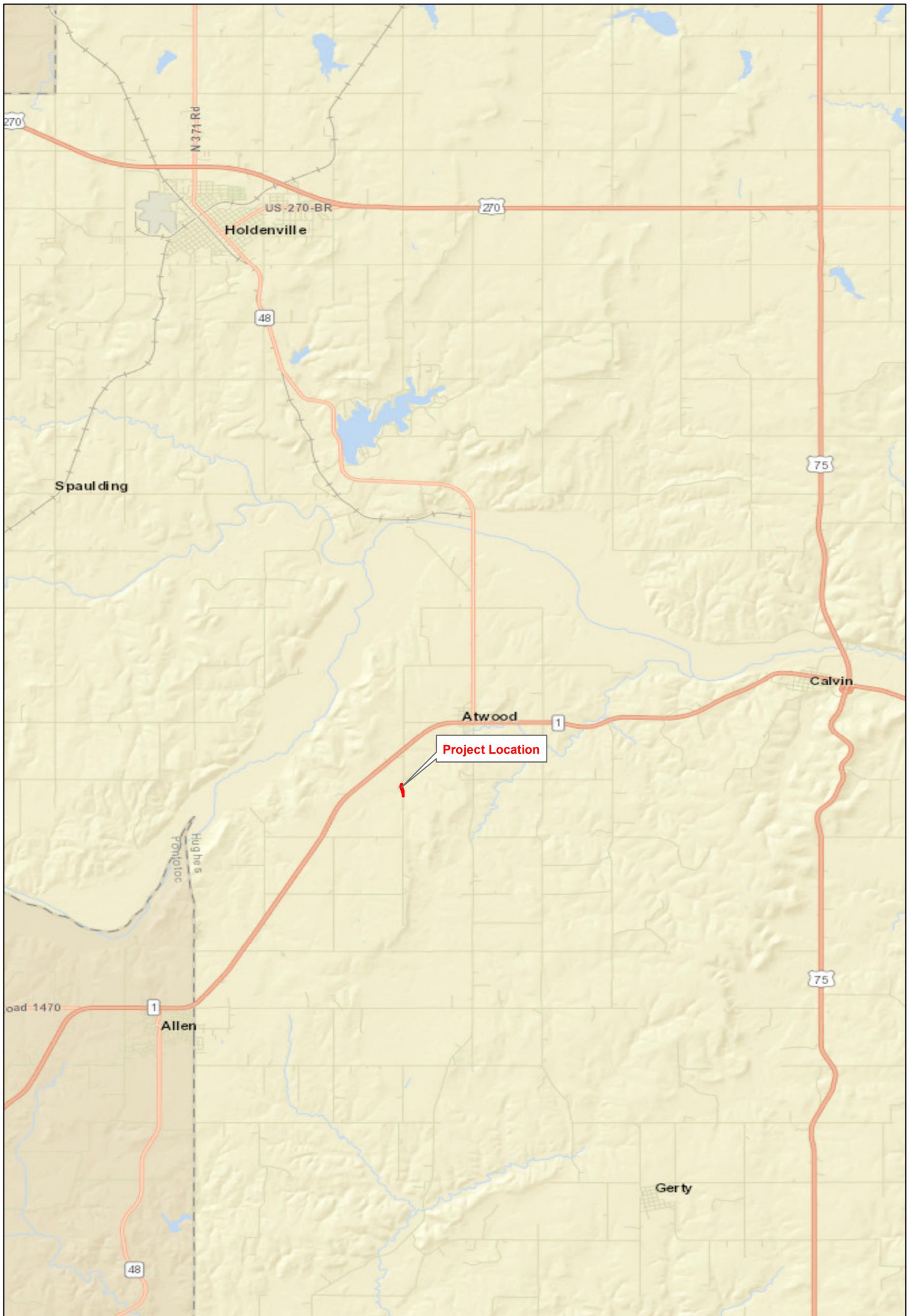
A. Maps/Figures

B. Biological Reports/Biological Assessments

This template was prepared by Jen Lechuga, HCP Coordinator for the Ventura Fish and Wildlife Office (VFWO), in collaboration with VFWO staff, September 2005.

## **APPENDIX A**

Maps/Figures



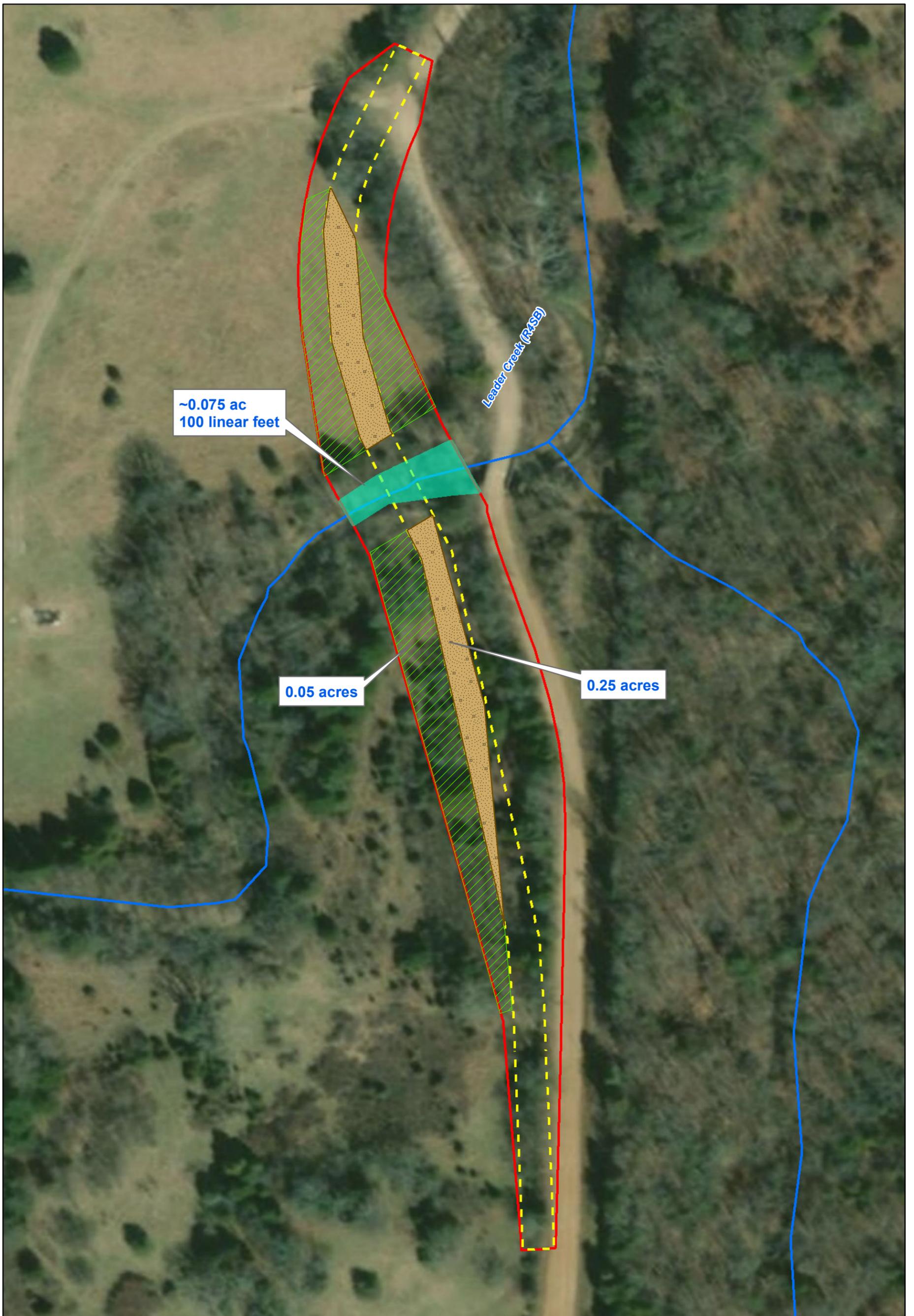
<b>COMMENTS/LEGEND</b>	<b>GENERAL LOCATION</b>		<b>Figure 1</b>
<div style="display: flex; align-items: center;"> <div style="border: 2px solid red; width: 20px; height: 10px; margin-right: 5px;"></div> <span>Proposed ROW</span> </div> <div style="text-align: center; margin-top: 10px;">    </div>	<p>Bridge &amp; Approaches:  NS-374 Over Leader Creek  Hughes County, OK</p>	<p>DRAWN BY: NJ  APPRV BY:  SOURCE: DEQ, Tiger 2000,  USGS</p>	11/22/2017



~0.075 ac  
100 linear feet

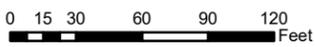
Leader Creek (R-ASB)

<b>COMMENTS/LEGEND</b>		<b>AERIAL MAP</b>	 Environmental Engineering	<b>Figure 2</b>
 Proposed ROW  NWI Wetlands  Mapped Streams  Approximate OHWM	 			Bridge & Approaches: NS-374 Over Leader Creek Hughes County, OK



**COMMENTS/LEGEND**

-  Permanent Effect (ABB)
-  Permanent Cover Change (ABB)
-  Approximate OHWM
-  New\_Roadway
-  Proposed ROW
-  Mapped Streams
-  NWI Wetlands



**POTENTIAL ABB HABITAT**

Bridge & Approaches:  
NS-374 Over Leader Creek  
Hughes County, OK



DRAWN BY: NJ  
APPRV BY:  
SOURCE: DEQ, Tiger 2000,  
USGS

**Figure 3**

6/7/2019

# American Burying Beetle Oklahoma Overview Map

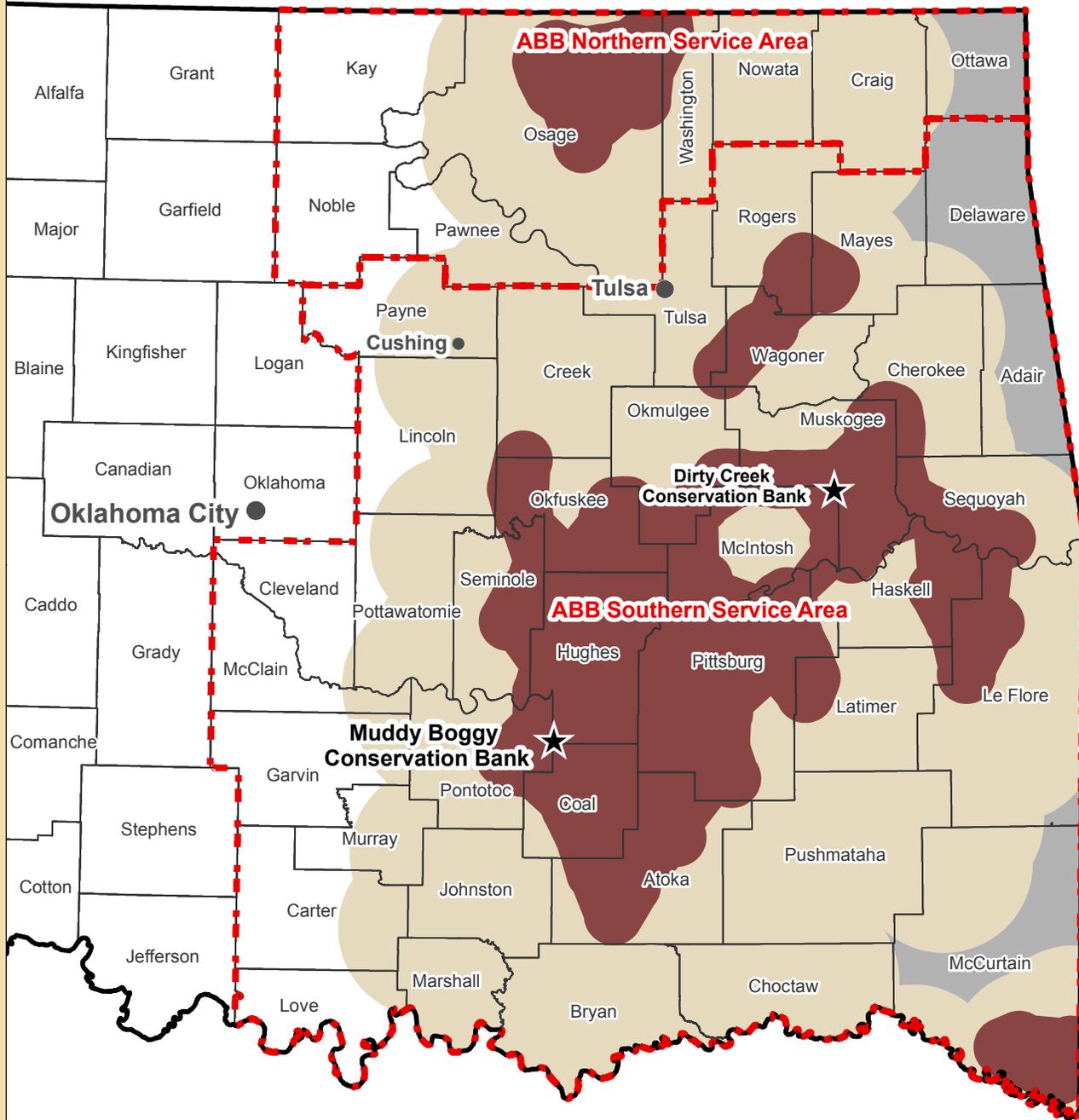
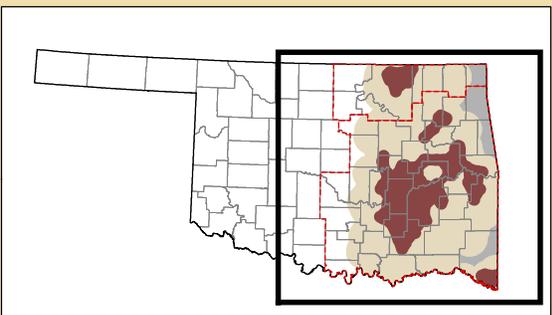


Figure 4



- ★ Conservation Bank Location
- ABB Range (March 2016)
- ABB Range\*
- Potential ABB Range\*\*
- ABB Conservation Priority Areas
- ABB Service Areas
- Counties
- Cities

\*Within 30 km of documented ABB occurrence  
\*\*Not within 30 km of a documented ABB occurrence, but the Service recommends considering this area as potential ABB range due to potential ABB habitat and previously documented ABB locations in adjacent states



## **APPENDIX B**

### Biological Reports



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Oklahoma Ecological Services Field Office  
9014 East 21st Street  
Tulsa, OK 74129-1428  
Phone: (918) 581-7458 Fax: (918) 581-7467  
<http://www.fws.gov/southwest/es/Oklahoma/>

In Reply Refer To:

June 07, 2019

Consultation Code: 02EKOK00-2019-SLI-2342

Event Code: 02EKOK00-2019-E-05654

Project Name: Hughes County- NS-374 Bridge over Leader Creek

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process <http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm>.

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Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Oklahoma Ecological Services Field Office**

9014 East 21st Street

Tulsa, OK 74129-1428

(918) 581-7458

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## Project Summary

Consultation Code: 02EKOK00-2019-SLI-2342

Event Code: 02EKOK00-2019-E-05654

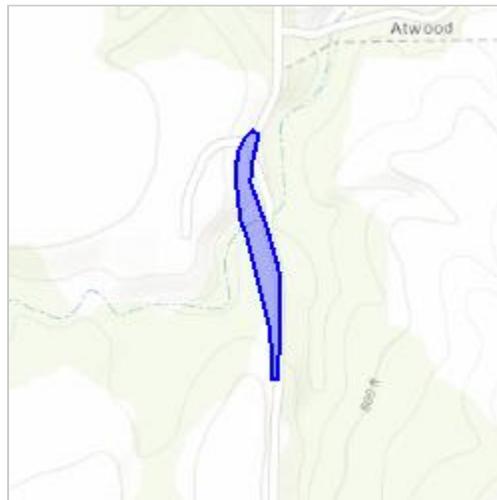
Project Name: Hughes County- NS-374 Bridge over Leader Creek

Project Type: WASTEWATER FACILITY

Project Description: New crossing over Leader Creek on off-set alignment

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/34.93886787442082N96.35340471689648W>



Counties: Hughes, OK

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## Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Birds

NAME	STATUS
Least Tern <i>Sterna antillarum</i> Population: interior pop. No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8505">https://ecos.fws.gov/ecp/species/8505</a>	Endangered
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a>	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>	Threatened
Whooping Crane <i>Grus americana</i> Population: Wherever found, except where listed as an experimental population There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/758">https://ecos.fws.gov/ecp/species/758</a>	Endangered

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## Fishes

NAME	STATUS
Arkansas River Shiner <i>Notropis girardi</i> Population: Arkansas River Basin (AR, KS, NM, OK, TX) There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/4364">https://ecos.fws.gov/ecp/species/4364</a>	Threatened

## Insects

NAME	STATUS
American Burying Beetle <i>Nicrophorus americanus</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/66">https://ecos.fws.gov/ecp/species/66</a>	Endangered

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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# USFWS National Wildlife Refuge Lands And Fish Hatcheries

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

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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## Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

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

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

### Migratory Birds FAQ

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

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

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

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

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

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

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

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

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

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

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

### **What are the levels of concern for migratory birds?**

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

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

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

### **Details about birds that are potentially affected by offshore projects**

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

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

### **What if I have eagles on my list?**

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

### **Proper Interpretation and Use of Your Migratory Bird Report**

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

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## Wetlands

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

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

RIVERINE

- [R4SBA](#)
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## Species Conclusions Table

Project Name: Hughes County Bridge Leader Creek – Atwood Bridge, Local No. 048-D3

Date: 6/7/2019

Species / Resource Name	Conclusion	ESA Section 7	Notes / Documentation
Interior least tern ( <i>Sterna antillarum</i> )	Species not present, no potential habitat present	No Effect	Site Reconnaissance was conducted on 5/1/2019. Project area lacks broad, open expanses along a major river which may include suitable nesting, foraging and/or stopover habitat.
Piping Plover ( <i>Charadrius melodus</i> )	Species not present, no potential habitat present	No Effect	Site Reconnaissance was conducted on 5/1/2019. Project area lacks broad, open expanses along a major river which may include suitable foraging and/or stopover habitat.
Red Knot ( <i>Calidris canutus</i> )	Species not present, no potential habitat present	No effect	Site Reconnaissance was conducted on 5/1/2019. Project area lacks freshwater mudflats and has negligible, open grassland area.
Whooping Crane ( <i>Grus americana</i> )	Species not present, no potential habitat present	No Effect	Site Reconnaissance was conducted on 5/1/2019. Project area lacks large marshes and other shallow waterbodies to provide roosting and/or migrating stopover habitat.
Arkansas River Shiner ( <i>Notropis girardi</i> )	Species not present, no potential habitat present	No Effect	Site Reconnaissance was conducted on 5/1/2019. Project area lacks wide, sandy channel prairie rivers.
American Burying Beetle ( <i>Nicrophorus americanus</i> )	Potential habitat present	May Affect, Likely to Adversely Affect	Site Reconnaissance was conducted on 5/1/2019. Project area includes approximately <b>0.75</b> acre of potential habitat.



# S.E.A.R.C.H., LLC

Smith Environmental and Research Consulting House, LLC.  
218 South Wright Street, Siloam Springs, AR 72761  
[AmySmith@searchconsultinghouse.com](mailto:AmySmith@searchconsultinghouse.com) 479-238-5939

Mr. Geoff Canty  
CC Environmental  
3533 National Drive  
P.O. Box 1292  
Norman, OK 73069

August 27, 2018

RE: ABBs found at NS-374 over Leader Creek

Dear Mr. Candy,

The presence/absence survey for American burying beetles (ABBs) at NS-374 bridge over Leader Creek (Figure 1) was completed on August 25, 2018. The survey results were positive, with two ABBs found on the second trap night. The trap was removed upon finding the ABBs and the survey was considered complete. I have attached a copy of the data sheets and have included a digital copy of the electronic report that will be submitted to the USFWS per their protocols.

Thank you for considering S.E.A.R.C.H. for this project. Please let me know if you have questions or comments.

Sincerely,

Dr. Amy D. F. Smith  
Owner/President

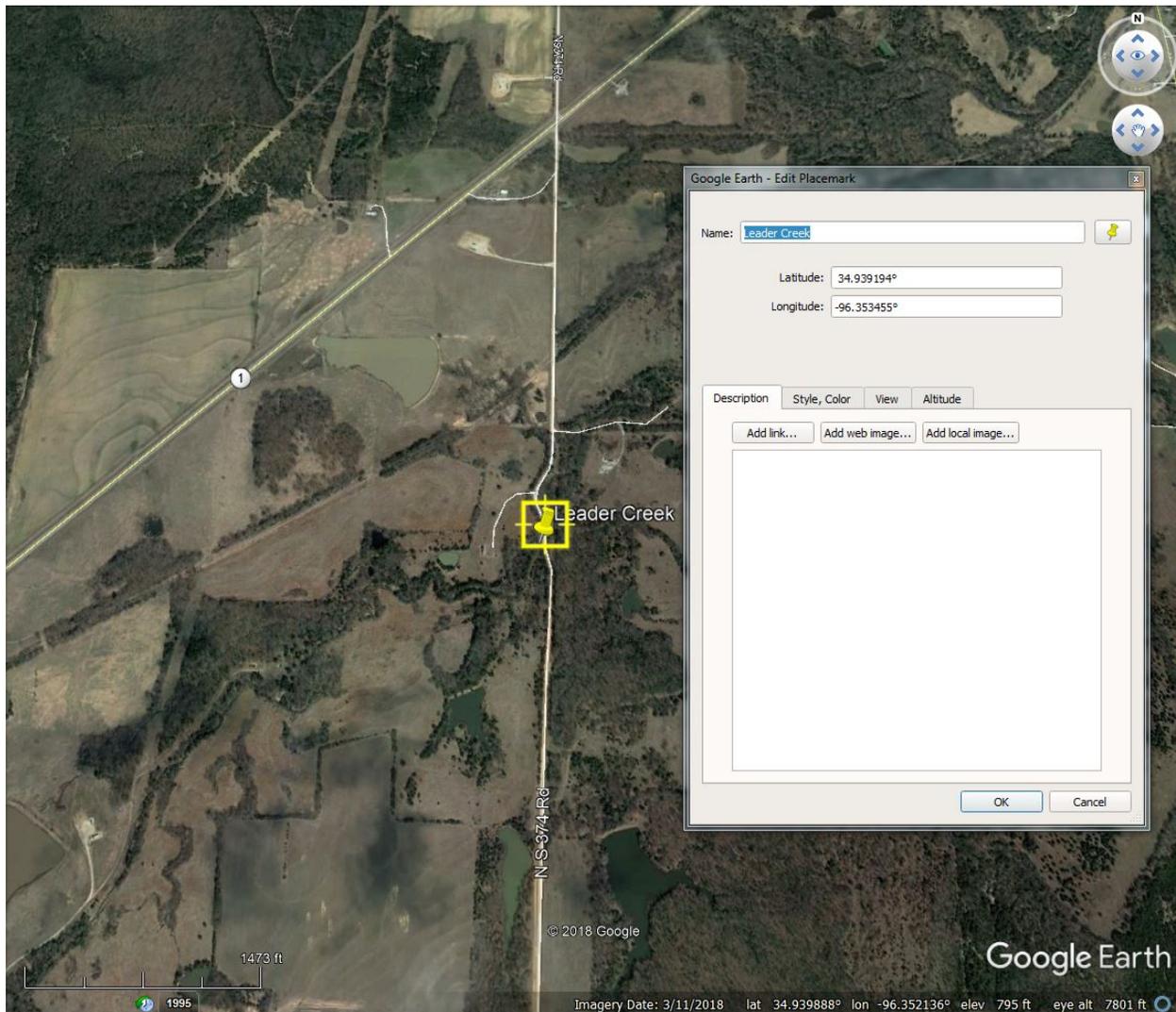


Figure 1. The location of the ABB trap was set in favorable ABB habitat (yellow pin). The trap has a functional radius of  $\frac{1}{2}$  mile so only one trap was needed to cover the Project Area.

Appendix A: Data Collection Form

American Burying Beetle *Nicrophorus americanus* Presence/Absence Live-trapping Survey Guidance

**AMERICAN BURYING BEETLE SURVEY DATA COLLECTION FORM**

Project Name: NS-374 over Leader Creek Project Description: bridge and approach construction

Action Agency/Proponent: C C Environmental

Time Checked<sup>1</sup>: 8:38 am Date Checked<sup>1</sup>: 24 Aug 18 Transect #: Leader 1 Survey Night: 1

Survey Company: S.E.A.R.C.H. Permittee: Jodie M. Burns Permittee#: TE 97824A-0

State: OK County: Hughes Legal Description: T5N R9E S4 Gen. Location: SW of Atwood, OK  
(township range section)

Decimal Degrees<sup>2</sup>: 34.9391940, -96.3534550 Type of Transect: above ground Trap size: 18(24) in.  
(circle one)

Vegetation Type: forest Primary Soil Type: Verdigris silt loam, 0 to 2 percent slopes Soil Moisture<sup>3</sup>: 2.3118

Daily Temp (°F): Max 92.79 Min 74.39 Period Temp<sup>4</sup>: Max 89.42 Min 79.52 Humidity%: Max 73 Min 60

Heavy Rainfall<sup>5</sup>? Yes  No  Wind > 10mph<sup>6</sup>? Yes  No  Trap Disturbed? Yes  No

Additional survey night required because of wind, temperature, rain or disturbance<sup>7</sup>? Yes  No

Trap	<i>americanus</i>	<i>orbicollis</i>	<i>tomentosus</i>	<i>pustulatus</i>	<i>marginatus</i>	<i>carolinus</i>	<i>sayi</i>	<i>Necrodes</i>	<i>Necrophila</i>	Other carrion
		111								
Totals	0	4	0	0	0	0	0	0	0	0

List each individual American burying beetle captured below and complete the appropriate columns.

ABB	Male	Female	Old <sup>9</sup>	New <sup>9</sup>	Age Unknown <sup>9</sup>	Recapture <sup>10</sup>	Newly Marked	Dead	Pronotum Width (mm)	Notes
1										
2										
3										
4										
5										
6										
7										
8										

Comments:

- Date and time refer to when trap is checked
- Check that legal description fits decimal degrees location. Lat/long MUST be in decimal degrees, NAD 83
- Soil moisture must be obtained by obtaining the TR-05 report from [http://www.mesonet.org/index.php/weather/daily\\_data\\_retrieval](http://www.mesonet.org/index.php/weather/daily_data_retrieval).
- Max/Min temp from 9 pm to 4 am prior to checking traps, must use data from [www.wunderground.com](http://www.wunderground.com) or [www.mesonet.org](http://www.mesonet.org)
- Rain from 9 pm to 4 am, must use data from [www.wunderground.com](http://www.wunderground.com) or [www.mesonet.org](http://www.mesonet.org). Heavy Rain is defined by the World Meteorological Organization (<http://severe.worldweather.org/raindoc.html>) as "Rainfall greater than or equal to 50 mm [1.9685 inches] in the past 24 hours."
- Wind exceeds 10 mph > than 20% of time between 9 pm to 4 am
- Additional trapping required if any metrics exceed the allowable thresholds.
- Determine total number of disturbed traps over all 5 survey nights. Any disturbance to 5-gallon traps requires an additional night of survey effort.
- OLD=breeding adult; NEW=newly enclosed adult; UNK=age cannot be determined.
- Recaptures refer to mark on beetles that have been previously marked.
- Newly marked males and females refers mark and age of beetle (e.g. R54[old]).

Appendix A: Data Collection Form

American Burying Beetle *Nicrophorus americanus* Presence/Absence Live-trapping Survey Guidance

**AMERICAN BURYING BEETLE SURVEY DATA COLLECTION FORM**

Project Name: NS-374 over Leader Creek Project Description: bridge and approach construction

Action Agency/Proponent: C C Environmental

Time Checked<sup>1</sup>: 7:53 am Date Checked<sup>1</sup>: 25 Aug 18 Transect #: Leader 1 Survey Night: 2

Survey Company: S.E.A.R.C.H. Permittee: Jodie M. Burns Permittee#: TE 97824A-0

State: OK County: Hughes Legal Description: T5N R9E S4 Gen. Location: SW of Atwood, OK  
(township range section)

Decimal Degrees<sup>2</sup>: 34.9391940 / -96.3534550 Type of Transect: above ground Trap size: 18/24 in.  
(circle one)

Vegetation Type: forest Primary Soil Type: Verdigris silt loam, 0 to 2 percent slopes Soil Moisture<sup>3</sup>: 2.4835

Daily Temp (°F): Max 93.02 Min 74.08 Period Temp<sup>4</sup>: Max 92.48 Min 81.86 Humidity%: Max 70 Min 50

Heavy Rainfall<sup>5</sup>? Yes  No  Wind > 10mph<sup>6</sup>? Yes  No  Trap Disturbed? Yes  No

Additional survey night required because of wind, temperature, rain or disturbance<sup>7</sup>? Yes  No

Trap	<i>americanus</i>	<i>orbicollis</i>	<i>tomentosus</i>	<i>pustulatus</i>	<i>marginatus</i>	<i>carolinus</i>	<i>sayi</i>	<i>Necrodes</i>	<i>Necrophila</i>	Other carrion
	11	1111						THH		
Totals	2	4	0	0	0	0	0	5	0	0

List each individual American burying beetle captured below and complete the appropriate columns.

ABB	Male	Female	Old <sup>9</sup>	New <sup>9</sup>	Age Unknown <sup>9</sup>	Recapture <sup>10</sup>	Newly Marked	Dead	Pronotum Width (mm)	Notes
1	X			X						
2		X		X						
3										
4										
5										
6										
7										
8										

Comments: Pulled trap.

- Date and time refer to when trap is checked
- Check that legal description fits decimal degrees location. Lat/long MUST be in decimal degrees, NAD 83
- Soil moisture must be obtained by obtaining the TR-05 report from [http://www.mesonet.org/index.php/weather/daily\\_data\\_retrieval](http://www.mesonet.org/index.php/weather/daily_data_retrieval).
- Max/Min temp from 9 pm to 4 am prior to checking traps, must use data from [www.wunderground.com](http://www.wunderground.com) or [www.mesonet.org](http://www.mesonet.org)
- Rain from 9 pm to 4 am, must use data from [www.wunderground.com](http://www.wunderground.com) or [www.mesonet.org](http://www.mesonet.org). **Heavy Rain** is defined by the World Meteorological Organization (<http://severe.worldweather.org/raindoc.html>) as "Rainfall greater than or equal to 50 mm [1.9685 inches] in the past 24 hours."
- Wind exceeds 10 mph > than 20% of time between 9 pm to 4 am
- Additional trapping required if any metrics exceed the allowable thresholds.
- Determine total number of disturbed traps over all 5 survey nights. Any disturbance to 5-gallon traps requires an additional night of survey effort.
- OLD=breeding adult; NEW=newly enclosed adult; UNK=age cannot be determined.
- Recaptures refer to mark on beetles that have been previously marked.
- Newly marked males and females refers mark and age of beetle (e.g. R54[old]).