Prospectus

Wiseman Mitigation Bank

Izard County Arkansas

December 2016

Prepared By:

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Table of Contents

Table of Tables and Figures

I. Introduction

The Arkansas State Highway and Transportation Department (AHTD) proposes the establishment of a stream and wetland mitigation bank in Izard County, Arkansas. The proposed bank is located along Johnson View Road between Arkansas Highway 354 and Arkansas Highway 56 approximately 2.5 miles south of Wiseman, AR (Figure 1). AHTD purchased the property to be used for compensatory mitigation for unavoidable impacts resulting from AHTD highway construction and maintenance activities authorized under Section 404 of the Clean Water Act.

The property occupies the north one-half of the southwest quarter of section 23; and part of south one-half of the southwest quarter of Section 23, Township 18 North, Range 8 West in Izard County, Arkansas. The survey boundary begins at the southwest corner between Section 22 and Section 23 of said Township 18 North, Range 8 West; thence south 85°46'23" east along the south line of said Section 23 469.92 feet; thence north 0°22'36" east 392.97 feet; thence north 81°26'53" east 832.01 feet to the east line of the southwest quarter of said southwest quarter; thence continue north 81°26'53" east 1325.01 feet to the east line of said southwest quarter; thence along the east line north 1°14'02" west along the east line of the southeast quarter southwest quarter of Section 23 1020.305 feet to northeast corner of said southeast quarter southwest quarter; thence west along the north line 1323.92 feet to the northwest corner of said southeast quarter southwest quarter; thence west along the north line 1323.92 feet to the northwest corner of the southwest quarter southwest quarter; thence south along the west line 1292.76 feet to the point of beginning and, all that part of the east one-half of the southeast quarter of section 22 lying east of the county road; all of the above said lands being located in Township 18 North, Range 8 west in Izard County containing 160.11 acres more or less (Figure 2).

II. Management Goals and Objectives

The main goal of this proposed mitigation bank is to provide compensation for unavoidable impacts to Waters of the United States associated with highway projects permitted under section 404 of Clean Water Act. This will be accomplished through the objectives of restoration, enhancement, and preservation of streams, wetlands, glades, and associated uplands. Cattle and the related agricultural practices were ceased upon purchase of the property by AHTD in late 2015 (Figure 8).

Objective 1. Stream Restoration and Preservation

Approximately 9,950 linear feet of spring and seepage influenced streams have been identified on the property (Figure 3). Of these 7,358 ft. were intermittent and 2,592 ft. were

ephemeral streams. Preliminary surveys identified 4,592 linear feet of intermittent streams with substantial degradation in need of restoration. The remaining 5,358 ft. of stream are in good to excellent condition suitable for preservation. Methods for stream restoration will be dependent on further morphological surveys. Potential methods will include but are not limited to: levee removal for floodplain connection, channel creation to restore hydrology, habitat enhancement using rock and log in stream features, and natural channel designs with sinuosity and grade control. Representative photographs of streams can be found in figures 10-15.

Objective 2. Wetland Enhancement

Numerous springs and seepages are located throughout the property creating a mosaic of small pocketed wetlands (Figure 9). Historic anthropogenic activities degraded the landscape including ponding, installation of spring boxes, and pasture (Figure 13). Appropriate measures will be taken to restore these unique features and maximize functionality. Mitigation will include the removal of impoundments to improve hydrology and exotic species will be controlled to promote native vegetation growth.

Objective 3. Riparian zone Preservation and Restoration

A landscape approach will be utilized to create a diverse patchwork of hardwood forest, open savannah prairie, and glade habitat within riparian zones of the streams most suitable for this ecoregion. Restoration activities will include planting of bare root seedlings and promoting native forbs and grasses in the savannah and glade habitats. Additionally, selective removal of eastern red cedar (*Juniperus virginiana*) will be conducted in order to restore glade plant communities under the advisement of state natural resource agencies including the Arkansas Natural Heritage Commission (ANHC) and Arkansas Game and Fish Commission (AGFC). Eastern red cedars are a native species that can become invasive on glades outcompeting sensitive plant communities.

Hardwood tree survivorship is traditionally used as a metric for determining riparian buffer success and stream mitigation credit generation. However, due to local site conditions characterized by naturally shallow soils and bedrock protrusion, AHTD proposes that riparian success not be based exclusively on tree survivorship, but on the establishment of habitat appropriate buffers. The prevalent bedrock protrusions and shallow soils throughout the property are typical of glade habitats and are not conducive to tree growth; therefore efforts to convert to hardwood forest would likely be unsuccessful. To restore regionally appropriate riparian zones, AHTD proposes that both forested and non-forested riparian restoration be accepted for credit generation. Forested riparian zones will be planted with barefoot seeding by tradition means. Non-forested glade restoration will include the selective removal of red cedars to encourage natural recruitment of glade appropriate species.

A total of 37 acres of riparian zone will be restored with 100 ft. riparian buffers surrounding streams. Fifteen acres will be non-forested glades and 22 acres will be forested (Figure 4). Final determination of acres to be planted, cedars to be removed, and areas to be preserved will be determined in the banking instrument and by advisement of the natural resource agencies.

Objective 4. Restoration of glades and enhancement of upland habitat

Fire suppression and planting of non-native grasses for agriculture have altered the native plant community of traditionally open glade habitats. Restoration efforts will primarily include fire and cedar removal to help promote native communities. Partnerships with state and non-governmental agencies will ensure the best possible outcome. An additional 123 acres of upland area remain outside of the 100 ft. riparian buffer and will provide additional protection to the mitigation area (Figure 4).

III. Establishment and Operation

An Interagency Review Team (IRT) would facilitate the establishment of the mitigation bank. The IRT would review plans and seek consensus from Federal, State, and public entities on the Mitigation Banking Insturment (MBI). The US Army Corps of Engineers Little Rock District (SWL) would serve as Chair of the IRT and will make final decisions regarding the terms and conditions of the MBI.

Agencies invited to participate on the IRT include the U.S. Environmental Protection Agency, Region VI (EPA); the U.S. Fish and Wildlife Service, Region IV (USFWS); the Federal Highway Administration, Arkansas Division (FHWA); the Natural Resources Conservation Service (NRCS); the Arkansas Department of Environmental Quality (ADEQ); the Arkansas Game and Fish Commission (AGFC); the Arkansas Natural Heritage Commission (ANHC); Arkansas Forestry Commission (AFC); and the Arkansas Natural Resources Commission (ANRC).

AHTD will operate the bank as a single client compensatory mitigation bank. Ownership of the property and sponsorship will be retained by AHTD. Design, construction, and monitoring associated with the mitigation bank will be conducted by AHTD. AHTD will maintain a credit ledger within RIBITS to track credits debited.

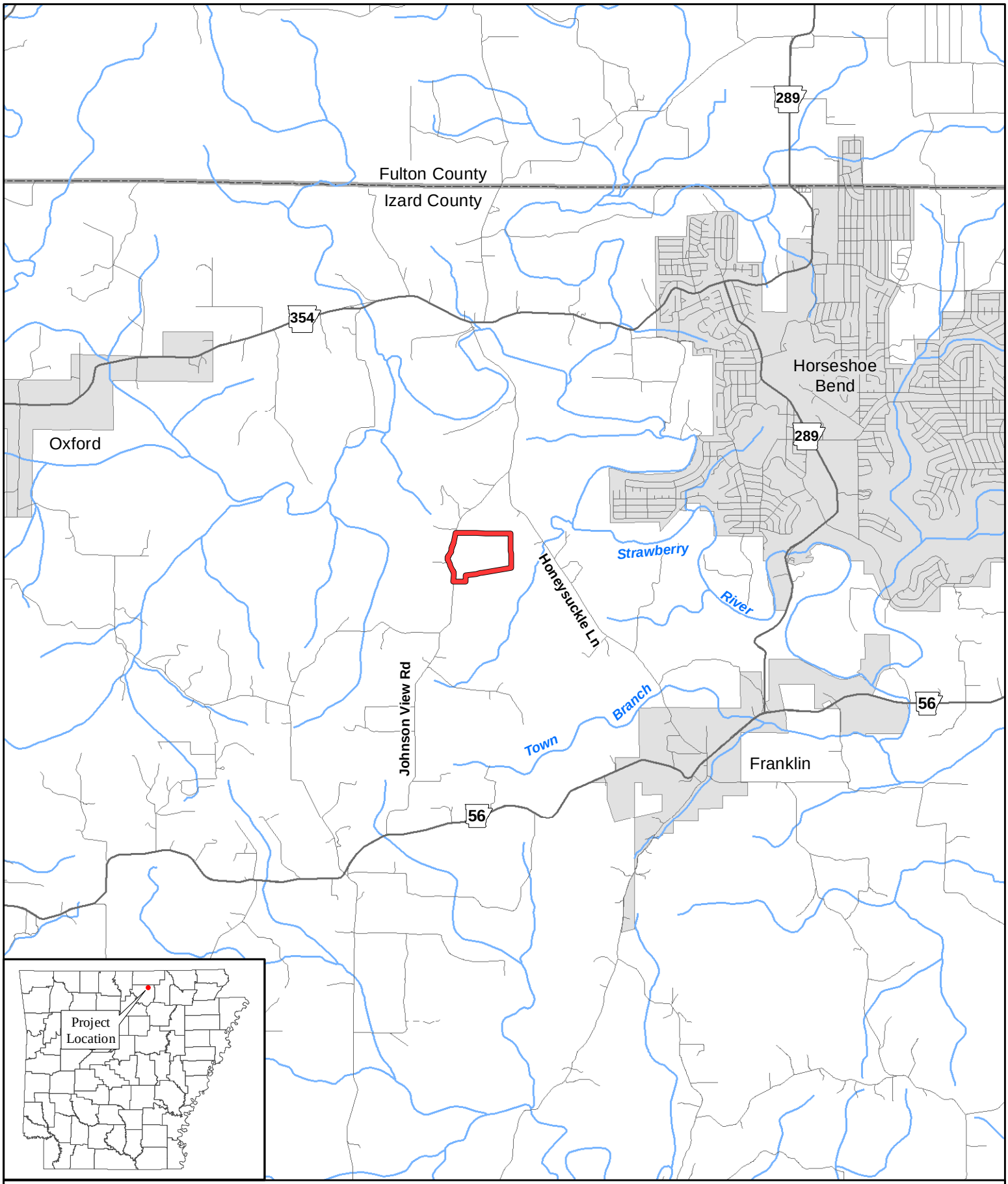


Figure 1
Proposed Wiseman Property
Mitigation Bank

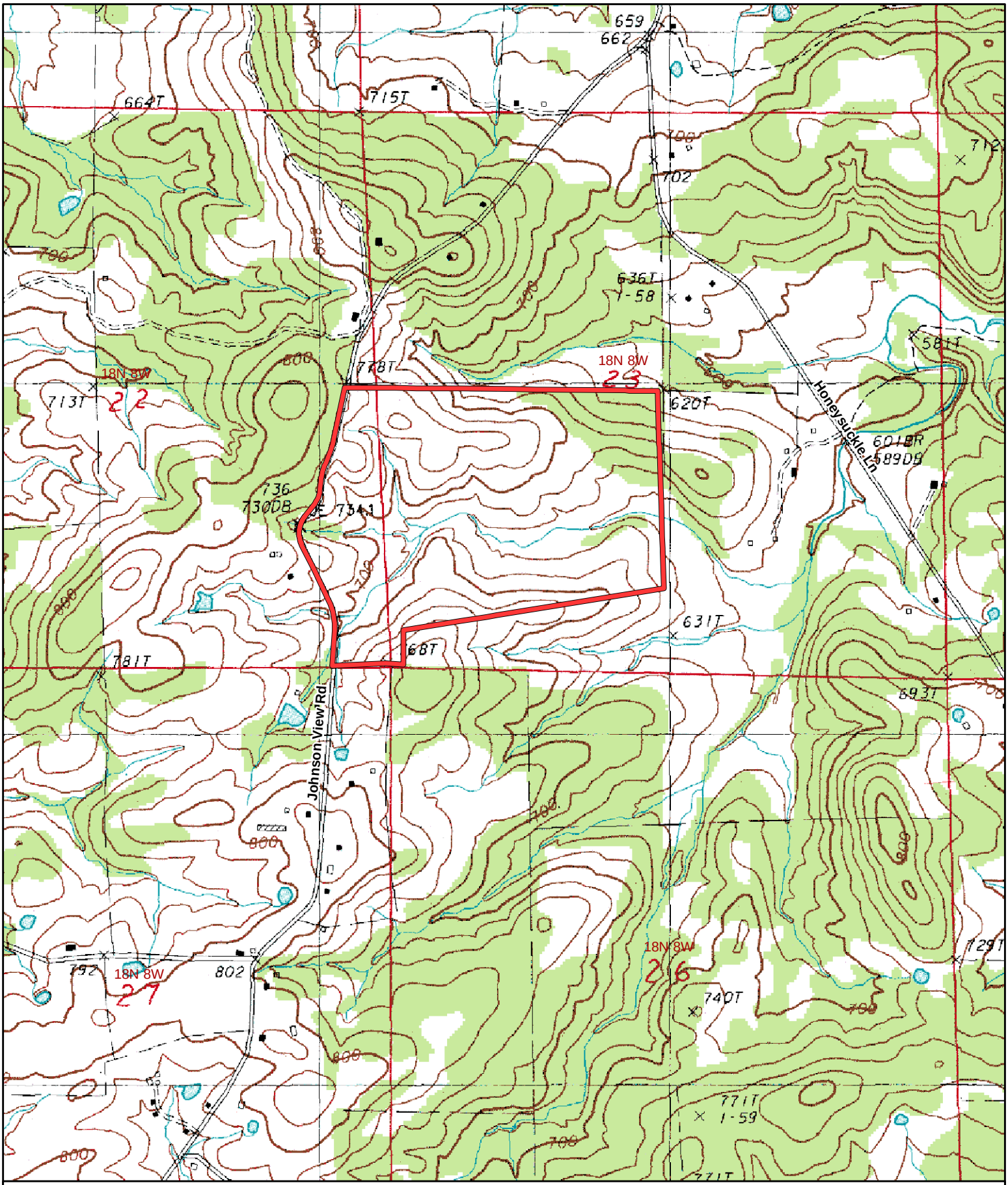


Figure 2
Topographic Map

AHTD - Environmental GIS - Reed
March 16, 2016

Franklin 1984 USGS Topographic Map

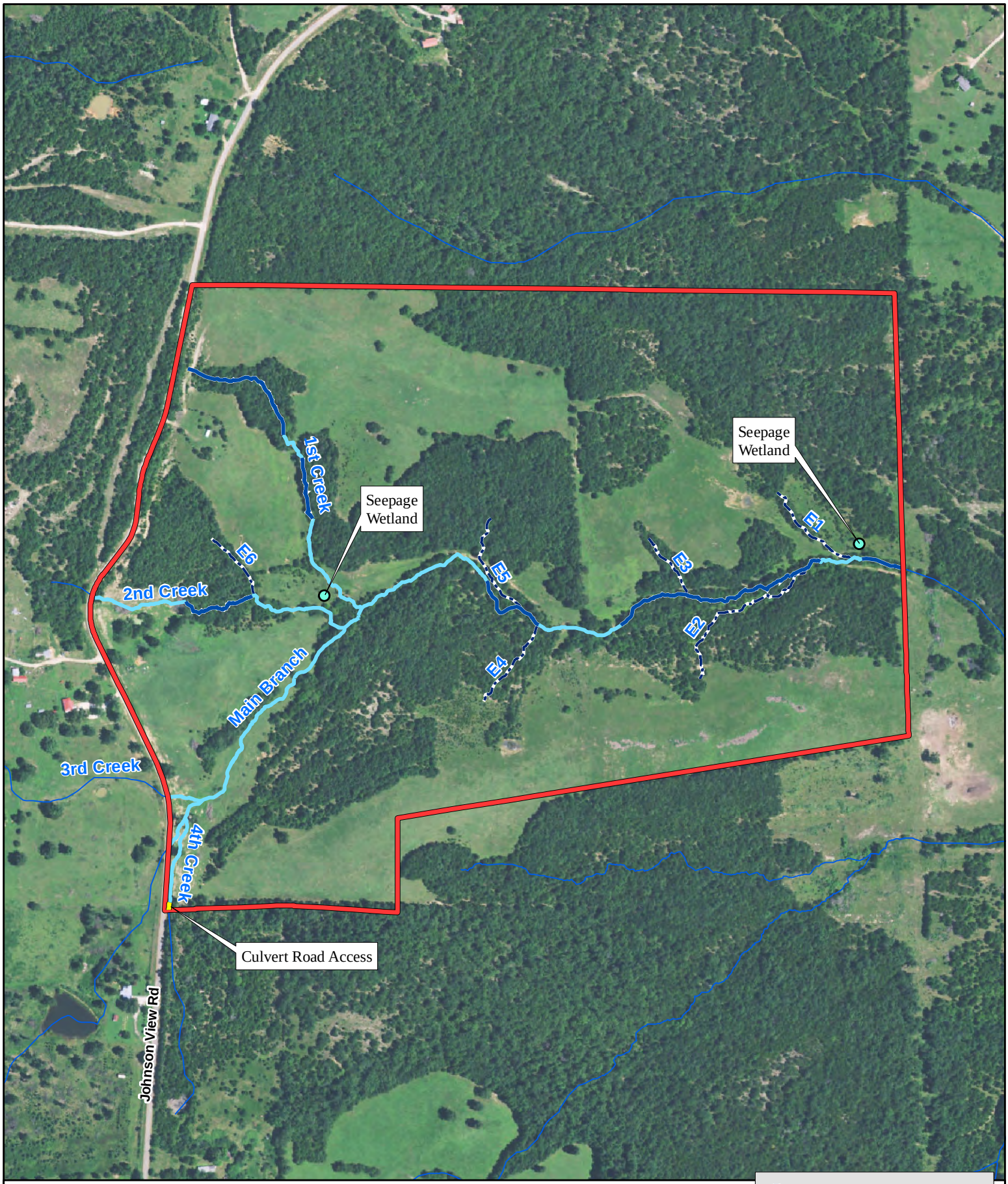


Figure 3
Restoration Plan
Streams and Wetlands

AHTD - Environmental GIS - Reed
May 25, 2016

Photography: NAIP Summer 2015

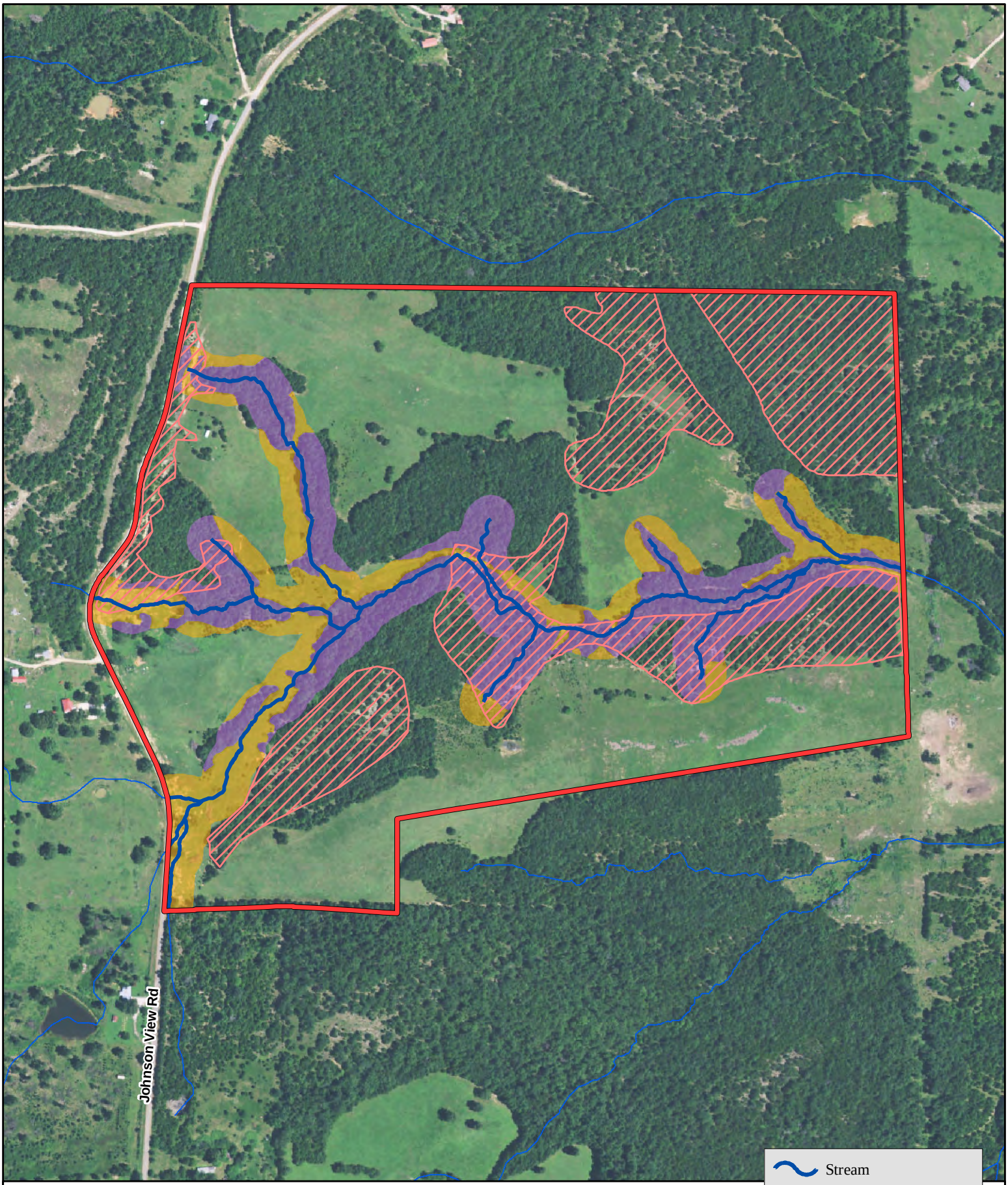


Figure 4
Restoration Plan
Buffers and Glades

AHTD - Environmental GIS - Reed
May 25, 2016

Photography: NAIP Summer 2015

IV. Proposed Service Area

The geographic service area (Figure 4) would include all or parts of five sub-basins (8 digit HUCs). This includes two primary service areas of the Strawberry and Spring, and secondary service areas of the North Fork White, Middle White, and Eleven Point. These sub-basins all are encompassed by the Upper White sub-region. The corresponding United States Geologic Service (USGS) cataloging codes are listed below in Table 1.

Sub-basin Name	HUC	Service Area
Strawberry	11010012	Primary
Spring	11010010	Primary
Middle White	11010004	Secondary
North Fork White	11010006	Secondary
Eleven Point	11010011	Secondary

Table 1 USGS Hydrologic Unit Codes for Sub-Basins in the Geographic Service Area

V. General Need and Feasibility

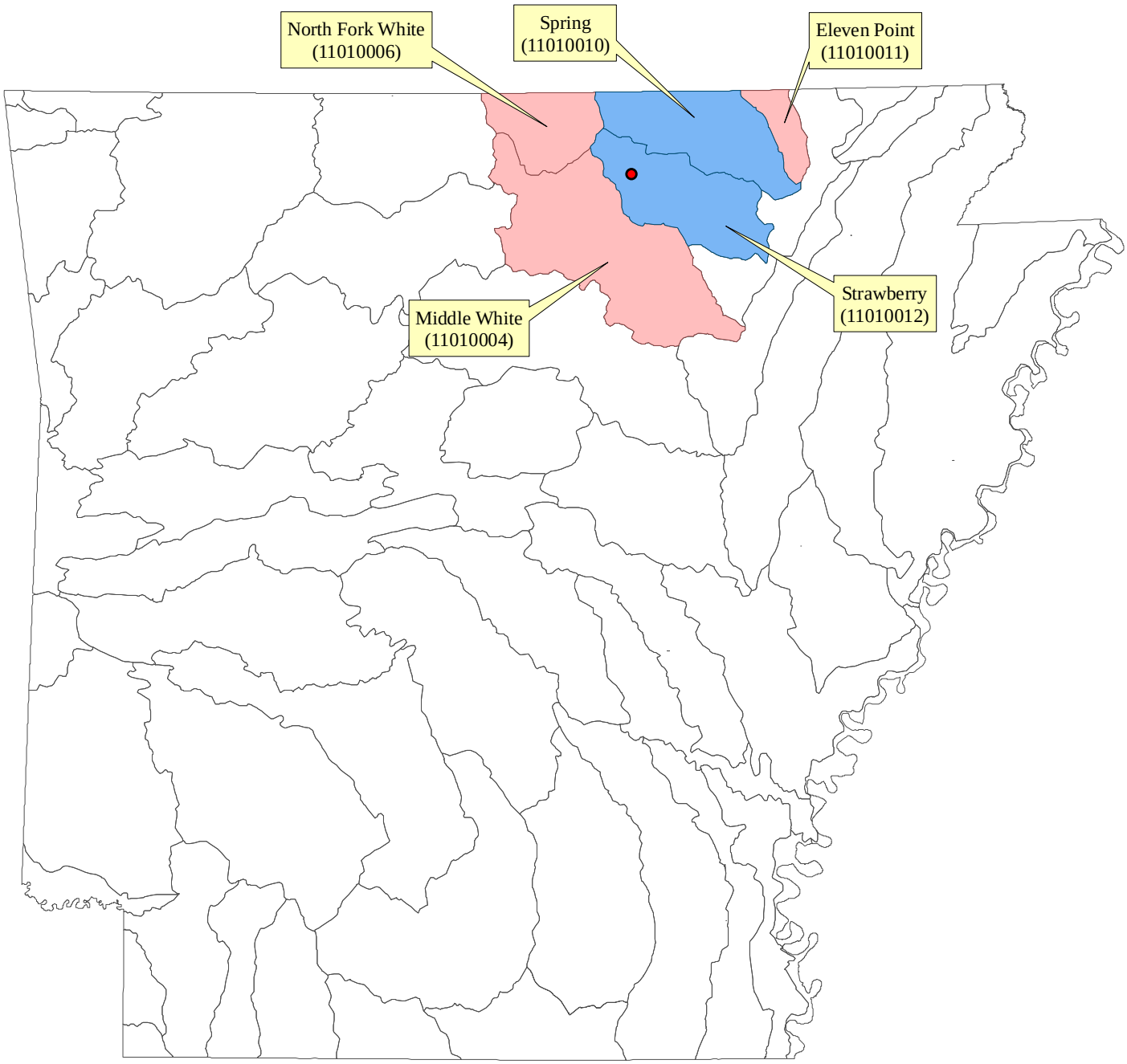
AHTD is required to compensate for unavoidable losses to streams and wetlands due to highway construction and maintenance projects. Currently there are no established mitigation banks in the majority of the proposed service area.

VI. Ownership

AHTD is the owner of the property and has recorded a legally protected warranty deed restriction on the property. The restriction requires that any activity on the property comply with the terms of a mitigation plan or banking instrument. AHTD will manage the property for the operational life of the bank. The operational life of the bank terminates when compensatory mitigation credits have been exhausted and the bank site is self-sustaining. Subsequently, AHTD may deed the property to or enter into a management agreement with an appropriate state or Federal agency provided the agency manages the property in accordance with the provisions of the MBI.

VII. Long-term management

AHTD is responsible for securing adequate funding to monitor and maintain the mitigation bank throughout its operational life. A cooperative long term management agreement between AHTD and other natural resource agencies are being explored as an option to allow for stewardship beyond the operational life of the bank. Ownership and deed would be retained by the AHTD with a memorandum of agreement of any partnerships. AHTD would be responsible for securing sufficient funds to cover contingency actions in the event of default or failure. Additionally, AHTD would be responsible for providing alternative compensatory mitigation if it is determined necessary by the US Army Corps of Engineers.



N

0 10 20

Miles

AHTD - Environmental GIS - Reed
March 16, 2016

Figure 5
Proposed Service Area Watersheds

Proposed Mitigation Bank
Primary Service Area
Secondary Service Area

VIII. Qualifications of the sponsor

AHTD is presently the owner and sponsor of eight mitigation banks and 19 mitigation sites, totaling 3,893 acres of wetland mitigation property managed according to approved banking instruments.

IX. Ecological Suitability

The primary considerations for site selection were watershed needs, baseline conditions, and restoration potential. The property includes four intermittent tributaries and six ephemeral tributaries to a larger unnamed tributary of the Strawberry River approximately one mile west of the confluence. The Strawberry River is designated by the state as an Extraordinary Resource Waters, Ecologically Sensitive Waterway, and Natural and Scenic Waterway. It is also listed on the National River Inventory by the National Park Service for outstanding remarkable values of scenery, recreation, geology, and fish. Numerous state and federally protected species are found in the Strawberry River drainage and include the Strawberry River darter (*Etheostoma fragi*), the pink mucket (*Lampsilis abrupta*), snuffbox (*Epioblasma triquetra*), Curtis's pearly mussel (*Epioblasma florentina*), slippershell (*Alasmodonta viridis*), Scaleshell (*Leptodea leptodon*), and rabbitsfoot (*Quadrula cylindrica*). It is one of the most aquatically biodiverse rivers in the state with over 100 fish species on record. Strawberry River darters have been observed in the streams on the property in relatively high abundance likely making it an important fish spawning sites (Figure 17).

Maintained pasture in the upland areas show promise for open savannah restoration through vegetation management and prescribed fire regimes. Dolomite glades, heavily encroached by cedars, also show good potential for restoration. Vegetation surveys resulted in the finding of ANHC tracked plants including celestial-lily (*Nemastylis geminiflora*), showy beardtongue (*Penstemon cobaea*), Bush's skullcap (*Scutellaria bushii*), and large Indian-breadroot (*Pediomelum esculentum*). A 1975 areal image indicates that the majority of the property was cleared and likely utilized for cattle grazing (Figure 5). Some areas have been left unmanaged and have begun to naturally reestablish an oak-hickory forest, while other have been maintained in pasture dominated by exotic fescue (*Festuca*) and native broomsedge (*Andropogon*). Partially burned debris piles indicate recent tree clearing activities and were deposited in many of the stream channels and riparian zones. Riparian vegetation consists of a mixture of oak species (*Quercus spp.*), elm (*Ulmus spp.*), sycamore (*Platanus occidentalis*), willows (*Salix spp.*), and honeylocust (*Gleditsia triacanthos*). Six species of milkweed (*Asclepias spp.*) were also observed, making the upland areas promising for Monarch Butterfly (*Danaus plexippus*) habitat.

Quail, turkey, and deer, as well as, a variety of migratory song birds, diverse herpetofuana, and numerous fish species have been observed on the property, though comprehensive biological surveys have not yet been completed. The combination of aquatic and terrestrial resources on the property provides potential for a landscape level mitigation approach that will not only benefit stream and wetland resources but supporting uplands as well. Collaborative efforts will not only improve the aquatic resource, but will protect upland habitat as well.

Soils on the site are mapped into three soil units by the USDA (*Soil Survey of Izard County, Arkansas* 1979) (Figure 6). Two Agnos very cherty silt loam soils are described as deep, well drained, very slowly permeable soils with 3 to 8 percent slopes gently sloping and 8 to 20 percent slopes moderately sloping. Estate-Portia-Moko association are, 8 to 20 percent slopes, stony deep to shallow, permeable soils, with moderately slopes.

N

0 250 500

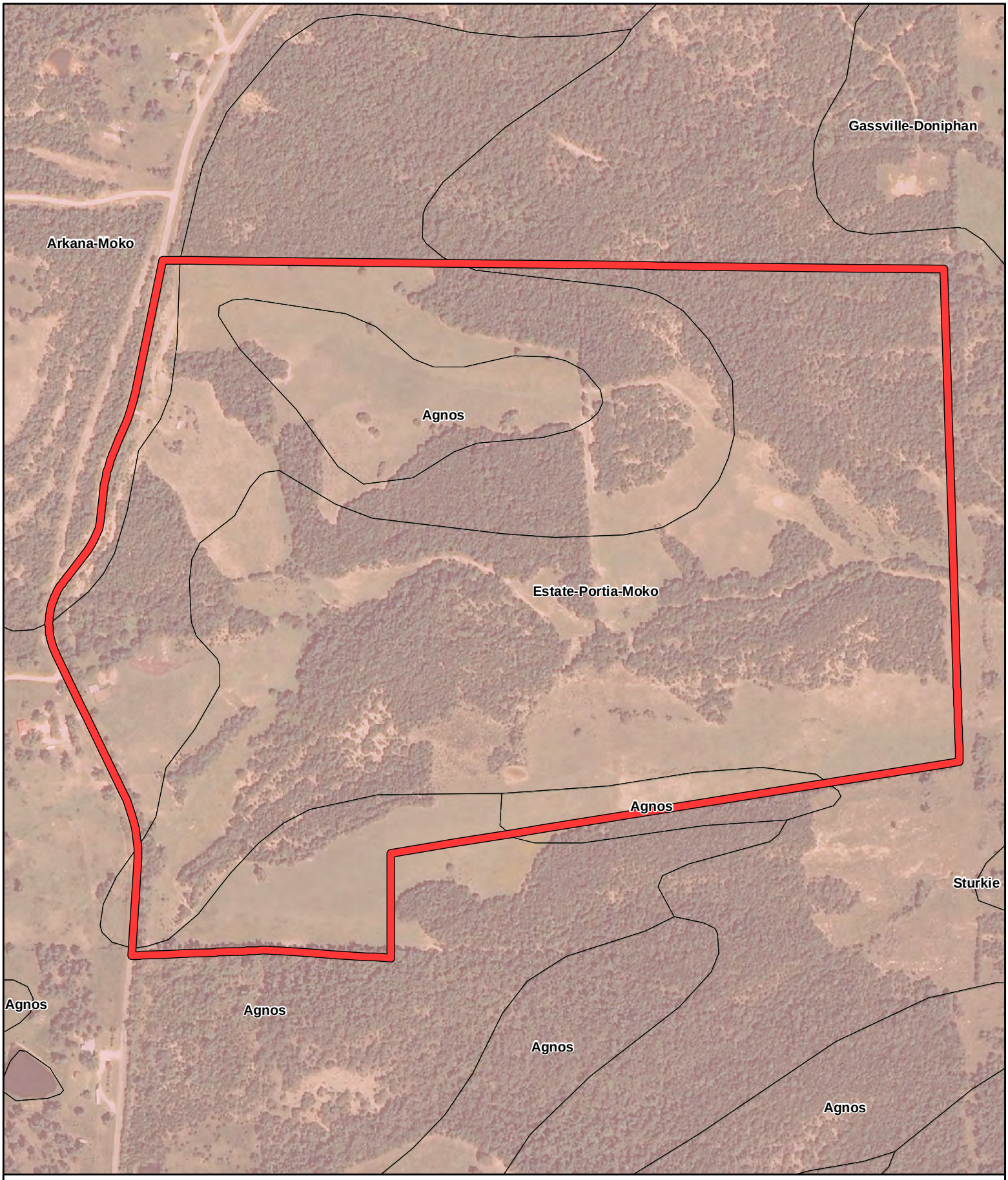
Feet

AHTD - Environmental GIS - Reed
March 16, 2016

Figure 6
Historic Imagery

Property Boundary

Photography Date: November 20, 1974



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0 250 500

Feet

AHTD - Environmental GIS - Reed
March 16, 2016

Figure 7
Soils

Property Boundary

Not Hydric

Photography: NAIP Summer 2013

Figure 8 Active cattle grazing on property (September 2015)

Figure 9 Seepage wetland (March 2016)

Figure 10 Degraded intermittent streams lacking riparian vegetation (March 2016)

Figure 11 Aggraded intermittent stream flowing through a pasture (March 2016)

Figure 12 Recently cleared riparian with debris piles in channel (March 2016)

Figure 13 Impoundment of seepage or spring (October 2015)

Figure 14 Incised stream with no riparian vegetation (March 2016)

Figure 15 Typical ephemeral preservation stream (March 2016)

Figure 16 Cedar encroached glades
(March 2016)

Figure 17 Strawberry River Darters
(March 2016)