SECOND ATOKA PIPELINE PROJECT

(A PUBLIC UTILITY WATER PIPELINE PROJECT)

HABITAT CONSERVATION PLAN

PREPARED FOR:

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Contents

Tables and Figures

List of Tables **Page**

List of Figures

Acronyms and Abbreviations

ABB	American Burying Beetle
AMM	Avoidance and Minimization Measure
BE	Biological Evaluation
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
CPA	Conservation Priority Area
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statemnent
ESA	Endangered Species Act
FR	Federal Register
HCP	Habitat Conservation Plan
ITP	Incidental Take Permit
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NWP	Nationwide Permit
OCWUT	Oklahoma City Water Utilities Trust
Oklahoma City	The City of Oklahoma City
Plan Area	Habitat Conservation Plan Area
ROW	Right of Way
RHA	Rivers and Harbors Act of 1899
SWPPP	Stormwater Pollution Prevention Plan
T&E	Threatened and Endangered
TWA	Temporary Work Area
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service

Chapter 1
Introduction

1.1 Overview

The City of Oklahoma City (Oklahoma City), a municipal corporation, and the Oklahoma City Water Utilities Trust (OCWUT), an Oklahoma public trust in which Oklahoma City is the sole beneficiary, focus on providing water for residents of central Oklahoma. Oklahoma City owns and operates OCWUT and leases and finances a 100-mile public utility water pipeline system connecting Atoka Reservoir in Atoka County to Lake Stanley Draper in Cleveland County, Oklahoma. This pipeline system is known as the Atoka pipeline and is one of three pipeline systems planned or in existence (the other two being the McGee Creek pipeline and proposed Kiamichi pipeline). These pipeline systems comprise Oklahoma City's Southeast Oklahoma Raw Water Supply System. Oklahoma City and OCWUT (the Applicants) are investing approximately $700 million in upgrades to the Southeast Oklahoma Raw Water Supply System in the coming years. The purpose of the upgrades is to establish the necessary infrastructure to meet the projected water needs of Oklahoma City and participating central Oklahoma communities through 2060.

Expansion of the existing Atoka pipeline is part of this program. The existing Atoka pipeline consists of a single 60-inch concrete water pipeline located within 100-foot wide easements along the 100-mile route. This pipeline also has ancillary facilities (e.g., pump stations, surge facilities) located along it. The proposed expansion project (Second Atoka Pipeline Project; the Project) adds a second pipeline and ancillary facilities alongside the existing pipeline. The Project will be constructed within the existing easements with only limited acquisition of land for required support facilities. The Project will take place in six Oklahoma counties: Atoka, Coal, Pontotoc, Pottawatomie, Seminole, and Cleveland (Figure 1).

For the purposes of this Habitat Conservation Plan (HCP), the proposed Project scope does not include the planned McGee Creek pipeline system upgrades nor the proposed Kiamichi pipeline. This is based upon the following rationale: (a) the proposed Kiamichi pipeline and McGee Creek expansion are slated too far in the future (beyond 2030), and are merely conceptual at present, and (b) the Second Atoka pipeline has independent utility from the other pipeline systems.

The purpose of the Project is to increase existing raw water transmission capacity and to deliver projected demands. The Project includes installation of 98.85 miles of new 72-inch steel pipe and will be located parallel to the existing 60-inch concrete pipeline. Construction and installation of the new pipeline will occur within the existing 100-foot easements. The Project will require construction of three new pump stations and some pump stations will require installation of intermediate surge protection facilities. The OCWUT manages the Southeast Oklahoma Raw Water Supply System to balance the water levels across the connected reservoirs (OCWUT 2018). The Project will not modify anticipated water levels at Atoka, McGee Creek, or Stanley Draper reservoirs. In short, the proposed pipeline will increase transmission capacity, but will not result in drastic alteration of lake levels in any of the reservoirs.

A large portion of the Project will be constructed and operated within the range and Conservation Priority Area (CPA) of the American burying beetle (*Nicrophorus americanus*; ABB). The ABB is listed as endangered under the Endangered Species Act (ESA) of 1973, as amended. Project construction is expected to result in permanent and temporary impacts as well as habitat fragmentation impacts in areas of occupied ABB habitat. Therefore, the Applicants seek authorization from the U.S. Fish and Wildlife Service (USFWS) for "take" of the species under the ESA. This HCP supports an application by Oklahoma City and OCWUT for take authorization under Section 10(a)(1)(B) of the ESA regarding impacts to the ABB resulting from the construction of the Project.

1.2 Scope of the HCP

1.2.1 Plan Area

Approximately 78.4 miles of the Project will occur in current ABB range. The HCP Plan Area (Plan Area) is the geographic area addressed by this HCP. The Plan Area encompasses the portion of the Project area where ABB impacts could potentially occur. The Plan Area is approximately 78.4 miles long by 100 feet wide and also includes additional areas for pump stations, ancillary facilities, contractor yards, and construction access roads (Figure 2).

For this HCP, the Permit Area (Permit Area) is synonymous with the Plan Area. This is the portion of the project where "take" may occur and take coverage is sought via an Incidental Take Permit (ITP). Ultimately, the Permit Area will include all areas of suitable habitat that are occupied by ABB based on the results of presence-absence surveys which will be completed during the ABB active season prior to the start of ground-disturbing activities in that part of the Permit Area. The Permit Area could potentially include all areas within the Plan Area with suitable ABB habitat; however, that scenario is very unlikely because ABB are endangered and relatively rare across the range. ABB surveys across the range in Oklahoma typically result in no more than approximately 20% positive surveys. Because processing of HCPs takes several months, the current Permit Area includes all areas within the Plan Area and current ABB range that support suitable ABB habitat (i.e., based on the assumption of 100% ABB occupancy). This will give the USFWS an estimate of maximum expected potential take which will be authorized under this HCP/ITP. However, it is important to note that the Permit Area will likely be greatly reduced based on the results of presence-absence surveys. The current Permit Area should be viewed as an estimate of maximum take for processing purposes only. The final Permit Area can only be determined following completion of surveys.

1.2.2 Covered Activities

Covered activities are those parts of the Project that may result in take and that take authorization via an ITP is being sought. Covered activities associated with the construction of the Project include the following:

- Site preparation of pipeline easement
- Construction of pipeline
- Construction of pump stations and other ancillary facilities
- Use of temporary work areas

- Construction of pipe stockpile sites and contractor yards
- Removal of surge facilities
- Construction and maintenance of access roads
- Post-construction restoration activities
- Hydrostatic testing of installed pipeline

Chapter 2 provides a detailed description of the covered activities.

1.2.3 Covered Species

The Applicants are requesting incidental take coverage of ABB for activities associated with the construction of the Project. The ABB is the only species covered under this HCP; it is described further in Chapter 3, *Environmental Setting*, and Appendix A, *American Burying Beetle Species Account.*

The ABB was federally listed as endangered in 1989 (54 *Federal Register* [FR] 29652). The ABB Recovery Plan was finalized in 1991 (U.S. Fish and Wildlife Service 1991) and a 5-year review was completed in 2008 (U.S. Fish and Wildlife Service 2008). The most recent review determined the ABB remains endangered throughout its current range due to ongoing threats to known populations and the failure to discover or establish viable populations in the remaining Recovery Areas (U.S. Fish and Wildlife Service 2008).

The Applicants considered coverage for other federally-listed species that occur or have the potential to occur in the Plan Area (Table 1). After further research, the Applicants anticipate that they will be able to avoid impacts to these species and therefore other federally-listed species are not expected to be adversely affected by the Project. This evaluation is documented in the Biological Evaluation (BE) prepared for the Project, included as Appendix B to this HCP. Should species have the potential to be affected by future activities, these impacts will be addressed in separate ESA compliance such as the ESA Section 7 consultation process or, in the absence of a federal nexus, a separate HCP.

Table 1: Other Federally Listed Threatened and Endangered Species for the Plan Area

Species	Federal Status
BIRDS	
Interior Least Tern (*Sterna antillarum*)	E
Piping Plover (*Charadrius melodus*)	T
Red Knot (*Calidris canutus rufa*)	T
Whooping Crane (*Grus americana*)	E
MAMMALS	
Northern Long-Eared Bat (*Myotis septentrionalis*)	T
FISHES	

Species	Federal Status
Arkansas River Shiner (*Notropis girardi*)	T
MUSSELS	
Ouachita Rock Pocketbook (*Arcidens wheeleri*)	E
T = Threatened, E = Endangered	

Arkansas River Shiner Critical Habitat

Designated critical habitat for the Arkansas River shiner is present in the Project right of way (ROW). This area is located along the South Canadian River in Seminole and Pontotoc counties. Impacts to designated critical habitat will be avoided based on USFWS protocols for river crossings in these situations. The Applicants will avoid impacts by (1) not clearing or otherwise disturbing riparian habitat within the 300-foot minimum buffer, (2) constructing the new pipeline beneath the river by using the micro tunneling technique, (3) planning construction to avoid impacts to the main channel of the Canadian River, and (4) by using enhanced best management practices (BMPs) for stormwater management in any area with the potential for allowing sediment to be transported into designated critical habitat. The Applicants believe that these measures will meet regulatory requirements for these areas.

Please see the attached BE (Appendix B) for further details regarding threatened and endangered (T&E) species impacts and effects determinations.

1.2.4 Permit Duration

The Applicants are seeking an 8-year ITP from the USFWS. The permit term of 8 years was selected because it covers the expected timeline for construction of the pipeline with additional time to restore temporary habitat impacts. For typical maintenance activities conducted after the pipeline is in operation, potential ABB impacts will be addressed according to standard protocols in place at the time of the impact. Appropriate mitigation, as needed, will be addressed at that time. For cases of emergency repairs where surveys are not practical, impacts will be mitigated appropriately. Take of ABB associated with operation and maintenance of the pipeline is not anticipated and therefore take coverage for such activities is not requested or required at this time.

1.3 Regulatory Setting

1.3.1 Federal Endangered Species Act

Section 9 of the ESA prohibits the take of any endangered or threatened species of fish or wildlife listed under the ESA. Under the ESA, the term *take* means to harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect species listed as endangered or threatened or to attempt to engage in any

such conduct. Under Section 10 of the ESA, the USFWS may authorize, under certain terms and conditions, any taking otherwise prohibited by Section 9(a)(1)(B) if such taking is incidental to, and not the purpose of, an otherwise lawful activity. This Section 10 take authorization is known as an ITP.

In the ESA's regulatory definition of take, *harm* means an act that actually kills or injures wildlife. This may include significant habitat modification or degradation that, as a result, actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 Code of Federal Regulations [CFR] 17.3).

To receive an ITP, a nonfederal landowner or land manager must develop, fund, and implement a USFWS-approved HCP (50 CFR 402.14(i)(1)(i)). The USFWS may issue an ITP if it finds that the criteria of ESA Section 10(a)(2)(B), 50 CFR 17.22(b)(2), and 50 CFR 17.32(b)(2) are met.

Section 7

Section 7 of the ESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of habitat critical to such species' survival. To ensure that its actions do not result in jeopardy to listed species or adverse modification of designated critical habitat, each federal agency must consult with the USFWS regarding federal agency actions.

Although this HCP constitutes a nonfederal project and will be permitted under Section 10 of the ESA, the issuance of a permit by the USFWS is considered a federal action. Therefore, prior to approval of the HCP, the USFWS must undertake an internal Section 7 consultation (ESA Section 7(a)(2) and 50 CFR 402.10–402.16). The USFWS will examine the HCP to ensure that it accurately documents the expected impacts of its federal action (i.e., issuance of a take permit) as well as the mitigation proposed to compensate for those impacts in the Permit Area. Elements specific to the Section 7 process include analysis of impacts on designated critical habitat, analysis of impacts on listed plant species, and analysis of direct, indirect, and cumulative impacts on listed species. These components are included in this HCP to meet the requirements of Section 7.

Section 10

In cases where there is no federal nexus (on federal land, funded, or authorized by a federal agency), private landowners, corporations, state agencies, local agencies, and other nonfederal entities may obtain authorization for incidental take of listed species under ESA Section 10(a)(1)(B). Incidental take is take "that is incidental to, but not the purpose of, otherwise lawful activities" (50 CFR 17.3). Impacts to plants do not fall under the definition of "take," but Section 9 of the ESA prohibits damage or destruction of plants listed as endangered on federal property or on non-federal lands when doing so is in knowing violation of any State law or regulation or in the course of any violation of a State criminal trespass law.

To receive an ITP, the nonfederal entity is required under Section 10(a)(2)(A) to prepare an HCP that identifies the following:

- Impacts likely to result from the proposed taking of the species for which permit coverage is requested
- Measures that will be implemented to minimize and mitigate impacts
- Funding that will be made available to undertake such measures
- Alternative actions considered that would not result in take
- Additional measures the USFWS may require as necessary or appropriate for purposes of the plan

If the USFWS finds that the HCP and related permit application meet the following statutory criteria of Section 10(a)(2)(B),the USFWS shall issue the permit.

- The taking will be incidental.
- The impacts of incidental take will be minimized and mitigated to the maximum extent practicable.
- Adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- The applicants met additional measures, if any, that the USFWS requires as being necessary or appropriate.
- The USFWS has received assurances, as may be required, that the HCP will be implemented.

The Applicants will submit this HCP with an application for the ITP to the USFWS. The USFWS will review the HCP to ensure that it meets the issuance criteria of Section 10(a)(2)(B) and make a decision on the ITP application.

1.3.2 National Environmental Policy Act

The National Environmental Policy Act (NEPA) is one of the primary federal laws governing the environmental protection process. It is a decision-making requirement that applies to proposals for federal actions. The Council on Environmental Quality regulations define major federal actions as those actions with "effects that may be major and which are potentially subject to federal control and responsibility," including "projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies" (40 CFR 1508.18). NEPA states that any federal agency undertaking a major federal action likely to affect the human environment must prepare an environmental assessment (EA). If any impacts on the human environment are found to be significant, the federal agency must then prepare an environmental impact statement (EIS). Project proponents must disclose in these documents whether their proposed action will adversely affect the human or natural environment. NEPA's requirements are primarily procedural rather than substantive in that NEPA requires disclosure of environmental effects and mitigation possibilities but includes no requirement to mitigate. The Council on Environmental Quality regulations allow an agency to establish "a category of actions which do not individually or cumulatively have a significant

effect on the human environment…and for which, therefore, neither an environmental assessment nor an environmental impact statement is required" (40 CFR 1508.4).

Issuance of an ITP under Section 10(a)(2)(B) of the ESA is a federal action subject to NEPA compliance. Although ESA and NEPA requirements overlap considerably, the scope of NEPA goes beyond that of the ESA by considering the impacts of a federal action not only on fish and wildlife resources, but also on water quality, air quality, and cultural resources. The purpose of these procedures is to ensure that the agency has before it the best possible information to make an "intelligent, optimally beneficial decision" and that the public is fully apprised of any environmental risks that may be associated with the preferred action. In compliance with NEPA, the USFWS has prepared an EA to evaluate and disclose adverse impacts to the human or natural environment resulting from the USFWS action of issuing an ITP.

1.3.3 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S. Code [USC] 470 et seq.), requires federal agencies to take into account the effects of their actions proposed on properties eligible for inclusion in the National Register of Historic Places (NRHP). *Properties* are defined as cultural resources, which include prehistoric and historic sites, buildings, and structures that are listed on or eligible for listing on the NRHP. An *undertaking* is defined as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency. The issuance of an ITP is an undertaking subject to Section 106 of the NHPA. The USFWS has determined that the area of potential effects for the HCP is that area where covered activities may result in take of species. The Applicants have evaluated the area of potential effects for the presence of prehistoric and historic sites, buildings, and structures that are listed on or eligible for listing on the NRHP. This evaluation is documented in the Cultural Resources Report prepared for the Project. The NHPA and the potential effects of the conservation program on resources subject to the NHPA are discussed in detail in the NEPA document associated with this HCP.

1.3.4 Section 404 of the Clean Water Act

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged or fill material into jurisdictional waters of the U.S., including wetlands. A U.S. Army Corps of Engineers' (Corps) Section 404 permit is required for impacts to jurisdictional waters. The Applicants will design and construct the project to avoid or minimize impacts to Section 404 waters. Any unavoidable impacts will be permitted and mitigated according to the provisions of an appropriate Corps permit. Pre-project consultation with the Corps has been initiated. The Applicants are taking a proactive approach to ensure that impacts to jurisdictional waters are avoided or minimized, with the goal of limiting impacts to those allowable under the Nationwide Permit program (NWP). Pre-project discussions between the Applicants and the Corps have indicated that this is an obtainable goal. A Section 404 delineation for the project area has been completed and will be used to facilitate minimization and avoidance during the planning and design process. This delineation is included as Appendix C.

1.3.5 Section 10 of the Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 (RHA) prohibits the obstruction or alteration of certain navigable waters of the U.S. Section 10 waters are usually parts of larger lakes or impoundments, and specific reaches of larger rivers, bays, and coastal waterways. The Project crosses one Section 10 water: the South Canadian River. Projects crossing or impacting Section 10 waters require an RHA permit. The Applicants will coordinate with the Corps to ensure the design of the crossing is compliant with Corps regulations for Section 10 waters and seek project approval from the Corps via an RHA Section 10 permit.

1.3.6 Oklahoma Wildlife Conservation Code

Oklahoma Department of Wildlife Conservation is the state agency responsible for managing wildlife and fish in the state of Oklahoma. There are no state-endangered or state-threatened species in the Plan Area.

1.3.7 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 USC 668) prohibits taking, possession, and commerce of bald eagles and golden eagles or any part, nest, or eggs without a permit issued by the Secretary of the Interior. "Take" under BGEPA is defined as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb." "Disturb" is defined in 50 CFR 22.3 as the act of agitating or bothering a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, the following: (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or shelter behavior. Furthermore, "disturb" also includes impacts that result from human-induced alterations occurring near a nest site, which was used previously by eagles, during a time when eagles are absent from the area, and if, when the eagle returns, these alterations agitate or bother an eagle to the extent that it interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

The golden eagle was never listed as threatened or endangered under the ESA, and on August 8, 2007, the USFWS removed the bald eagle from the list of Threatened and Endangered Wildlife due to the species' recovery (72 FR 37345). As a result, neither species is protected from "take" under the ESA, but the BGEPA provides protection for bald and golden eagles. The USFWS concluded that a mechanism should be available to authorize take of bald and golden eagles pursuant to the BGEPA (74 FR 46836). On November 10, 2009, the USFWS authorized limited take of bald and golden eagles under the BGEPA for cases where the take to be authorized is associated with otherwise lawful activities (74 FR 46836). The Applicants do not intend to apply for authorization from the USFWS for the incidental take of bald or golden eagles pursuant to the BGEPA because such take is not anticipated to result from the construction and maintenance of the Project. Please see the BE provided in Appendix B for further details.

1.3.8 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 USC 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. For further details relating to MBTA, please see the BE provided in Appendix B.

1.4 Document Organization

This HCP and supporting information is presented in the chapters listed below.

- Chapter 1, *Introduction*, discusses the background, purpose, and objectives of the plan, summarizes plan framework, and reviews the regulatory setting.
- Chapter 2, *Covered Activities*, describes the activities covered under the plan.
- Chapter 3, *Environmental Setting*, discusses the existing conditions for ABB in the Plan Area, including species description, life history, habitat, and threats.
- Chapter 4, *Conservation Program*, includes the effects analysis, avoidance and minimization measures, mitigation, and monitoring for the plan.
- Chapter 5, *Plan Implementation, Assurances, and Cost and Funding*, describes implementation responsibilities, changed and unforeseen circumstances associated with plan implementation, funding assurances, revision and amendment processes, and alternatives to take of ABB.

Chapter 2
Covered Activities

2.1 Introduction

Activities occurring within the Plan Area with the potential to result in impacts to the ABB are covered under this plan. Covered activities will receive take authorization under the plan's ITP. The impacts from covered activities will be minimized to the maximum extent practicable through application of avoidance and minimization measures. Unavoidable impacts will be mitigated, as described in Chapter 4, *Conservation Program*.

2.2 Covered Activities

The total Project is approximately 98.85 miles long; the portion within the current ABB range is approximately 78.4 miles long. Therefore, the Plan Area will include the 100-foot easements within ABB range as well as additional areas for construction of permanent facilities and additional areas needed to support construction activities (also within ABB range). Construction and support activities within the Plan Area are covered under this HCP (Figures 1 and 2).

Activities that will occur within the Plan Area with the potential to affect ABB include easement site preparation, pipeline construction, construction of pump stations and ancillary facilities, construction of temporary work areas (TWAs), construction of pipe stockpile sites and contractor yards, removal of surge facilities, construction and maintenance of access roads to facilitate construction, and associated post-construction restoration activities. These activities are described in further detail in the following sections. These descriptions are based on standard Oklahoma City and OCWUT procedures. The procedures employed may vary slightly from standard procedures; however, such activities are expected to have a level of impact similar to or lower than the covered activities that are presented below and further evaluated in Chapter 4, *Conservation Program.*

2.2.1 Easement Site Preparation

The easement portion of the Plan Area is approximately 78.4 miles long by 100 feet wide. Easement site preparation activities would clear or modify vegetation and disturb soil within the Plan Area to install the pipeline and are covered under this plan.

The current easement contains a mixture of open grass land and shrubby or early successional forested habitat. The Applicants will clear the easement of woody vegetation prior to construction. Easement clearing would occur either mechanically or manually and would typically involve cutting and removing woody-stemmed vegetation (clearing) followed by stump removal (grubbing).

For the purposes of this plan, the Applicants assume that the entire Plan Area (992.14 acres) could be subject to activities that would disturb vegetation and soil. However, only the portion of the Plan Area supporting suitable ABB habitat (777.15 acres) could potentially require take coverage via the HCP/ITP. Section 4.3 (below) and the ABB Habitat Assessment included in Appendix B provide additional information on how the Plan Area and potential ABB habitat areas were quantified.

2.2.2 Pipeline Construction

Standard pipeline construction procedures for this Project consist of six basic steps: (1) trenching, (2) placement of pipe joints in the trench, (3) welding the pipe joints, (4) hydrostatic testing, (5) backfilling the trench/covering pipe, and (6) final clean up.

- Trenching – Excavation of the trench where pipe will be buried will be completed using heavy equipment such as tracked excavators and bull dozers. Topsoil will be reserved and placed to one side of the easement. Upon completion, the top of the pipe is to be at a minimum of five feet below ground surface and six feet below the 100-year scour depth at stream crossings.
- Placement of pipe segments in trench – Pipe segments will be trucked into the Project area and off loaded directly into the trench or near the place they will be placed into the trench.
- Welding pipe joints – Once pipe is placed into the trench, welders will work inside the pipe to weld the joints together.
- Hydrostatic testing – Once the pipe is welded, it will be tested to ensure that welded joints are watertight. Water for hydrostatic testing will be obtained from OCWUT reservoirs and transported to testing sites via the existing pipeline. After hydrostatic testing is completed, water will be discharged into a temporary retention basin with appropriate BMPs employed to reduce or eliminate sedimentation of receiving waters or erosion of upland areas.
- Backfilling and covering pipe – Pipe will be covered using soil. Reserved topsoil will be added to the uppermost portion of the fill.
- Final clean up – After the pipe is buried, the easement will be graded and seeded in order to restore habitat.

In addition to standard pipeline construction methods, special construction techniques would be used where warranted by site-specific conditions. For example, the pipeline will cross the Canadian River. In order to avoid impacts to aquatic and aquatic-dependent threatened and endangered species, the new pipeline will pass beneath the channel using a technique called micro tunneling (horizontal directional drilling is not possible at this time for pipe with a 72-inch diameter). This approach involves tunneling under the river and pulling pipe through the tunnel to complete the crossing.

2.2.3 Construction of Pump Stations and Ancillary Facilities

In addition to the pipeline, the Applicants propose to install and operate aboveground facilities in the Plan Area. These facilities consist of three pump stations and three intermediate surge facilities (facilities located along the pipeline and designed to alleviate surges in water pressure). All of these facilities would be located within the permanent easement or on Applicants-owned property. Additional off-site facilities, such as power lines required for the pump stations and remotely operated valves, would be installed and operated by local power providers, not by the Applicants. The location and area of disturbance associated with such off-site facilities is not known at this time and is not included in the take estimate of this HCP. Any potential ABB impacts associated with such facilities will be addressed by the power provider(s) according to standard protocols in place at the time of the impact. Appropriate mitigation, as needed, will be addressed at that time.

Take of the ABB resulting from construction of pump stations in occupied habitat will be addressed by this HCP. Other negative impacts from construction of pump stations will be temporary and restricted to the construction phase. During construction of these facilities, impacts to occupied ABB habitat will be minimized to the extent practicable. If construction must occur in occupied ABB habitat, these impacts will be mitigated. BMPs for stormwater management and a state-approved Stormwater Pollution Prevention Plan (SWPPP) will be implemented to avoid impacts to water quality. After construction is completed, impacts to various species and the surrounding environment will be minimal. Although pumps to be used are large, they are powered by electricity and do not produce excessive noise. No run-off into receiving streams is anticipated. Other activities at pump stations include personnel engaged in operation and maintenance work, movement of vehicles into and around the facility, and similar levels of disturbance. Exterior lighting at these facilities will be down-shielded to avoid interfering with ABB behavior at night.

2.2.4 Temporary Work Areas

In addition to the typical construction easement, the Applicants have identified types of additional TWAs that would potentially be required. These include areas requiring special construction techniques (e.g., river, wetland, and road/rail crossings, tunnel entry and exit points, steep slopes, and rocky areas), construction staging areas, and access routes not within the existing easement. Impacts to occupied ABB habitat in TWAs will be minimized to the extent practicable. If construction activities must occur in occupied ABB habitat, these impacts will be mitigated. Total project mitigation requirements, including mitigation for impacts within TWAs, are not expected to exceed the maximum required mitigation estimate discussed in Section 4.3.3.

2.2.5 Construction of Pipe Stockpile Sites and Contractor Yards

Extra storage areas for Project materials will be required outside the construction easement. These areas include contractor yards. Where practical, the Applicants will use existing commercial/industrial sites or sites that previously were used for construction and currently do not support ABB habitat. Similarly, existing public or private roads would be used to access each yard when possible. Contractor yards would be used on a temporary basis and would be restored, as appropriate, upon completion of construction. A land survey of contractor yards will be completed prior to construction. The boundaries of these sites will be clearly marked to ensure that inadvertent use of additional areas does not occur. Land survey information will be included in the annual report.

If possible, contractor yards will either (1) utilize existing facilities that do not support ABB habitat or (2) construct said facilities in areas that do not support ABB habitat. Under either scenario, take coverage will not be required or requested.

If said sites must be constructed in suitable and occupied habitat, these impacts will be mitigated, and the areas restored to suitable habitat following construction.

2.2.6 Construction and Maintenance of Access Roads

The Project would use public and existing private roads to provide access to most of the construction easement. Paved roads are not likely to require improvement or maintenance prior to or during construction. Gravel and/or dirt roads may require maintenance during the construction period due

to high use or to expand/widen these facilities. Road improvements such as grading and gravelling would generally be restricted to the existing road footprint. Widening of roads may also be required in some areas. Private roads and any new temporary access roads would be used and maintained only with permission of the landowner or land management agency. If it is necessary to expand or widen roads into suitable and occupied ABB habitat, these impacts will be mitigated. If feasible, affected areas will be restored to suitable habitat following Project construction.

Chapter 3
Environmental Setting

3.1 Introduction

This chapter presents the environmental setting in the Plan Area, as it relates to the ABB. It describes the baseline conditions on which the effects analysis and conservation program (Chapter 4, *Conservation Program*) are based. This chapter describes the broader environmental setting of the Plan Area and the existing land use and vegetation communities within the Plan Area as they relate to ABB. For a detailed description of the ABB's life history traits, range, habitat, and threats to the species' persistence, refer to Appendix A, *Species Account*.

3.2 Environmental Setting

The Plan Area is located in the Northern Cross Timbers subset of the Cross Timbers ecoregion (29a), the Fourche Mountains subset of the Ouachita Mountains ecoregion (36d), and the Lower Canadian Hills subset of the Arkansas Valley ecoregion (37e) of Oklahoma (Figure 3).

The Northern Cross Timbers are comprised of hills, cuestas (areas where a harder sedimentary rock overlies a softer layer, the whole being tilted somewhat from the horizontal), and ridges that are naturally covered by a mosaic of oak savanna, scrubby oak forest, eastern red cedar (*Juniperus virginiana*), and tall grass prairie. Post oak (*Quercus stellata*), blackjack oak (*Q. marilandica*), and native understory grasses occur on porous, course-textured soils. Tall grass prairie naturally occurs on fine-textured soils (Woods et al. 2005).

The Fourche Mountains are comprised of east to west trending, folding, sandstone-capped ridges and intervening shale valleys. Natural vegetation is oak-hickory-pine forest. Forests on steep, north-facing slopes are more mesic than on southern aspects. Steep, south-facing slopes with shallow, moisture deficient soils support shrubs and rocky glades (Woods et al. 2005).

The Lower Canadian Hills act as a transition between the drier Cross Timbers Ecoregion to the west and moister parts of the Arkansas Valley Ecoregion to the east. The Lower Canadian Hills are underlain by Pennsylvanian-age shale, sandstone, and coal. Native vegetation is a mixture of oak woodland, tall grass prairie, oak-hickory forest, and oak-hickory-pine forest (Woods et al. 2005).

The Plan Area is located within Atoka, Coal, Pontotoc, Pottawatomie, Seminole, and Cleveland counties, Oklahoma, and includes the existing 100-foot pipeline easement and areas for ancillary facilities located within the current ABB range. Additionally, the Plan Area includes pipeline and contractor stockpile yards and access roads within the ABB range. The Plan Area is within a mostly rural area with relatively low human population density and development. Developed areas include small communities, scattered residences, oil and gas fields, and agricultural lands. Vegetative communities in the Plan Area include maintained residential/commercial lawns, agricultural fields, improved grass pastures/hayfields, mixed grass pastures/hayfields, native grass pastures, native prairie, riparian forest, upland forests, and emergent, scrub-shrub, and forested wetlands. The Plan

Area crosses four (4) major watersheds: Muddy Boggy (11140103), Little River (11090203), Lower-Canadian-Walnut (11090202), and Clear Boggy Watersheds (11140104) (Figure 4).

Approximately 777.15 acres of the Plan Area is located within suitable habitat *and* in the current ABB range. Approximately 451.72 acres of this is within the ABB CPA. Section 4.3 (below) and the ABB habitat assessment included in Appendix B provide additional information on how the Plan Area and potential ABB habitat areas were quantified.

Land use and land cover in the Plan Area can be described as "patchy" and comprised of agricultural lands, improved grass pastures, small areas of native prairie, savannas, small woodlots, riparian forests, and forested uplands. The entire area features scattered residences, small urban areas, and numerous roads, pipelines, and transmission line easements. ABB habitat quality within these counties varies considerably. Similarly, ABB population density varies spatially and temporally within the Plan Area.

Chapter 4
Conservation Program

4.1 Introduction

This chapter contains the following elements:

- Effects analysis
- Conservation measures, including biological goals and objectives, avoidance and minimization measures (AMMs), and mitigation measures
- Monitoring

Effects are analyzed based on the covered activities described in Chapter 2, *Covered Activities*. Adverse effects will be reduced or eliminated to the degree practicable through the implementation of AMMs, described in Section 4.3.2, *Avoidance and Minimization Measures*. Unavoidable adverse effects on ABB and ABB habitat will be fully offset through mitigation (consistent with other ABB HCPs, acres of occupied ABB habitat impacted by ground disturbance will be used as a surrogate for estimating take). Together, AMMs and mitigation will achieve the biological goals and objectives of the plan. Monitoring helps to ensure that AMMs and mitigation are successfully implemented and that the biological goals and objectives are achieved.

4.2 Effects of Covered Activities

This plan quantifies the temporary, permanent, and cover change impacts on ABB from covered activities by using ABB habitat as the surrogate for impacts on individuals of the species. Acres of habitat impacted is used as a surrogate to estimate take because it is difficult or impossible to quantify the number of ABBs that will be taken. This approach is consistent with other approved ABB HCPs, regulations (50 CFR 402.14(i)(1)(i)), and federal case law (U.S. Fish and Wildlife Service 2014; Enercon Services, Inc. 2012).

The causal link between using acres of habitat as a surrogate for take of individual ABBs is the fact that ABBs spend long periods of time relatively immobile and buried a few to several inches below the soil surface during the dormant and breeding seasons and the Applicant's covered activities include ground disturbance. Although ABBs are habitat generalists, they do require suitable soils and vegetation layers. The Applicant's covered activities include ground disturbance and movement of soil by construction equipment during activities, such as clearing, grading, and excavation. These activities may injure or crush ABBs (adults, larvae, and/or eggs during the active season and adults during the inactive season) or separate adult ABBs from their larvae or eggs. Soil disturbances that expose the brood chamber or overwintering adult ABBs may also result in mortality caused by desiccation, heat stress, or predation.

Take of the ABB is difficult to quantify because (1) individuals of the species are small in size, making them difficult to locate, which makes encountering dead or injured individuals very unlikely; (2) ABB local fluctuations make it difficult to quantify ABB populations; (3) ABBs spend a substantial portion

of their lifespan underground; and (4) the species is primarily active at night. These factors make it difficult to locate injured or dead individuals to quantify the direct effects from mortality or harm to ABB. Furthermore, there is no reliable means to estimate ABB density within the Plan Area with which to compare estimates of take of individuals from covered activities. For these reasons, this plan quantifies the temporary, permanent, and cover change impacts on ABB through analysis of the effects of the covered activities on ABB habitat.

Direct effects are impacts that are caused by and occur in the same time and place as covered activities. Direct impacts on ABB are anticipated to occur from covered activities in the form of mortality of or injury to adults, larvae, or eggs from crushing, collision, or exposure; degradation or loss of breeding, feeding, or sheltering habitat; and human activities that disrupt ABB behavior or increase energetic demands. As described above, this HCP uses habitat as the surrogate to impacts on the ABB; therefore, the following sections focus on quantifying the direct impacts on ABB habitat that will result from the covered activities.

The USFWS defines three types of habitat impacts for ABB (U.S. Fish and Wildlife Service 2016):

- ***Temporary impacts*** are those that affect ABB habitat for 5 years or less (areas affected by the Project are restored to a condition that is suitable for ABB use and is the same successional stage as pre-disturbance (e.g. grassland to grassland) within 5 years of the original impact).
- ***Permanent impacts*** are those that eliminate ABB habitat, as well as any impact on habitat that takes more than 5 years to re-establish as suitable for ABB use.
- ***Permanent cover change impacts*** are defined as impacts that change the successional stage of an area to a different stage (e.g., forest or shrubland to grassland), resulting in habitat that is possibly less preferable for ABB use or used in a different way by ABB.

Construction of the pipeline and facilities will result in direct effects on ABB and its habitat because it involves significant ground disturbance, movement of heavy equipment, and human activity. Mortality of ABB adults, larvae, and eggs will likely result from Covered Activities in occupied habitat. While most of the habitat impacts will be temporary, some impacts will be permanent (i.e., construction of above-ground facilities). Other effects will relate to conversion of forested habitat to open habitat in certain areas where woody vegetation has encroached into the easement.

4.2.1 Mortality of Adults, Larvae, and Eggs

Death of ABBs at various life history stages may result from covered activities. During the ABB active period (late May through late September), adults which are not reproducing typically spend daylight hours buried in soils or leaf litter near the surface. Adults become active during hours of darkness and seek sources of carrion for feeding and potential reproductive sites. Sources of carrion can include birds, small mammals, and snakes (Bedick et al. 2004). When reproducing, ABB pairs bury a carcass and excavate a brood chamber several inches below the soil surface. The brood chamber houses eggs, carrion source, and developing larvae. The carrion provides a food source to nourish ABB offspring. Because a large part of the ABB's lifecycle takes place underground, areas suitable for burying (e.g., loose, sandy loam soils) are generally preferred over other soil types. After adult ABBs emerge from the brood chamber, they disperse and feed on carrion prior to overwintering. Because

of their unique life history, ABBs spend a large amount of time relatively immobile and buried a few to several inches below the soil surface.

4.2.2 Crushing or Exposure of Individuals or Brood Chambers by Construction Equipment

Although ABBs are robust beetles, they are susceptible to death or injury by crushing at all stages of their life cycle. This is particularly likely when vehicles and heavy equipment are operating in areas inhabited by reproducing or sheltering ABBs. Adults that are not reproducing and are sheltering in soils or leaf litter during the day may be killed or injured by crushing. Clearing of easement, excavation of trenches and similar ground-disturbing activities may destroy brood chambers along with adults, eggs, and larvae contained within by soil compaction, crushing, and/or exposure. Mortality for ABBs in all of these life stages is possible, although quantification of take would be almost impossible. Similarly, uncovering or digging into or near brood chambers may result in exposure of the brood chamber and/or ABBs inside resulting in mortality caused by desiccation, heat stress, and/or predation by various scavengers and small mammals.

4.2.3 Fuel Spills and Fire

Heavy equipment used to construct the Project will require refueling at various times. Although unlikely, death of ABBs could result from fuel spills. Fuels such as diesel and gasoline could result in mortality of ABBs if the spill were to occur at a brood site or where adult (non-reproducing) ABBs were sheltering or overwintering. Fuel spills are not a covered activity under this permit. However, take due to spill response activities within the Permit Area would be covered. Construction BMPs will be used to minimize or avoid this hazard; however, the possibility of mortality resulting from fuel spills cannot be eliminated from consideration.

In dry conditions, equipment could increase the risk of ignition of fire. Wildfire may cause loss of breeding, feeding, and sheltering habitat, alter the small mammal community (for a period of time) to a less optimal size class for optimal ABB reproduction (Kirchner et al. 2011), and injury or mortality for individuals exposed to fire.

4.2.4 Behavior Disruption

ABBs may also be adversely affected by disruptions of their normal behavior resulting from increased human activity, vehicle traffic, noise, and use of artificial lighting for work taking place at night. Similarly, reductions in soil moisture and increases in soil temperature resulting from clearing and grading may cause ABBs to alter their behavior patterns to avoid these areas. The effects of such disruption are not well-understood.

4.2.5 Increased Human Activity, Vehicle Traffic, and Noise

Although the behavior of ABBs is not completely understood, it is prudent to acknowledge that they may be (to some degree) adversely affected by intense human activity, elevated levels of vehicle traffic, and excessive noise. It is difficult to predict if this effect would be negative or positive. It is possible that increased human activity could lead to a decrease in direct mortality because ABBs may abandon the area. An alternative viewpoint would be that human activity would result in negative effects because displacement of individual ABBs from the Plan Area may result in an increase in

interspecific competition for resources as ABBs attempt to utilize new areas. Such displacement could also possibly lead to an increase in exposure to avian and mammalian predators. Such effects are difficult to quantify and describe. However, effects from these activities are expected to be minor and for a short duration. These disruptions should be considered temporary effects during the construction phase and would be unlikely to have any long-term negative effect on the species.

4.2.6 Disruption of Behavioral Patterns Caused by Artificial Lighting

ABBs, like many insects, are attracted to artificial lights (Bedick et al. 1999). This attraction may disrupt their normal feeding and reproductive behavior. In some instances, Project construction may be conducted at night. Construction at night would require supplemental lighting as well as use of vehicle mounted lights. Such uses of artificial light may result in temporary adverse impacts to the species by disrupting behavior. Disruption in behavior could expose the species to increased mortality by predation.

4.2.7 Decrease in Soil Moisture and Increase in Soil Temperature

Clearing of vegetation and grading the easement exposes soils to sun and wind and may result in decreased soil moisture and elevated soil temperature. ABBs are known to be sensitive to changes in soil moisture and high temperature (Bedick et al. 2006). ABBs apparently seek out areas with relatively higher soil moisture and may cope with elevated air temperatures by remaining inactive and buried in soil. In some situations, mortality of ABBs could be caused by extreme reduction of soil moisture and elevated temperature in areas directly above brooding or overwintering areas. If sheltering areas are subjected to these conditions, ABB are likely to simply relocate to areas with better conditions. Since exposing soils causes changes to soil temperature and moisture level, grading and clearing of easements may result in mortality or temporary behavioral changes which may directly or indirectly adversely affect the ABB.

4.3 Indirect Effects

Indirect effects are impacts that are reasonably certain to occur and are caused by covered activities but occur later in time. Indirect effects may include introduction of non-native plant species via construction equipment, which could lead to ABB habitat loss or degradation. Indirect effects may also include inadvertent burying of carrion by construction equipment, which may interrupt ABB reproduction by making suitable carcasses unavailable. If construction equipment inadvertently buries carrion, this impact would only last one breeding season and in a very limited area (the Plan Area). Although the Plan Area is long, it is mostly narrow (only 100 feet wide). Additional off-easement areas will also be small. Therefore, ABBs are likely to have access to other carrion sources just outside the narrow Plan Area.

4.4 Conservation Measures

This section describes actions that the Applicants will implement to reduce impacts from the covered activities and mitigate the impacts on the ABB in the Permit Area as described in Section 4.2, *Effects of Covered Activities*.

4.4.1 Biological Goals and Objectives

This HCP establishes certain biological goals and objectives as required under the USFWS's "five-point policy" (65 FR 35242). The AMMs and mitigation measures described in the plan, including measures to conserve and enhance ABB habitat, are consistent with the long-term survival and recovery of the ABB. Specifically, the goals and objectives of the HCP over the 8-year permit term are as follows.

Goal 1: Minimize impacts on ABB from covered activities of the Project.

Objective 1A: Implement the AMMs of the HCP, as described in Section 4.3.2, *Avoidance and Minimization Measures*.

Objective 1B: Restore vegetation in ABB habitat to pre-disturbance density where temporary impacts occur and to vegetation conditions suitable for ABB habitat where permanent cover change impacts occur.

Goal 2: Mitigate the loss of ABB habitat from the Project based on established mitigation ratios.

Objective 2B: Mitigate 777.15 acres of (Temporary/Permanent Cover Change/Permanent) impacts on ABB habitat through purchase of credits at an USFWS-approved ABB conservation bank (Table 2).

The Applicants will measure progress toward achieving these goals and objectives as described in Section 4.4, *Monitoring*.

4.4.2 Avoidance and Minimization Measures

Stormwater Best Management Practices

The Applicants will ensure that activities associated with the Project will employ an Oklahoma Department of Environmental Quality approved SWPPP utilizing BMPs to reduce construction stormwater runoff and prevent soil erosion in and around the construction area. Implementing the SWPPP will minimize the effects of soil erosion on ABB habitat within and adjacent to the Permit Area.

Limit Clearing in Temporary Work Areas

To the degree practicable, clearing of TWAs in the Permit Area will be limited to decrease temporary habitat loss. Estimates of impacts for TWAs presented in this HCP likely represent the maximum area that will be disturbed by the covered activities.

Limit Use of Motor Vehicles, Machinery, or Heavy Equipment

The Applicants will limit off-road use of motorized vehicles, machinery, and heavy equipment in the Permit Area to the degree practicable to reduce the potential for soil compaction and crushing of ABB brood chambers.

Operational Fluid Use and Storage

Operational fluids (including fuel, oil, etc.) may potentially cause take of ABBs. The Applicants will be in compliance with all applicable state and federal laws regarding fuel use and storage. Equipment will be fueled and all operational fluids will be stored within the Permit Area.

Fire

Vehicle use or improper maintenance of vehicles/machinery could ignite fires during dry conditions which may cause take of ABBs. Vehicles, machinery, and heavy equipment will not be parked where dry grass or vegetation could be ignited. All vehicles will be maintained according to the respective service manuals. In dry conditions, grass and debris will be cleaned away from exhaust systems and bearings on a weekly basis.

Limit Use of Artificial Lighting

Artificial lighting (e.g., from work lights and equipment mounted lights) can cause take of ABBs by interfering with normal behavior patterns. This will be minimized by (1) avoiding construction at night and (2) down-shielding required lights if construction does take place at night. To avoid or minimize this indirect effect, the Applicants will limit construction activities in the Permit Area to daylight hours during the ABB active season when practicable.

Relief of Soil Compaction

Following construction, the Applicants will disk (typically 6 inches deep) temporary work sites, laydown areas, and other heavily used or traveled areas in the Permit Area where soil compaction has occurred. In cases of severe soil compaction, these areas may be ripped to a depth of up to 24 inches. Disking will relieve soil compaction and promote restoration of vegetation.

Revegetation for Temporary and Cover Change Habitat Impacts

Following completion of construction/soil disturbing activities, the Applicants will restore vegetation in temporary impact areas to conditions equal to or better than pre-project conditions. For cover change impact areas (i.e., areas where habitat was converted from forested habitat to open habitat), the Applicants will restore these areas to conditions equal to or better than open habitats in the immediate area. In most cases, both temporary and cover change impacts will be restored using native warm season grasses and/or other native species naturally occurring in the surrounding area. Some areas, such as mixed grass pastures, will be restored to pre-project conditions that may feature a mixture of native and non-native species with the goal of restoring to equal or better habitat conditions for ABB. In other areas, restoration activities may be ineffective or impossible due to the wishes or land use practices of property owners or their tenants. In such cases, where restoration cannot be completed due to factors beyond the Applicants' control, the Applicants will mitigate these impacts at the permanent mitigation ratio.

If construction/soil disturbance ends during the dormant vegetation season, bare soil will be temporarily stabilized by broadcasting cool season annual species such as annual rye grass or wheat seed and, where necessary, using clean, weed-free wheat straw as mulch to protect seed and increase soil moisture. At the beginning of the next growing season, vegetation in these areas will be restored

as described in the preceding paragraph. Seeds used during vegetation restoration will be free of invasive species seeds or propagules and equipment used for restoration will be washed before use in restoration activities to reduce the chances of unintentionally introducing non-native or invasive plant seeds or propagules to the restoration area.

Training

Construction personnel will attend a training course and be issued a fact sheet with color photographs of the ABB and its larvae. Construction personnel will be instructed to report if ABBs or their larvae are observed during ground disturbance activities and to cease all such activity in the immediate area (i.e., within 50 feet). This area will be clearly marked. Construction personnel may proceed with their work outside of the marked area but shall suspend work within the marked area. In such an event, construction personnel will immediately notify the Applicants to arrange for an on-site inspection to confirm the ABB or larvae. If the inspection is completed and no ABB or larvae is found, then construction personnel may continue all ground disturbance activities within the marked area. If, however, the presence of ABB or larvae is confirmed, then the Applicants (or Applicants' consultant) will coordinate response efforts with the USFWS to ensure construction activities in this area can commence as soon as possible.

4.4.3 Mitigation

ABB habitat impacts from covered activities will be offset through conservation and management of ABB habitat in perpetuity. To offset these impacts, the Applicants will purchase ABB credits 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, often the landowner. 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 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* (U.S. Fish and Wildlife Service 2014). Conservation banks are established through a conservation bank agreement with the USFWS and a conservation easement for the bank that must be approved by the USFWS. When the Applicants mitigate habitat impacts through the purchase of credits at a USFWS-approved conservation bank, the bank sponsor is responsible for ensuring the success of and managing the mitigation land in perpetuity upon sale of the credits. The Applicants will purchase appropriate credits prior to any habitat impacts that could result in take of the ABB.

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. The USFWS has established mitigation ratios for ABB impacts in Oklahoma according to the type of impact and where it occurs (U.S. Fish and Wildlife Service 2016). For example, higher mitigation ratios are required for impacts that occur within the CPA. This plan applies these ratios to calculate the necessary mitigation for the

Project (Table 2). The ABB Habitat Assessment included in Appendix B provides additional information on how the potential ABB habitat and CPA areas were quantified for the proposed action.

The USFWS has defined impacts that remove occupied ABB habitat for 5 years or less as a "temporary impact". Although these habitat impacts are not permanent, they cause take of ABBs that may negatively and permanently affect the ABB population in the area. Loss of individuals and their potential offspring, even during a 5-year or less timeframe, reduces the number of ABBs in the area and may decrease genetic diversity of the population. Because the ABB is an annual species (the offspring of one year overwinter to become the reproductive adults the following year), ABBs that are removed from the reproductive population will cause a temporary decrease in the overall population. Therefore, the USFWS requires mitigation to be provided in perpetuity for these "temporary impacts" on habitat, though at a lower ratio than for permanent impacts on habitat.

Permanent cover change impacts change the successional stage of an area of ABB habitat to a different stage (e.g., forest to shrubland). Similar to temporary impacts, these areas will be restored to a condition suitable for ABB use within the 8-year permit term; however, these areas will be permanently maintained at a different successional stage that may increase threats to ABB in perpetuity (U.S. Fish and Wildlife Service 2016). Therefore, these impacts are mitigated at a higher ratio than temporary impacts.

Permanent impacts on occupied ABB habitat have higher mitigation ratios because they are expected to result in the highest level of effects over the longest period of time. The USFWS has established that each acre of permanent impact within a CPA requires 2 acres of mitigation (1:2) to fully offset the impact of the take.

The Applicants will estimate which type of habitat impact will occur in the Permit Area and mitigate appropriately, with USFWS approval, prior to any ground-disturbing activities likely to result in take of ABBs in occupied ABB habitat. The Applicants will restore habitat in areas with temporary or cover change impacts. If any of these areas cannot be restored due to reasons beyond the Applicants' control, these areas will be then mitigated at the higher permanent rate. At that point, no additional restoration measures will be required for those specific areas (i.e., areas originally quantified as temporary or cover change impacts with failing restoration and subsequently mitigated under the permanent mitigation ratio).

The Applicants will mitigate the permanent, temporary, and permanent cover change impacts in the Permit Area according to the established mitigation ratios. Mitigation credits will be purchased from a USFWS-approved bank. Maximum required mitigation is estimated to be 378.99 credits (Table 2); however, this estimate is based on 100% occupancy of suitable habitat in the Plan Area. This estimate is presented as the upper limit of mitigation for consideration in the review of this HCP. Actual required mitigation will be calculated once the Permit Area is determined using presence-absence surveys. The USFWS will validate presence-absence survey results and confirm the calculation of required mitigation as part of the mitigation approval process.

Table 2. Mitigation for the Second Atoka Pipeline Project

Impact Type	Mitigation Ratio (Impacts: Mitigation)	Project Impacts On ABB Habitat (Acres)	Required Mitigation (Acres)
ABB RANGE (EXCLUDING CPA)			
Temporary	1:0.25	230.74	57.69
Permanent Cover Change	1:0.5	93.52	46.76
Permanent	1:1	1.17	1.17
Total	--	325.43	105.62
CONSERVATION PRIORITY AREA (CPA)			
Temporary	1:0.5	370.54	185.27
Permanent Cover Change	1:1	74.26	74.26
Permanent	1:2	6.92	13.84
Total	--	451.72	273.37
TOTAL MITIGATION REQUIRED:			**378.99**

There are two USFWS-approved conservation banks that include the Project site in their service area and have ABB conservation credits available: the Muddy Boggy Conservation Bank (http://msusa.com/conservation-banks/conservation-oklahoma/about-muddy-boggy/) and the American Burying Beetle Conservation Bank (http://commongroundcapital.com/american-burying-beetle/).

In addition to mitigating temporary habitat impacts by conserving ABB habitat in perpetuity, the Applicants will implement post-construction restoration measures in the Permit Area to restore the affected area to a condition suitable for ABB use within the 8-year permit term.

4.5 Monitoring

Compliance monitoring verifies that the Applicants are fully implementing the HCP and meeting terms and conditions of its permit. Compliance monitoring requires that the Applicants prepare and submit an annual report for USFWS review and comment during the 8-year permit term. The Applicants will monitor restoration in the Permit Area (in areas where restoration occurred) to ensure that restoration goals are achieved. Results will be included in the annual report. Annual report requirements are further described in the reporting section. The USFWS-approved conservation bank where the Applicants purchase credits is responsible for the management, monitoring, and reporting for the land mitigated under this plan in order to achieve the requirements of the *American Burying Beetle Conservation Strategy for the Establishment, Management, and Operations of Mitigation Lands* (U.S. Fish and Wildlife Service 2014).

Adaptive management is a component of the USFWS's "five-point policy" (65 CFR 35242) and is typically required in HCPs. 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 ITP is issued. Due to the short-term impacts that would result from this HCP, no adaptive management strategy is needed. However, as described in Section 5.3, *Changed and Unforeseen Circumstances*, the Applicants will implement measures to address any changed and unforeseen circumstances that could affect revegetation in order to meet its goals for restoring ABB habitat where temporary impacts have occurred from the covered activities.

Chapter 5

Plan Implementation, Assurances, and Cost and Funding

5.1 Introduction

This chapter details the administrative requirements associated with plan implementation and the roles and responsibilities of the USFWS and the Applicants (Oklahoma City and OCWUT). This chapter also describes the regulatory assurances sought by the Applicants, reviews the costs associated with plan implementation and the funding sources proposed to pay for those costs, and the procedures for modifying or amending the plan.

5.2 Implementation

5.2.1 Oklahoma City and OCWUT

Under this HCP, the Applicants are responsible for funding and implementing all:

- Avoidance and minimization measures (Chapter 4),
- Mitigation (Chapter 4),
- Monitoring (Chapter 4),
- Remedial measures, if changed circumstances occur (Chapter 5), and
- Reporting procedures (Chapter 5).

Reporting

The Applicants will report annually to the USFWS on the status of HCP implementation. The annual report will consist of the following elements:

- Status of Project construction
- Amount of ABB habitat permanently and temporarily removed in the reporting year and cumulatively
- Location, amount, and timing of restoration actions
- Status of credit purchase in the USFWS-approved conservation bank for ABB (e.g., location of conservation bank, number of credits purchased, date of purchase)
- Results of monitoring of restoration sites
- Assessment of conflicting land use impacts, for the reporting year and cumulatively

The last annual report will be due at permit expiration and will report on the entire permit period.

The Applicants also will notify the USFWS of changed circumstances (Section 5.3.1) and of SWPPPs/BMPs approved for planned construction sites.

5.2.2 U.S. Fish and Wildlife Service

The USFWS is responsible for monitoring the Applicants' compliance with this HCP and the permit. The primary means of compliance monitoring is through the Applicants' annual report provided to the USFWS. The USFWS may also conduct site visits to the Project site or the conservation bank where credits are purchased to verify compliance with the terms of this HCP. The USFWS is also responsible for identifying any unforeseen circumstances, should they occur, and notifying the Applicants of their occurrence.

5.3 Changed and Unforeseen Circumstances

ESA regulations provide for regulatory and economic assurances to entities covered by approved HCPs concerning their financial obligations under the HCP (50 CFR 17.22(b)(2)(C.)). These assurances, called "no surprises," are intended to provide a degree of certainty regarding the overall costs associated with implementation. If unforeseen circumstances occur that adversely affect species that are covered by an HCP, the USFWS will not require of that HCP Applicants any additional land, water, or financial compensation or impose additional restrictions on the use of land, water, or other natural resources as long as the HCP is being properly implemented.[1] Because of the short duration of the permit (8 years), changed or unforeseen circumstances are highly unlikely to occur. However, changed circumstances are a required element of an HCP.

5.3.1 Definitions

Properly implemented means that the commitments and provisions of the HCP and permit are being fully implemented.

Changed circumstances are defined by federal regulation as those circumstances affecting a species or geographic area covered by the HCP that can be reasonably anticipated by the Applicants or the USFWS and to which the parties can plan a response (50 CFR 17.3).

Unforeseen circumstances are defined by federal regulation as changes in circumstances affecting a species or geographic area covered by an HCP that could not reasonably have been anticipated by the Applicants or the USFWS at the time of the HCP's development and that result in a substantial and adverse change in the status of the covered species (50 CFR 17.3).

Changed circumstances that could arise in the Permit Area have been identified and are described below. If the Applicants become aware of a changed circumstance in the Permit Area, they will notify the USFWS immediately. At that time, the Applicants will modify implementation of the plan in the manner described below, to the extent necessary to address the effects of the changed circumstances on the plan's conservation program. The Applicants will make the modifications without awaiting notice from the USFWS and will report to the USFWS on its actions.

5.3.2 Species Delisted or Downlisted

If the ABB is delisted or downlisted during the term of the permit, the delisting or downlisting decision would be made partly as a result of mitigation and conservation actions in approved HCPs,

[1] 63 FR 35 (1998) (amending 50 CFR 17.22(b)(5), and 222.307(g)).

including this plan. Consequently, operation and maintenance of the conservation bank utilized for this HCP would continue into perpetuity and the Applicants may not seek any refund for bank credits purchased.

Delisting would remove the prohibition for new project-related incidental take to occur. If delisting occurs during construction, the Applicants may choose to continue the AMMs to reduce threats to the species. This voluntary conservation may be especially important during the USFWS's required monitoring of the species' status for the first 5 years after delisting.

5.3.3 Fire, Flood, Severe Drought, or Tornado

A natural event such as fire, flood, severe drought, or tornado is possible within the duration of this permit. If such an event occurs, it could substantially decrease the success of restoration and vegetation re-establishment efforts in areas affected. If a fire, flood, or tornado occurs in the Permit Area during the permit term and restoration areas are damaged, the Applicants will contact the USFWS and develop a path forward to restore ABB habitat as described in Chapter 4. Due to the unpredictable nature of these events, such situations may allow for up to an additional five (5) years beyond the date of the natural event to complete restoration. If a natural event affects a restoration area that had already been fully restored to ABB habitat, no additional restoration efforts will be required.

5.3.4 Other Land-Use Activities Occurring in the Plan Area

Most of the Project is located on private land. The Applicants hold easements on these lands. This allows construction and ongoing maintenance of the pipeline but does not give the Applicants the right to dictate how individual landowners manage or use their land. Since this project will result in mostly temporary impacts, restoration of the easements following construction will be a major goal of this HCP. The Applicants will complete restoration activities with the goal of re-establishing ABB habitat to conditions equal to or better than pre-project conditions. We anticipate that land uses along the easement will not drastically change as a result of the project and that most, if not all, areas within the easements can be restored without major negative effects due to changing land uses or unanticipated land uses. Examples of potential conflicting land uses include use of the easement for all terrain vehicle trails, establishment of wildlife food plots, or maintaining vegetation below 8 inches due to frequent mowing. Prevention or control of such activities is beyond the control of the Applicants.

Land use activities such as these, or similar activities, could negatively affect restoration of ABB habitat in certain locations, but are not expected to significantly affect overall restoration efforts. Although we anticipate that conflicting land use impacts will be small, we also acknowledge that in some cases, land use activities could reduce the effectiveness of, or prevent restoration from being successfully completed. In such cases (i.e., where the easement cannot be restored to pre-project or better conditions due to conflicting land uses), the Applicants will identify these areas during annual monitoring and mitigate these areas at the permanent mitigation ratio. Details with regard to these areas will be provided to the USFWS via annual monitoring reports.

5.3.5 Emergency Repair

An emergency situation could arise during the Permit term that requires the Applicants to impact restored ABB habitat in the Permit Area during the active season. These situations would typically relate to human welfare, public safety, or similar reasons. The location and aerial extent of any such impact cannot be known prior to the occurrence of an emergency. In such situations and when practicable, the USFWS will be notified before any such emergency repairs are made to coordinate required AMMs and/or mitigation. For emergencies that demand the immediate impact of ABB habitat in the Permit Area, the Applicants will submit a report providing details to the USFWS within 72 hours of performance of the activity. This report will be followed by coordination with the USFWS to determine the appropriate mitigation or restoration efforts required.

5.3.6 No Surprises Assurances

The Applicants request no surprises assurances consistent with ESA regulations and as described above. If a changed circumstance as defined by this plan occurs within the Permit Area, the Applicants will implement the appropriate remedial actions as described above to the extent necessary to address the effects of the changed circumstance on the HCP's conservation strategy. The Applicants will also report on its actions to the USFWS. In the case of an unforeseen circumstance, the USFWS or any other entity may take any actions necessary in order to conserve ABB, as long as the actions are at the expense of that entity. The Applicants may choose voluntarily to implement additional actions to conserve the ABB.

In the event of an unforeseen circumstance, the USFWS will provide at least a 30-day notice of a proposed finding of unforeseen circumstance to the Applicants. The USFWS will then work with the Applicants to develop an appropriate response to the new conditions. The Applicants will have the opportunity to submit information to the USFWS to rebut the proposed finding, if it deems necessary. Any action taken by the Applicants to address an unforeseen circumstance will be done voluntarily.

5.4 Funding

Section 10(a)(2)(A)(ii) of the ESA requires that HCP applicants must specify the funding that will be available to fully implement the HCP. The ESA also requires that the USFWS must find that "the applicants will ensure that adequate funding for the plan will be provided" (Section 10(a)(2)(B)(iii)).

The Applicants commit to funding and implementing all conservation measures described in Chapter 4, *Conservation Program*. The cost of the avoidance and minimization measures is expected to be minimal compared to the capital cost of construction of the new pipeline. These avoidance and minimization costs will be incorporated into the Project's capital costs. The Applicants will negotiate with one of the USFWS-approved ABB conservation banks to secure required mitigation credits.

Prior to issuance of the permit and prior to impacts on ABB, the Applicants will provide a letter to the USFWS documenting the reservation or purchase of credits at a USFWS-approved conservation bank for ABB. The amount of credits reserved or purchased will be based on final impacts quantification determined after presence-absence surveys are completed during the active season prior to project construction. If the Applicants purchase sufficient credits prior to issuance of the ITP, no further funding guarantees will be necessary to document funding assurances to the USFWS.

The Applicants propose providing a funding guarantee to the USFWS in the form of a letter of assurance in lieu of a letter of credit or performance bond. Oklahoma City is an Oklahoma municipal corporation and OCWUT is an Oklahoma public trust with its sole beneficiary, Oklahoma City, both created under Oklahoma law. The relationship of Oklahoma City and OCWUT is one in which Oklahoma City owns and operates and OCWUT leases and finances the Atoka pipeline. All funding for the Second Atoka Pipeline Project is provided by OCWUT through rate payer funds, commercial loans, and Triple A bonds. OCWUT's financial statement will be provided to the USFWS for review upon request.

Due to the fact that Oklahoma City and OCWUT are public entities, the type of funds being used to finance the Project, and the nature of the Project (i.e., a public utility water pipeline), the Applicants request that the USFWS accept a letter of assurance from OCWUT in lieu of another type of financial instrument.

The credit price paid by the Applicants 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.

The Applicants 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 5.3, *Changed and Unforeseen Circumstances*.

5.5 Plan Revisions and Amendments

The ITP may be renewed at the discretion of the USFWS Regional Office where the permit is issued. If the Applicants (Oklahoma City and OCWUT) file a renewal request and the request is on file with the issuing USFWS office at least 30 days prior to the permit's expiration, the permit will remain valid while the renewal is being processed. The Applicants may not take listed species beyond the quantity authorized by the original permit. A renewal request must:

- be in writing;
- reference the permit number;
- certify that all statements and information in the original application are still correct and include a list of changes;
- provide specific information concerning what take has occurred under the existing permit and what portions of the Project are still to be completed; and
- request renewal.

If the Applicants fail to file a renewal request 30 days prior to permit expiration, the permit becomes invalid after the expiration date. A public comment period is generally required if the Applicants seek only an extension of the expiration date and proposes no additional taking. Compliance with annual reporting requirements is required to qualify for renewal.

A plan amendment is highly unlikely because of the short duration of this permit and the narrow focus of the covered activities. Substantive changes to the plan will require an amendment of the

Section 10(a)(1)(B) ITP. Following is a summary of the types of changes that may require a plan amendment and the procedures for approval.

- ESA listing of a species that may be taken by covered activities and cannot be avoided.
- Modification of a covered activity, mitigation action, or other action under the HCP, including funding, that may significantly affect authorized take levels, effects of the covered activities, or the nature or scope of the conservation program.
- Any other modification of the covered activities or actions likely to result in a significant adverse effect on ABB not addressed in the original HCP.

Substantive changes to the plan requires amending the HCP and the ITP through the same formal review process as the original HCP and permit, including the internal Section 7 consultation and publication in the *Federal Register*. The Applicants will submit an application for an amendment to the USFWS in a report that will include a description of the need for the amendment, an assessment of its impacts, and any alternatives by which the objectives of the proposal might be achieved. In this report, the Applicants will describe appropriate changes to the mitigation measures such that ABB are appropriately protected.

5.6 Alternatives to Take

The ESA requires that applicants for an ITP specify which alternative actions to the take of federally listed species were considered and the reasons why those alternatives were not selected. The *Habitat Conservation Planning and Incidental Take Permit Processing Handbook* (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1996) identifies two alternatives commonly used in HCPs: (1) any specific alternative that would reduce take below levels anticipated for the Project; and (2) an alternative that would avoid take and therefore not require a permit from the USFWS.

The Applicants also considered a longer duration of the HCP to cover the operational lifespan of the project. This alternative was, however, rejected because the project operational lifespan could easily range from several decades to over a century. Because of uncertainties with regard to ABB populations, climate, and other factors over this time period, it was determined that the greatest likelihood for take would occur during the eight years expected to complete Project construction and habitat restoration. Therefore, take authorization for a greater period of time was not considered further.

Per the requirements of the ESA, this section describes the alternatives that were considered but, for reasons described below, were not selected.

5.6.1 No Action Alternative

Under the No Action Alternative, the Project would not be implemented and a Section 10(a)(1)(B) ITP from the USFWS would not be issued. The sites where covered activities would occur would remain in their existing conditions. No impact to ABB would occur under this alternative.

While this alternative would avoid impacts on ABB and its habitat, it is inconsistent with the Applicants' Project goals and water needs for its customers. The Project is designed to provide water to Oklahoma City and surrounding communities. Consequently, although this alternative would

ensure that ABB would not be disturbed, it was rejected because of its incompatibility with the Applicants' Project goals.

5.6.2 Alternative Alignment

Under this alternative, the Applicants would avoid suitable habitat with positive occurrences of ABB and establish a new pipeline route through unsuitable or unoccupied habitat. This alternative is not likely possible or feasible. The Applicants secured the existing easements along the alignment in the late 1950s and early 1960s. This alignment currently contains the existing pipeline and is maintained by OCWUT. This easement also contains enough space for the new pipeline. Re-routing the new pipeline in a new and separate easement would impose a significant economic and logistical hardship (i.e., cost associated with new easements and/or difficulty in obtaining new easements) as well as lead to greater impacts on ABB (due to requiring additional lands and subsequent increases in ground disturbance). For these reasons, the existing route minimizes impacts on ABB relative to other alignments. Therefore, this alternative was also rejected.

Chapter 6
List of Preparers

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Chapter 7
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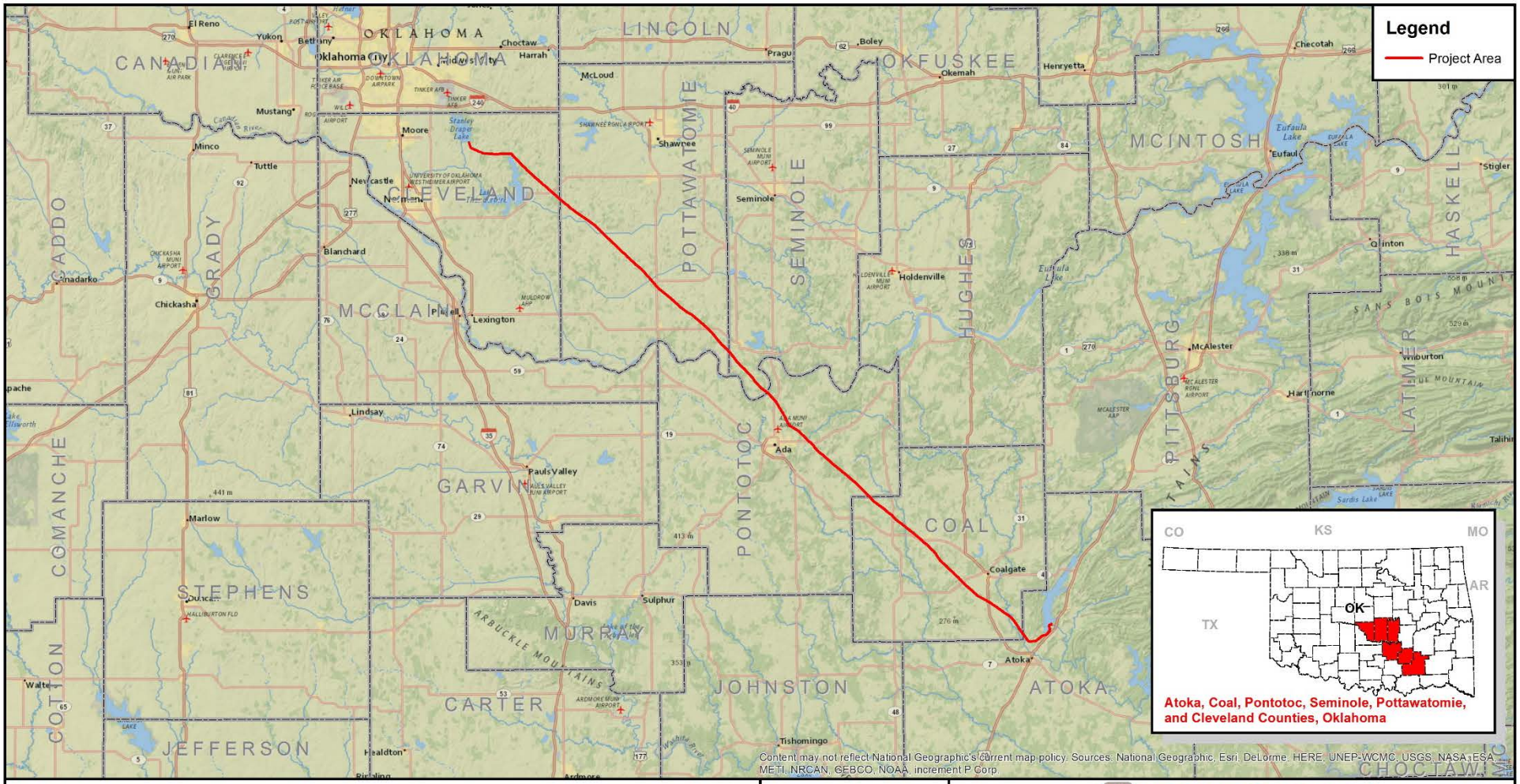
FIGURES



Prepared for: Oklahoma City Water Utilities Trust

Subject Property:
Atoka Water Pipeline Project
Atoka, Coal, Pontotoc, Seminole, Pottawatomie, and Cleveland Counties, Oklahoma

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Figure 1: Project Vicinity Map
Source: ESRI National Geographic World Map Basemap
Prepared by: A. Couch; April 25, 2017

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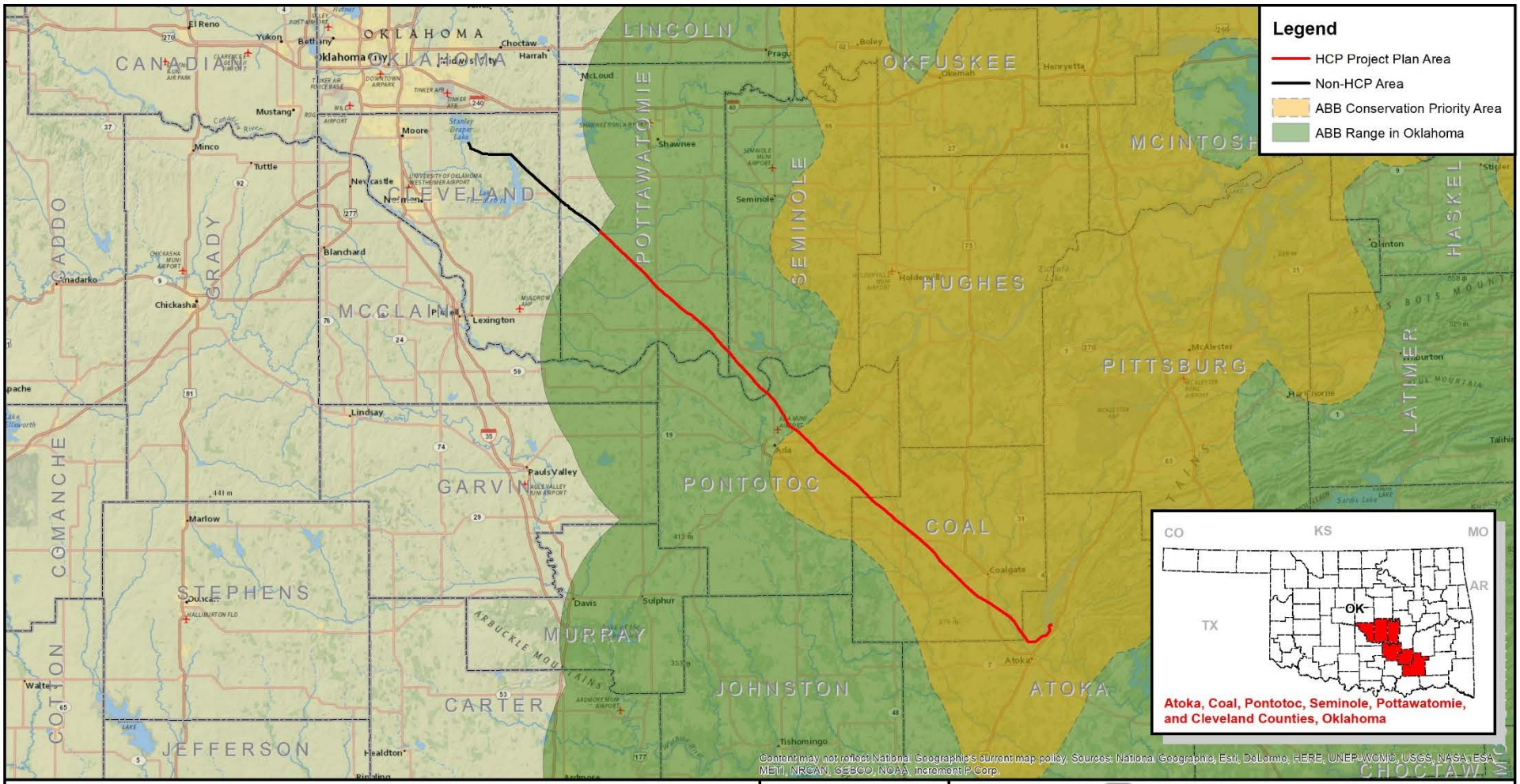

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Figure 2: Project Plan Area
Source: US Fish and Wildlife Service Oklahoma Ecological Services Field Office; ESRI National Geographic World Map Basemap

Prepared by: F. Woolridge; October 11, 2017

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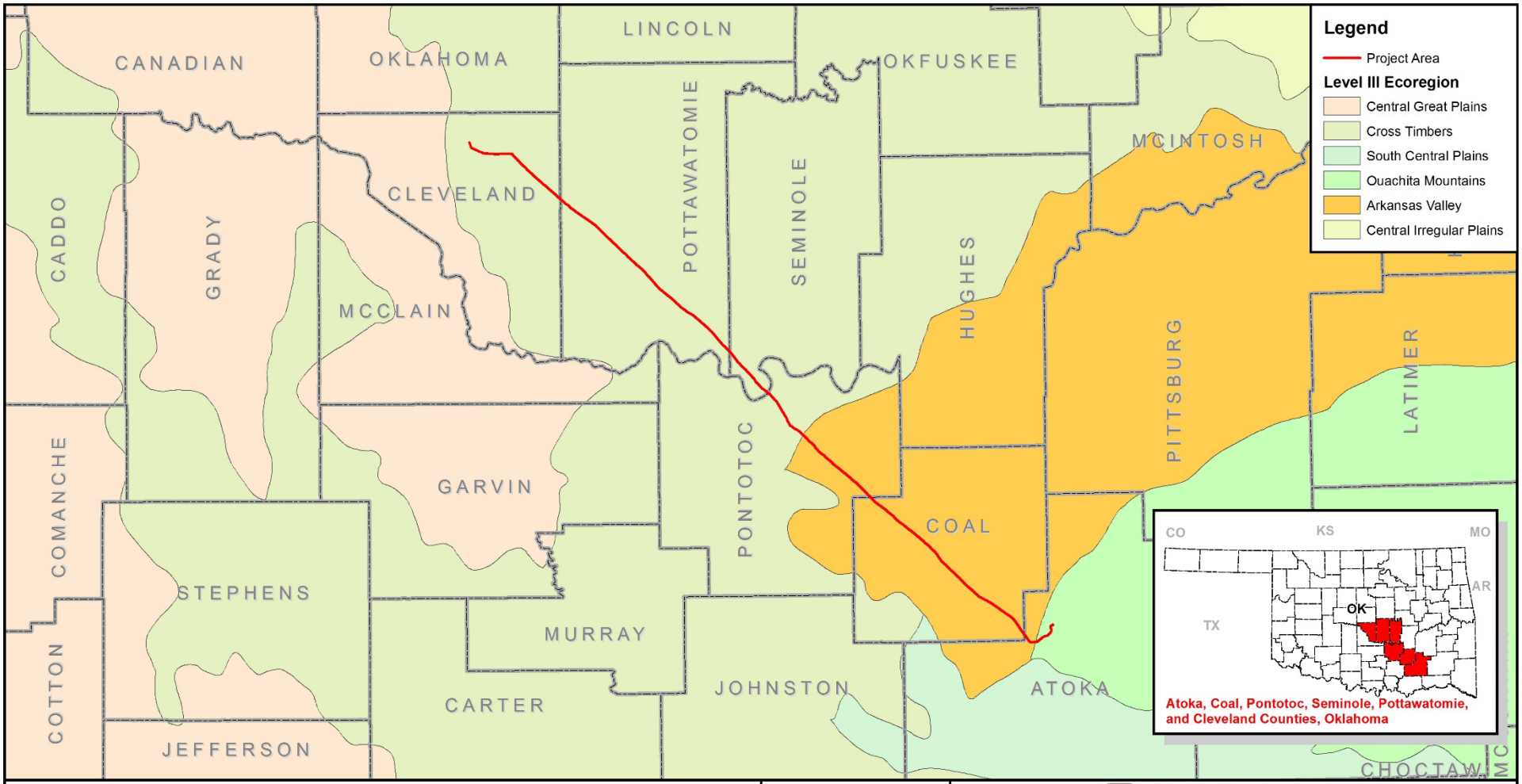

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Atoka, Coal, Pontotoc, Seminole, Pottawatomie, and Cleveland Counties, Oklahoma

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Figure 3: Level III Ecoregion Map
Source: US EPA Level III Ecoregions of Oklahoma

Prepared by: A. Couch; April 25, 2017

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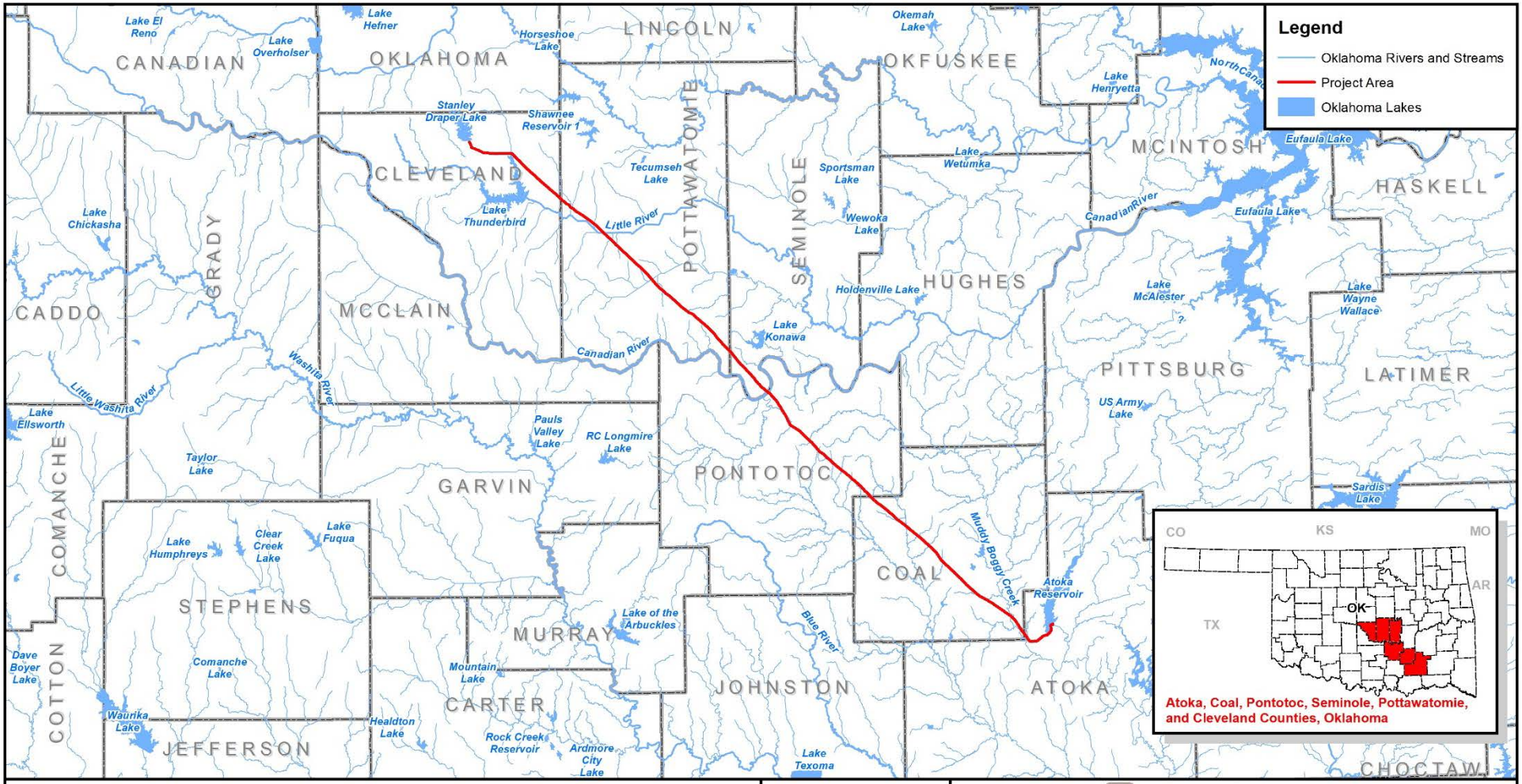

Prepared for: Oklahoma City Water Utilities Trust

Subject Property:
Atoka Water Pipeline Project
Atoka, Coal, Pontotoc, Seminole, Pottawatomie, and Cleveland Counties, Oklahoma

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Figure 4: Major Surface Water Features Map
Source: Oklahoma Water Resources Board (OWRB); University of Oklahoma Center for Spatial Analysis

Prepared by: F. Woolridge; October 16, 2017

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