ARKANSAS DEPARTMENT OF TRANSPORTATION
ARDOT.gov | IDriveArkansas.com | Scott E. Bennett, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261
Phone: 501.569.2000 | Voice/TTY 711 | Fax: 501.569.2400

June 20, 2018

Mr. Angel Correa
Division Administrator
Federal Highway Administration
700 West Capitol, Room 3130
Little Rock, Arkansas 72201-3298

Re: Job Number 040622
FAP Number STPR-0072(46)
Washington Co. Line – South
Strs. & Apprs. (S)
Route 59, Section 5
Bridge Numbers 02815, 02814,
02813, & 02621
Crawford County
Tier 3 Categorical Exclusion

Dear Mr. Correa:

The Environmental Division has reviewed the referenced project and it falls within the definition of the Tier 3 Categorical Exclusion as defined by the ARDOT/FHWA Memorandum of Agreement on the processing of Categorical Exclusions. The following information is included for your review and, if acceptable, approval as the environmental documentation for this project.

The purpose of this project is to replace three Structurally Deficient bridges and one Functionally Obsolete bridge on Highway 59 in Crawford County. Total length of the project is approximately 0.8 mile. A project location map is enclosed.

The existing roadway consists of two 10-foot wide paved travel lanes with 4-foot wide shoulders. Proposed roadway improvements include two 12-foot wide paved travel lanes with 8-feet wide paved shoulders. Approximately 4.6 acres of additional right of way and 1.3 acre temporary construction easements will be required for this project.

Following is a summary of the existing and proposed bridge information:

Bridge Number	Feature Spanned	Existing Structure Type/Rating	Proposed Structure	Maintenance of Traffic
02815 (Site 1)	Tributary of Mountain Fork Creek (Low Gap Hollow)	5-span reinforced concrete slabs on concrete column piers with spread footings/SD	3-span continuous composite pre-stressed concrete girder on steel trestle pile end bents and multi-column intermediate bents with spread footings	Detour bridge located approx. 50 feet downstream
02814 (Site 2)	Mountain Fork Creek	6-span reinforced concrete slabs on concrete column piers with spread footings/FO	Same as Site 1	New bridge constructed approx. 50 feet downstream
02813 (Site 3)	Whitzen Hollow Creek	6-span reinforced concrete slabs on concrete column piers with spread footings/SD	Same as Site 1	Detour bridge located approx. 50 feet upstream
02621 (Site 4)	Huey Creek	4-span concrete deck and steel I-beams on vertical wall abutments and concrete wall piers with spread footings/SD	Same as Site 1	Detour bridge located approx. 50 feet upstream

Design data for this project is as follows:

Design Year	Average Daily Traffic	Percent Trucks	Design Speed
2020	2,000	22	Site 1: 40 mph Sites 2-4: 50 mph
2040	2,400	22	

There are no relocations, wetlands, cultural resources, public water supplies, environmental justice issues, or known hazardous materials associated with this project. Approximately 4.45 acres of Prime Farmland and 0.01 acre Farmland of Statewide Importance will be converted to highway right of way. Form NRCS-CPA-106 is enclosed.

Noise predictions have been made for this project utilizing the Federal Highway Administration's TNM 2.5 (Traffic Noise Model) procedures. These procedures indicate that noise levels are below the FHWA noise criteria beyond the project's proposed right of way limits and no sensitive receptors are currently impacted. Any increases in roadway noise levels will not be the result of the proposed project, but instead a result of traffic volume increases during the planning period (Year 2040). Therefore, any noise level increases will occur independently of this proposed project, and no project related noise impacts are anticipated. In compliance with Federal guidelines, local authorities will not require notification.

The official protected species list obtained through the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation website identified the threatened northern long-eared bat (*Myotis septentrionalis*), the endangered Ozark big-eared bat (*Corynorhinus townsendii ingens*), the endangered gray bat (*Myotis grisescens*), the endangered Indiana bat (*Myotis sodalis*), the threatened Missouri bladderpod (*Physaria filiformis*), the threatened Ozark cavefish (*Troglichthys rosae*), the threatened Piping Plover (*Charadrius melodus*) and the endangered American burying beetle (*Nicrophorus americanus*) as having the potential to occur in the project area. A "may affect, but not likely to adversely affect" determination was made for the gray bat, Ozark big-eared bat and northern long-eared bat. A "likely to adversely affect" determination was made for the Indiana bat. A "no effect" determination was made for the remainder of the federally listed species, as there is no suitable habitat in the project area. The Biological Evaluation, USFWS concurrence letter, official species list, and associated documents, are enclosed.

The Final 4(d) Rule and the Programmatic Biological Opinion (BO) applies to this project and its activities that have the potential to affect northern long-eared bats and Indiana bats, respectively. The northern long-eared bat is exempted from any take resulting from this project under the Final 4(d) Rule. The proposed project will remove 11.5 acres of suitable Indiana bat habitat, and ARDOT will provide 17.25 acres (a ratio

of 1.5:1) of forested habitat preservation at the ARDOT Kings River Falls Conservation Bank. Due to the project activities potentially affecting the federally listed bat species, all tree clearing will be restricted to the winter hibernation period of November 16 to March 31. All construction activities must cease 30 minutes prior to sunset and 30 minutes prior to sunrise to avoid impacts to foraging bats.

Approximately 225 linear feet of a perennial stream, Mountain Fork Creek and 145 linear feet of a perennial stream, a tributary to Mountain Fork Creek, will be impacted at Site 1. Approximately 173 linear feet of Mountain Fork Creek, a perennial stream, will be impacted at Site 2. Approximately 151 linear feet of Whitzen Hollow Creek, a perennial stream, will be impacted at Site 3. Approximately 187 linear feet of Huey Creek, a perennial stream, will be impacted at Site 4. Construction of the proposed project should be allowed under the terms of a Section 404 Nationwide Permit 14 for Linear Transportation Projects as defined in the Federal Register 82(4):1860:2008.

The proposed project will require approximately 0.03 acre of right of way and 0.29 acre of temporary construction easements at Site 3 from the U.S. Forest Service, Ozark-St. Francis National Forests, a NEPA Cooperating Agency on the proposed project. Native vegetation will be planted on all Federal property.

Crawford County participates in the National Flood Insurance Program. The project lies within the Zone A, Special Flood Hazard Area. The final project design will be reviewed to confirm that the design is adequate and that the potential risk to life and property are minimized. Adjacent properties should not be impacted nor have a greater flood risk than existed before construction of the project. None of the encroachments will constitute a significant floodplain encroachment or a significant risk to property or life.

If you have any questions, please contact the Environmental Division at 569-2281.

APPROVED
Environmental Specialist
Federal Highway Administration
Date: 6/21/2018

Sincerely,

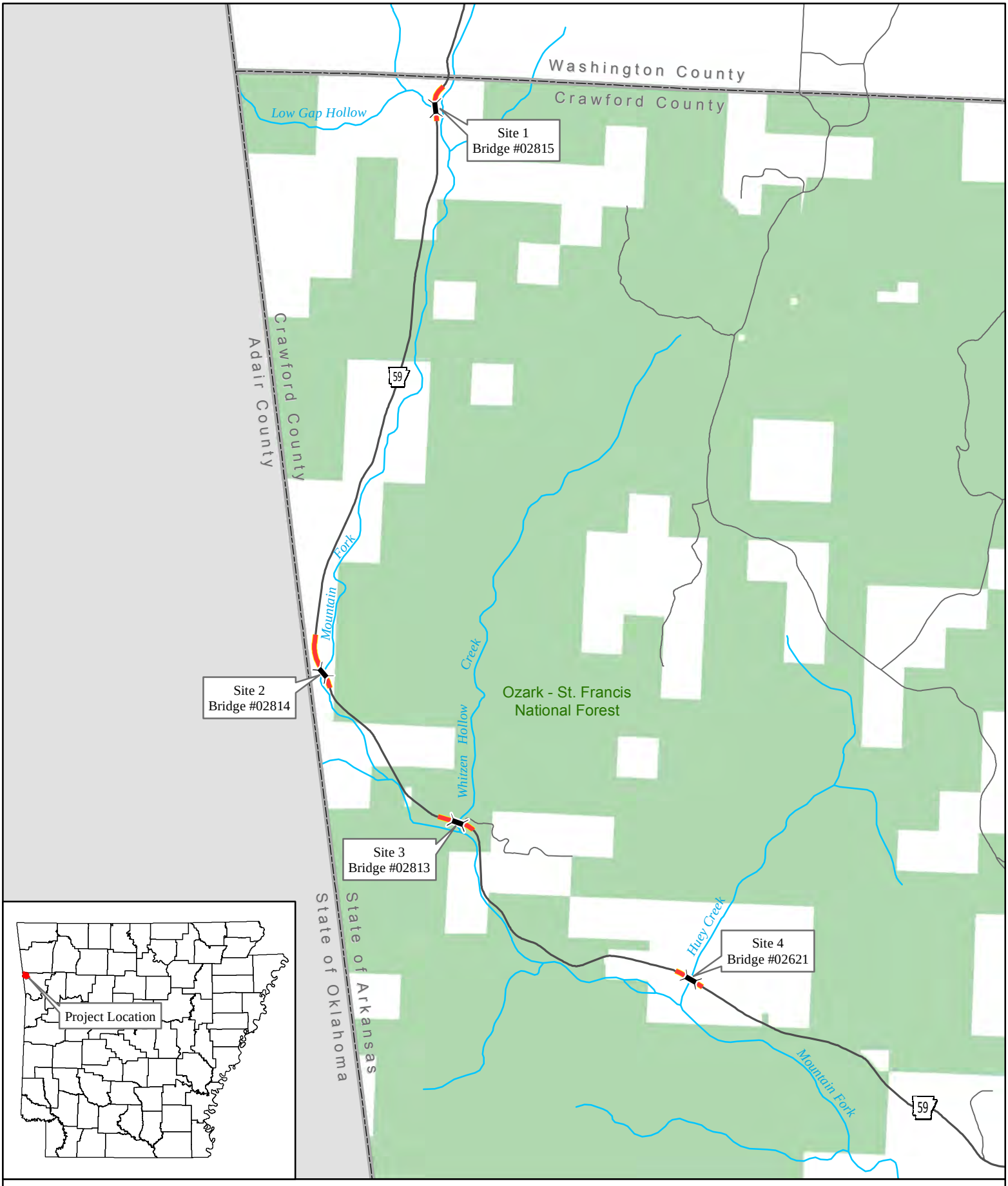
John Fleming

John Fleming
Division Head
Environmental Division

Enclosures

JF:SS:fc

c: Program Management
Right of Way
Roadway Design
District 4
Master File


Washington County
Crawford County
Low Gap Hollow
Site 1
Bridge #02815
Crawford County
Adair County
59
Mountain Fork
Site 2
Bridge #02814
Creek
Whitzen Hollow
Ozark - St. Francis
National Forest
Site 3
Bridge #02813
State of Oklahoma
State of Arkansas
Huey Creek
Site 4
Bridge #02621
Mountain Fork
59
Project Location
N
0
2,000
4,000
Feet
ARDOT - Environmental GIS - Strawn
March 27, 2018
Job 040622
Washington Co. Line - South
Strs. & Apprs. (Hwy. 59)
Crawford County
Project Location

THE DEPARTMENT OF ARKANSAS
HERITAGE

Asa Hutchinson
Governor

Stacy Hurst
Director

Arkansas Arts Council

Arkansas Natural Heritage Commission

Arkansas State Archives

Delta Cultural Center

Historic Arkansas Museum

Mosaic Templars Cultural Center

Old State House Museum

ARKANSAS HISTORIC PRESERVATION PROGRAM

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Little Rock, AR 72201

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e-mail:
info@arkansaspreservation.org
website:
www.arkansaspreservation.com

An Equal Opportunity Employer

June 14, 2018

Mr. John Fleming
Division Head
Environmental Division
Arkansas Department of Transportation
P.O. Box 2261
Little Rock, AR 72203-2261

RE: Crawford County – General
Section 106 Review – FHWA
Report Titled: *A Cultural Resources Survey of ArDOT Job Number 040622 Washington County Line-South Strs. & Apprs. Crawford County, Arkansas*
ArDOT Job Number: 040622
AHPP Tracking Number: 84293.01

Dear Mr. Fleming:

The staff of the Arkansas Historic Preservation Program has reviewed the above-referenced Phase I cultural resources report. Based on the information presented in this report, we concur that the proposed undertaking will have no effect on historic properties.

Tribes that have expressed an interest in the area include the Cherokee Nation (Ms. Elizabeth Toombs), the Chickasaw Nation (Ms. Karen Brunso), the Choctaw Nation of Oklahoma (Dr. Ian Thompson), the Osage Nation (Dr. Andrea Hunter), the Quapaw Tribe of Oklahoma (Mr. Everett Bandy), the Shawnee Tribe of Oklahoma (Ms. Kim Jumper), and the United Keetoowah Band of Cherokee Indians (Ms. Sheila Bird). We recommend that they be consulted in accordance with 36 CFR § 800.2 (c) (2).

Thank you for the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, please call Tim Dodson of my staff at 501-324-9784.

Sincerely,

Scott Kaufman
Director, AHPP

cc: Mr. Randall Looney, Federal Highway Administration
Dr. Ann Early, Arkansas Archeological Survey

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Federal Agency) Job 040622	3. Date of Land Evaluation Request 3/27/18	4. Sheet 1 of
1. Name of Project Washington Co. Line - South Strs. & Apprs.	5. Federal Agency Involved FHWA	
2. Type of Project Bridge Replacement	6. County and State Crawford AR.	
PART II (To be completed by NRCS)	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form) YES NO		4. Acres Irrigated / Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor				
PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	4.45			
B. Total Acres Statewide And Local Important Farmland	.01			
C Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)				
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c)) / **Maximum Points**				
1. Area in Nonurban Use — 15	15			
2. Perimeter in Nonurban Use — 10	10			
3. Percent Of Corridor Being Farmed — 20	5			
4. Protection Provided By State And Local Government — 20	0			
5. Size of Present Farm Unit Compared To Average — 10	0			
6. Creation Of Nonfarmable Farmland — 25	0			
7. Availability Of Farm Support Services — 5	5			
8. On-Farm Investments — 20	0			
9. Effects Of Conversion On Farm Support Services — 25	0			
10. Compatibility With Existing Agricultural Use — 10	0			
TOTAL CORRIDOR ASSESSMENT POINTS — 160	35			
PART VII (To be completed by Federal Agency)				
Relative Value Of Farmland (From Part V) — 100	100			
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	35			
TOTAL POINTS (Total of above 2 lines) — 260	135			

1. Corridor Selected: New Location Adjacent to existing	2. Total Acres of Farmlands to be Converted by Project: 4.45 acres of Prime Farmland .01 Farmland of Statewide Importance	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: DATE 6/20/18

NOTE: Complete a form for each segment with more than one Alternate Corridor

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arkansas Ecological Service Field Office
110 South Amity Road, Suite 300
Conway, Arkansas 72032

IN REPLY REFER TO:

October 31, 2017

Mr. John Fleming
c/o Kayti Ewing
Arkansas Department of Transportation
10324 Interstate 30
Little Rock, Arkansas 72209

Consultation Code: 04ER1000-2017-SLI-1381

Dear Mr. Fleming,

The U. S. Fish and Wildlife Service (Service) has reviewed your assessment and determinations for Arkansas Department of Transportation (ArDOT) plans to replace four bridges along a seven (7) mile stretch of Highway 59 in Crawford County, Arkansas. This action may rely on the December 15, 2016, Programmatic Biological Opinion (BO) for federally funded or approved transportation projects that may affect the Indiana Bat (*Myotis sodalis*) and/or Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*). We received your request and the associated Project Submittal Form on October 20, 2017. The project was described and assessed as follows (abbreviated):

> The existing roadway consists of two 12' wide paved travel lanes with no shoulders. Proposed improvements include replacing 4 bridges—one across Low Gap Hollow Creek (Site 1, Bridge# 2815), one across Mountain Fork Creek (Site 2, Bridge# 2814), one across Whizzen Hollow Creek (Site 3, Bridge# 2813), and one across Huey Creek (Site 4, Bridge# 2621)—along Highway 59.
>
> The replacement of three out of the four bridges (Sites 1, 3, and 4; Bridges 2815, 2813, and 2621) along Highway 59 will require temporary detours, as those bridges will be replaced on existing location. Site 1, Bridge# 2815 will have a temporary detour to the east of the existing bridge and Highway 59. At Site 1, approximately 3.6 acres of forested habitat will be cleared for construction of detour. Site 3, Bridge# 2813 is located within the Ozark National Forest and will have a temporary detour to the north of the existing bridge, east side of Highway 59. At Site 3, approximately 2.1 acres of forested habitat will be cleared for construction of detour. Site 4, Bridge# 2621 will have a temporary detour northeast of the existing bridge, east side Highway 59. At Site 4, approximately 2.2 acres of forested habitat will be cleared for construction of detour. Site 2, Bridge# 2814 will be replaced on new location, just southwest of the existing bridge and west of Highway 59. At Site 2, approximately 3.6 acres of forested habitat will be cleared for bridge construction.

According to the Information for Planning and Consultation (IPaC) website, there are eight (8) endangered species that have the potential to be impacted by the project. These species include: the endangered Gray Bat (*Myotis grisescens*), the threatened Northern Long-eared Bat (*Myotis septentrionalis*), the endangered Indiana Bat (*Myotis sodalis*), the endangered Ozark Big-eared Bat (*Corynorhinus townsendii ingens*), the threatened Missouri Bladderpod (*Physaria filiformis*), the threatened Ozark Cavefish (*Troglichthys rosae*), the threatened Piping Plover (*Charadrius melodus*), and the endangered American Burying Beetle (*Nicrophorus americanus*).

Arkansas Natural Heritage Commission's (ANHC) records database indicates several known roost cave locations for the Ozark Big-eared Bat near the project area. The closest recorded occurrence is an Ozark Big-eared Bat roost cave approximately 900 feet southeast of Site 1, Bridge 2815 over Low Gap Hollow Creek. There are two other nearby occurrences of Ozark Big-eared Bat roost caves, approximately 0.4 mile northeast and 0.9 mile south of Site 1. There are additional known records of Ozark Big-eared Bat roost caves, 1.2 and 1.5 miles north of Site 1 in caves: WA3301, WA3302, WA3311, and Garrett Hollow Cave, all in Washington County. Another known Ozark Big-eared Bat roost cave is located approximately 1.5 miles northeast of Site 2. The Ozark Plateau National Wildlife Refuge, located in Adair County Oklahoma, has known hibernacula for the Ozark Big-eared Bat, approximately 3 miles west of the project area.

Ozark Big-eared Bats inhabit caves year round, which are typically located in oak-hickory forests. Weyandt et al. (2005) and Graening et al. (2011) suggest that Ozark Big-eared Bats could also use bluff faces and bluff lines as roosting habitat, and these types of habitat could potentially garner additional populations. During the summer months, Ozark Big-eared Bats primarily forage in forests and along forest edges. Ozark Big-eared Bats typically only forage a little over one mile from their roosting site (Graening et al. 2011). Although, a couple of studies tracked the movement of the Ozark Big-eared Bats and found the longest distances traveled in a 24 hour period were up to 5.0 miles (Graening et al. 2011; Wethington et al. 1996). ArDOT will include a special provision requiring that construction activities not occur 30 minutes prior to sunset and 30 minutes prior to sunrise. ArDOT is anticipating that the bridges will be multi-column concrete bents on a spread-footing, so no blasting or drilling will be required during bridge construction. Based on the winter clearing and day time construction special provisions that will be included on this job, it is our determination that the project **"may affect, not likely to adversely affect"** Ozark Big-eared Bats.

Crawford County is within the known range of the federally threatened Northern Long-eared Bat. The project and its activities do not occur within 0.25 mile of a known hibernaculum or within 150 feet of a known occupied maternity roost,

which exempts the project from incidental take of Northern Long-eared Bats, according to the final 4(d) rule and accompanying programmatic biological opinion. The project will have a winter clearing only restriction included in the job, which prohibits tree clearing during April 1 to October 1. **(A Final 4(d) form and Bridge Assessment form for each site and the Project Submittal form were attached)**.

A summer mist net survey was conducted in July of 2017, for a slide repair project on Highway 59 in Washington County, a mist net site was setup approximately 0.1 mile north of Site 1. Results from this survey confirmed the presence of Ozark Big-eared Bats and Northern Long-eared Bats, as both species were captured at mist net survey locations 35°45'38.9", -94°28'11.2" and 35°45'35.9", -94°28'10.8", respectively. This survey also identified seven (7) Northern Long-eared Bat diurnal roost trees; the closest known roost tree is in Washington County, approximately 715 feet north of the Site 1. No Indiana Bats or Gray Bats were captured during this survey. A bridge assessment was conducted on 9/28/2016 for all four bridges, and no evidence of bat use was found.

Gray Bats are year-round cave dwellers. They hibernate in deep, vertical caves in winter and roost in limestone karst caves along rivers in summer months. The closest known occurrence is a roost cave in Franklin County, approximately 30 miles east of the project area that support Gray Bats. Although the project area is largely forested and contains habitat that is suitable for foraging, a winter clearing only restriction, as well as a day time construction only special provision will be included in the job. Furthermore, during a recent summer mist net survey (July 2017) nearby, no Gray Bats were captured or recorded acoustically. Therefore, it is our determination that the project **"may affect, not likely to adversely affect"** Gray Bats.

Indiana Bats are known to roost underneath the peeling bark of dead or dying trees in intact forests within medium river and stream corridors and forests within 1 to 3 miles of small to medium rivers and streams and upland forests. Indiana Bats hibernate in caves during winter. The closest known occurrence is approximately 12 to 13 miles northeast, east of the project area, in Devil's Den State Park. Although the project area is within the Indiana Bats' range, is forested, and habitat that is suitable for foraging, a winter clearing only restriction, as well as a day time construction only special provision will be included in the job. Furthermore, during a recent summer mist survey (July 2017) nearby, no Indiana Bats were captured or recorded acoustically. Therefore, it is our determination that the project is **"likely to adversely affect"** Indiana Bats. (Bridge Assessment forms for each site and the Project Submittal form for the Programmatic Biological Opinion were attached).

The Missouri Bladderpod is found on open limestone, dolomite, sandstone, shale glades, barrens, and outcrops within prairies. There are no known occurrences or habitat near the project area; therefore, it is our determination that the project will have **"no effect"** on the Missouri Bladderpod.

The Ozark Cavefish lives in cave streams and springs. The Ozark Cavefish is found within the Springfield Plateau of the Ozark Highlands in Arkansas, Missouri, and Oklahoma. The Ozark Cavefish is known from a few caves in Washington County. Major threats to the Ozark Cavefish include groundwater pollution and destruction and disturbance of habitat (i.e., caves). There are known occurrences in close proximity to the project area. There are no known caves that support the Ozark Cavefish nearby; therefore, it is our determination that the project will have **"no effect"** on the Ozark Cavefish.

The proposed project is outside of the American Burying Beetle consultation area; therefore, it is our determination that the project will have **"no effect"** on American Burying Beetle.

The Piping Plover is a migratory bird. In the spring and summer, they breed in the northern United States and Canada. Piping Plovers use wide, flat, open, sandy beaches with very little vegetation; nesting habitat often includes small creeks or wetlands. In the fall, plovers migrate south and winter along the coast of the Gulf of Mexico and other southern locations. During fall and spring migration, Piping Plovers use rest sites including shorelines of lakes, rivers, and wetlands with muddy sandy substrates. Migration rest area habitat is not well documented, but migrating Piping Plovers have been observed in Arkansas, mostly along the Arkansas River; however, the project area is devoid of such habitat (i.e., large rivers); therefore, it is our determination that the project will have **"no effect"** on the Piping Plover.

This letter provides the Service's response as to whether the Project may rely on the BO to comply with Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) for its effects to the Indiana Bat and/or NLEB. This letter also responds to your request for Service concurrence that the Project may affect, but is not likely to adversely affect (NLAA) ESA-listed species and/or designated critical habitats other than the Indiana Bat and NLEB.

The ArDot has determined that the Project is likely to adversely affect (LAA) the Indiana Bat. Additionally, the Arkansas Department of Transportation has also determined that the Project is not likely to adversely affect (NLAA) Gray Bat and Ozark Big-eared Bat.

The Service concurs with these determination(s), because of the results of the survey and the proximity of known species sites and foraging range to the project location and the occurrence of

suitable foraging habitat for these species that exists on and adjacent to the site. A determination of LAA for Indiana Bat is appropriate based on the amount and distance from the existing roadway of suitable habitat being lost, the conservation measures being proposed, winter clearing (non-reproductive season) only provisions, and the proposed implementation of all required AMMs. Furthermore, the distance to known Gray Bat roosting and hibernacula sites, time of day restrictions, winter clearing only, off-site restraining conditions, and standard sediment controls, warrants a NLAA determination for these species. This concurrence concludes your ESA Section 7 responsibilities relative to Indiana Bat, Gray Bat, and Ozark Big-eared Bat for this Project, subject to the Reinitiation Notice below.

Conclusion

The Service has reviewed the effects of the proposed Project, which includes the ArDOT's commitment to implement any applicable mitigation measures as indicated on the Project Submittal Form. We confirm that the proposed Project's effects are consistent with those analyzed in the BO. The Service has determined that projects consistent with the conservation measures and scope of the program analyzed in the BO are not likely to jeopardize the continued existence of the Indiana Bat and/or the NLEB. In coordination with your agency and the other sponsoring Federal Transportation Agencies, the Service will reevaluate this conclusion annually in light of any new pertinent information under the adaptive management provisions of the BO.

Incidental Take

Indiana Bat

The Service anticipates that tree removal associated with the proposed Project will cause incidental take of Indiana Bats. As described in the Incidental Take Statement (ITS) of the BO, such taking will be difficult to detect. The Service determined that it is appropriate to measure the amount or extent of incidental take resulting from BO projects using the proposed acreage of tree removal from Indiana Bat suitable habitat as a surrogate for the numbers of individuals taken.

The proposed Project will remove 11.5 acres of trees from habitat that is suitable for the Indiana Bat. All tree removal will occur in winter and comply with all other conservation measures in the BO. Based on the BO, 11.5 acres are anticipated to result in adverse effects and the ArDot will provide 17.25 acres (ratio 1.5/1) of forested habitat preservation at the ArDOT King River Falls Site near Witter, Madison County, Arkansas.

In addition, the Project may take up to 5 Indiana Bats that were not detected during bridge bat assessments conducted prior to implementing the proposed work on Bridge# 2815, Bridge# 2814, Bridge# 2813, and Bridge# 2621. Although such take is reasonably certain to occur at up to 10 bridge projects per year, as included in the scope of the BO, it is a remote possibility for any individual project that is implemented consistent with the conservation measures of the BO.

The Service will add the acreage of Project-related tree removal to the annual total acreage attributed to the BO as a surrogate measure of Indiana Bat take and exempted from the prohibitions against incidental taking. Such exemption is effective as long as your agency implements the reasonable and prudent measure (RPM) and accompanying terms and conditions of the BO's ITS.

The sole RPM of the BO's ITS requires the Federal Transportation Agencies to ensure that state/local transportation agencies, who choose to include eligible projects under the programmatic action, incorporate all applicable conservation measures in the project proposals submitted to the Service for ESA section 7 compliance using the BO. The implementing terms and conditions for this RPM require the Federal Transportation Agencies to offer training to appropriate personnel about using the BO, and about promptly reporting sick, injured, or dead bats (regardless of species) (or any other federally listed species) located in project action areas.

Northern Long-eared Bat

The Service anticipates that tree removal associated with the proposed Project will cause incidental take of NLEBs. However, the Project is consistent with the BO, and such projects will not cause take of NLEB that is prohibited under the ESA section 4(d) rule for this species (50 CFR §17.40(o)). Therefore, the take of NLEBs resulting from this project does not require exemption from the Service.

Reporting Dead or Injured Bats

The Arkansas Department of Transportation, its state/local cooperators, and any contractors must take care when handling dead or injured Gray Bats, Indiana Bats, and/or NLEBs, or any other federally listed species that are found at the Project site to preserve biological material in the best possible condition and to protect the handler from exposure to diseases, such as rabies. Project personnel are responsible for ensuring that any evidence about determining the cause of death or injury is not unnecessarily disturbed. Reporting the discovery of dead or injured listed species is required in all cases to enable the Service to determine whether the level of incidental take exempted by this BO is exceeded, and to ensure that the terms and conditions are appropriate and effective. Parties finding a dead, injured, or sick specimen of any endangered or threatened species must promptly notify this Service Office.

Reinitiation Notice

This letter concludes consultation for the proposed Project, which qualifies for inclusion in the BO issued to the Federal Transportation Agencies. To maintain this inclusion, a reinitiation of this Project-level consultation is required where the Arkansas Department of Transportation's discretionary involvement or control over the Project has been retained (or is authorized by law) and if:

1. the amount or extent of incidental take of Indiana Bat is exceeded;

2. new information reveals that the Project may affect listed species or critical habitat in a manner or to an extent not considered in the BO or in the Project information that supported Service concurrence with the NLAA determination;

3. the Project is subsequently modified in a manner that causes an effect to listed species or designated critical habitat not considered in the BO or in the Project information that supported Service concurrence with NLAA determination; or

4. a new species is listed or critical habitat designated that the Project may affect.

Per condition #1 above, the anticipated incidental take is exceeded when:

- the Project removes trees from more than 11.5 acres of habitat suitable for the Indiana Bat; or

- the Project takes more than 5 Indiana Bats resulting from work on bridges associated with the action.

In instances where the amount or extent of incidental take is exceeded, the Arkansas Department of Transportation is required to immediately request a reinitiation of formal consultation. Please note that the Service cannot exempt from the applicable ESA prohibitions any action-caused take that exceeds the amount or extent specified in the ITS of this BO that may occur before the reinitiated consultation is concluded.

We appreciate your continued efforts to ensure that this Project is fully consistent with all applicable provisions of the BO. If you have any questions regarding our response or if you need additional information, please contact Lindsey Lewis at (501) 513-4489 or lindsey_lewis@fws.gov

Sincerely,

Melvin L. Tobin
Field Supervisor

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480
http://www.fws.gov/arkansas-es

In Reply Refer To: September 28, 2017
Consultation Code: 04ER1000-2017-SLI-1381
Event Code: 04ER1000-2017-E-01993
Project Name: 040622 Washington Co. Line-South Strs. & Apprs. (S)

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

To Whom It May Concern:

The enclosed species list identifies endangered, threatened, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). **This letter only provides an official species list and technical assistance; if you determine that listed species and/or designated critical habitat may be affected in any way by the proposed project, even if the effect is wholly beneficial, consultation with the Service will be necessary.**

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found on our website.

Please visit our website at http://www.fws.gov/arkansas-es/IPaC/home.html for species-specific guidance to avoid and minimize adverse effects to federally endangered, threatened, proposed, and candidate species. Our web site also contains additional information on species life history and habitat requirements that may be useful in project planning.

If your project involves in-stream construction activities, oil and natural gas infrastructure, road construction, transmission lines, or communication towers, please review our project

specific guidance at http://www.fws.gov/arkansas-es/IPaC/ProjSpec.html.

The karst region of Arkansas is a unique region that covers the **northern third of Arkansas** and we have specific guidance to conserve sensitive cave-obligate and bat species. **Please visit http://www.fws.gov/arkansas-es/IPaC/Karst.html to determine if your project occurs in the karst region and to view karst specific-guidance.** Proper implementation and maintenance of best management practices specified in these guidance documents is necessary to avoid adverse effects to federally protected species and often avoids the more lengthy formal consultation process.

If your species list includes any mussels, Northern Long-eared Bat, Indiana Bat, Yellowcheek Darter, Red-cockaded Woodpecker, or American Burying Beetle, your project may require a presence/absence and/or habitat survey prior to commencing project activities. Please check the appropriate species-specific guidance on our website to determine if your project requires a survey. We strongly recommend that you contact the appropriate staff species lead biologist (see office directory or species page) prior to conducting presence/absence surveys to ensure the appropriate level of effort and methodology.

Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make “no effect” determinations. If you determine that your proposed action will have “no effect” on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take “after-the-fact.” For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

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

implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

Project Summary

Consultation Code: 04ER1000-2017-SLI-1381

Event Code: 04ER1000-2017-E-01993

Project Name: 040622 Washington Co. Line-South Strs. & Apprs. (S)

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: The Arkansas Department of Transportation (ArDOT) plans to replace four bridges along a seven (7) mile stretch of Highway 59 in Crawford County. Three of the bridges will be replaced on existing with a detour, and one bridge, over the Mountain Fork, will be replaced on new location. One of the bridges, over Whizzen Hollow Creek, is located within the Ozark National Forest.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.71855755140008N94.48074103922644W

Counties: Crawford, AR | Washington, AR

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final designated** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat *Corynorhinus (=Plecotus) townsendii ingens* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: except Great Lakes watershed There is **final designated** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened

Fishes

NAME	STATUS
Ozark Cavefish *Amblyopsis rosae*	Threatened

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/6490

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus*	Endangered

Population: Wherever found, except where listed as an experimental population
No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/66

Flowering Plants

NAME	STATUS
Missouri Bladderpod *Physaria filiformis*	Threatened

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/5361

Critical habitats

There are no critical habitats within your project area under this office's jurisdiction.

Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Administration (FTA)

Range-wide Programmatic Consultation for
Indiana Bat and Northern Long-eared Bat

Project Submittal Form

Updated December 2016

If not using the Assisted Determination Key in the U.S. Fish and Wildlife Service (Service) Information for Planning and Conservation (IPaC) System, transportation agencies must provide this submittal form (or a comparable Service approved form) with provide project-level information for use of the range-wide programmatic consultation covering actions that may affect the Indiana bat and/or northern long-eared bat (NLEB). The completed form should be submitted to the appropriate Service Field Office prior to project commencement. For more information, see the Standard Operating Procedure for Site Specific Project(s) Submission in the User's Guide.

By submitting this form, the transportation agency ensures that the proposed project(s) adhere to the criteria and conditions of the range-wide programmatic consultation, as outlined in the biological assessment (BA) and biological opinion (BO). Upon submittal of this form, the appropriate Service Field Office may review the project-specific information provided and request additional information. For projects that may affect, but are not likely to adversely affect (NLAA) the Indiana bat and/or NLEB, if the applying transportation agency is **not** contacted by the Service with any questions or concerns within 14 calendar days of form submittal, it may proceed under the range-wide programmatic consultation and assume concurrence of the NLAA determination made by the Service in the BO. For projects that may affect, and are likely to adversely affect (LAA) the Indiana bat and/or the NLEB, the appropriate Service Field Office will respond (see recommended response letter template) within 30 calendar days of receiving a complete project-level submission, which includes, but may not be limited to this completed form.

Further instructions on completing the submittal form can be found by hovering your cursor over each text box.

---

1. Date: 10/20/2017

2. Lead agency: FHWA
   This refers to the Federal governmental lead action agency initiating consultation; select FHWA, FRA or FTA as appropriate.

3. Requesting agency: ArDOT
   This refers to the transportation agency completing the form (it may or may not be the same as the Lead Agency.

   Name: Kayti Ewing

   Title: Botanist

Phone: 501-569-2083

Email: anne.ewing@ardot.gov

4. Consultation code[1]: 04ER1000-2017-SLI-1381

5. Project name(s): 040622 Washington Co Line-South Strs. & Apprs. (S)

6. Project description:
Please attach additional documentation or explanatory text if necessary

The Arkansas Department of Transportation (ArDOT) plans to replace four bridges along a seven (7) mile stretch of Highway 59 in Crawford County. Three of the bridges will be replaced on existing with a detour, and one bridge, over the Mountain Fork, will be replaced on new location. One of the bridges, over Whizzen Hollow Creek, is located within the Ozark National Forest. At Site 1, approximately 3.6 acres of forested habitat will be cleared for the temporary detour. At Site 2, approximately 3.6 acres of forested habitat will be cleared for the temporary detour. At Site 3, approximately 2.1 acres of forested habitat will be cleared for the temporary detour. At Site 4, approximately 2.2 acres of forested habitat will be cleared for the temporary detour. A total of 11.5 acres of forested habitat will be cleared for the replacement of four bridges along Highway 59 in Crawford County.

7. Project location (county, state): Crawford County, Arkansas
If not delineated in IPaC, attach shape files

8. For species other than Indiana bat and NLEB (from IPaC official species list):

☐ No effect – project(s) are inside the range, but no suitable habitat (see additional information attached).

☑ May affect – see additional information provided for those species (see attached or forthcoming).

Please confirm and identify how the proposed project(s) adhere to the criteria of the BO by completing the following (see User Guide Section 2.0):

[1] Available through IPaC System Official Species List: https://ecos.fws.gov/ipac/

NO EFFECT

9. For Indiana bat/NLEB, if applicable, select your no effect determination:

☐ No effect – project(s) are outside the species' range. *submittal form complete*

☐ No effect – project(s) are inside the species range with no suitable summer habitat; project(s) must also be greater than 0.5 miles from any hibernaculum unless meeting exceptions listed below. *submittal form complete*

☐ No effect – project(s) do not involve any construction activities (e.g., bridge/ abandoned structure assessments, property inspections, planning and technical studies, property sales, property easements, and equipment purchases). *submittal form complete*

☐ No effect – project(s) are completely within existing road/rail surface and do not involve percussive or other activities that increase noise above existing traffic/ background levels (e.g., road line painting). *submittal form complete*

☐ No effect - project(s) are outside suitable summer bat habitat and limited to the maintenance of existing facilities (e.g., rest areas, stormwater detention basins) with no new ground disturbance.

☐ No effect – project(s) includes maintenance, alteration, or removal of bridge(s)/ structure(s) and indicate(s) no signs of bats from results of a bridge/abandoned structure assessment. *submittal form complete*
Otherwise, please continue below.

MAY AFFECT, NOT LIKELY TO ADVERSELY EFFECT – W/O AMMS

10. For Indiana bat/NLEB, if applicable, select your may affect, NLAA determination (without implementation of AMMs):

☐ NLAA – project(s) are inside the species range and within suitable bat habitat, but **negative** bat presence/absence (P/A) surveys; must also be greater than 0.5 miles from any hibernaculum. *submittal form complete*

☐ NLAA – project(s) are within 300 feet of the existing road/rail surface and in area that contain suitable habitat (but no documented habitat) that do not involve tree removal, but include percussives or other activities that increase noise above existing traffic/background levels (must also be greater than 0.5 miles of a hibernaculum). *submittal form complete*

☐ NLAA – project(s) are limited to slash pile burning (must also be greater than 0.5 miles from any hibernaculum). *submittal form complete*

☐ NLAA – project(s) are limited to wetland or stream protection activities associated

with compensatory wetland mitigation that do not clear suitable habitat (must also be greater than 0.5 miles from any hibernaculum). *submittal form complete*

☐ NLAA – project(s) *anywhere*, including within 0.5 mile of hibernacula, with suitable summer bat habitat present that are limited to the maintenance of existing facilities (e.g., rest areas, stormwater detention basins) with no new ground disturbance or tree removal/trimming. *submittal form complete*

Otherwise, please continue below.

MAY EFFECT, NOT LIKELY TO ADVERSELY AFFECT – WITH AMMs

11. For Indiana bat/NLEB, if applicable, document your may affect, NLAA determination by completing the following section (**with implementation of AMMs**; use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

☑ Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum

☐ Verify that the project is within 100 feet of existing road/rail surfaces

☑ Verify that no documented Indiana bat and/or NLEB roosts and/or surrounding summer habitat within 0.25 mile of documented roosts will be impacted

Verify that all tree removal will occur outside the active season (i.e., will occur in winter)[2]: winter

Acres of trees proposed for removal: 11.5

b. Bridge/Structure Work Projects

Proposed work: Bridge Replacements (4 bridges to be replaced)

Timing of work: Inactive/Active Season

Evidence of bat activity on/in bridge/structure? Yes: ○ No: ◉

☐ Verify that work will be conducted outside the active season, or if during the active season, verify that no roosting bats will be harmed or disturbed in any way

☐ Verify that work will not alter roosting potential in any way

[2] Coordinate with the local Service Field Office for appropriate dates

☐ Verify that all applicable lighting minimization measures will be implemented

MAY AFFECT, LIKELY TO ADVERSELY AFFECT

12. For Indiana bat/NLEB, if applicable, document your may affect, LAA determination by completing the following section (use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

☑ Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum

Project Location:
☐ 0-100 feet from edge of existing road/rail surface
☑ 100-300 feet from edge of existing road/rail surface

☑ Verify that no documented Indiana bat roosts or surrounding summer habitat within 0.25 mile of documented roosts will be impacted between May 1 and July 31

☑ Verify that no documented NLEB roosts or surrounding summer habitat within 150 feet of documented roosts will be impacted between June 1 and July 31

Timing of tree removal: winter

Acres of trees proposed for removal: 11.5

b. Bridge/Structure Work Projects

Proposed work: Bridge Replacements (4 bridges to be replaced)

Timing of work: inactive/active season

☑ Verify no signs of a colony

☑ Verify that work will not alter roosting potential in any way

13. For Indiana bat/NLEB, **if applicable to the action type**, the following AMMs will be implemented[3] unless P/A surveys and/or bridge/abandoned structure assessments[4] have occurred to document that the species are not likely to be present:

General AMM 1 (required for all projects):

[3] See AMMs Fact Sheet (Appendix C) for more information on AMMs
[4] Structure assessment for occupied buildings means a cursory inspection for bat use. For abandoned buildings a more thorough evaluation is required (See User Guide Appendix D for bridge/abandoned structure assessment guidance).

☑ Tree Removal AMM 1
☑ Tree Removal AMM 2 (required for NLAA)
☑ Tree Removal AMM 3 (required for all projects)
☑ Tree Removal AMM 4 (required for NLAA)
☑ Tree Removal AMM 5 (required for LAA)
☑ Tree Removal AMM 6 (required for LAA)
☑ Tree Removal AMM 7 (required for LAA)

☐ Bridge AMM 1
☑ Bridge AMM 2 (required for all projects during active season)
☐ Bridge AMM 3 (required for NLAA during active season)
☐ Bridge AMM 4 (required for NLAA during active season)
☑ Bridge AMM 5 (required for all projects)

Structure AMMs are required for all Indiana bat projects, required for NLAA NLEB projects.

☐ Structure AMM 1
☐ Structure AMM 2
☐ Structure AMM 3
☐ Structure AMM 4

☐ Lighting AMM 1 (required for all projects during the active season)
☐ Lighting AMM 2 (required for all projects)

☑ Hibernacula AMM 1 (required for all projects)

14. For Indiana bat, if applicable, compensatory mitigation measures will also be required to offset adverse effects on the species (see Section 2.10 of the BA). Please verify the mechanism in which compensatory mitigation will be implemented and that sufficient information is provided to the Service.

Range-wide In-Lieu Fee Program, The Conservation Fund ☐

State, Regional, Recovery Unit-Specific In-Lieu Fee Program
Name:

Conservation Bank
Name:
Location:

Local Conservation Site(s)
Name: Kings River Falls
Location: Madison County; Witter, Arkansas
Description: Preservation of 17.25 acres (ratio 1.5/1)

BIOLOGICAL EVALUATION

for

Activities Related to

Job Number 040622
Washington Co. Line - South
Strs. and Apprs. (Hwy. 59)

Ozark-St. Francis National Forest
Boston Mountain Ranger District
Crawford County, Arkansas

by

Kayti Ewing
Botanist
Arkansas Department of Transportation
P.O. Box 2261
Little Rock, AR 72203
(501) 569-2281 (voice)
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February 2018

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PROJECT DESCRIPTION AND LOCATION

The Arkansas Department of Transportation (ARDOT) is proposing to replace four bridges along a seven (7) mile stretch of Highway 59 in Crawford County; one crossing an unnamed tributary to Mountain Fork Creek (Low Gap Hollow Creek) (Site 1, Bridge No. 2815), one crossing Mountain Fork Creek (Site 2, Bridge No. 2814), one crossing Whitzen Hollow Creek (Site, 3 Bridge No. 2813), and one crossing Huey Creek (Site 4, Bridge No. 2621), see Figure 1. Of these four bridges, only the bridge over Whitzen Hollow Creek (Site 3) is located within the Ozark-St. Francis National Forest (OSFNF); therefore, this Biological Evaluation (BE) will only consider Site 3. The project area includes Township 12 North, Range 33 West, Section 26 (Site 3). The project area lies in the Robert S. Kerr Reservoir Watershed (8-digit HUC 11110104) within the Robert S. Kerr Reservoir Basin (6-digit HUC 111101).

Proposed improvements at Whitzen Hollow Creek consist of replacing the existing 304' x 22' bridge with a 420' x 34' continuous W-beam unit and widening the travel lanes to 11' and adding 6' shoulders. Currently, the bridge has 10-foot travel lanes and no shoulders. The new bridge will be replaced on existing location, using a temporary detour bridge to maintain traffic during construction. The distance of the temporary detour bridge in relation to the existing and proposed bridge is approximately 30 feet upstream. See Figure 1 for proposed design.

A work road(s) may or may not be required for the construction of the detour bridge and the new bridge and the demolition of the current and detour bridges. Maintenance of traffic will utilize a detour bridge during construction, and once the detour bridge is open to traffic the existing bridge and its approaches will be demolished. When the new bridge becomes open to traffic, the detour bridge will be demolished.

All disturbed areas will be seeded in accordance with the ARDOT's Special Seeding Special Provision, which includes three native grasses and seven native wildflower species. A cover crop is also included to obtain vegetative coverage while the other native species become established.

PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed project is to replace four functionally obsolete bridges along Highway 59, over Low Gap Hollow Creek, Mountain Fork Creek, Whitzen Hollow Creek and Huey Creek. The Whitzen Hollow Creek Bridge is classified as structurally deficient due to exposed rebar and efflorescence on undersurface of deck, map cracking on asphalt, map cracking and spalling with heavy efflorescence at interior bents, and light abrasion with spalling at base of columns. In addition, this bridge has a narrow roadway width.

ALTERNATIVES CONSIDERED – NO ACTION

This alternative involves only maintenance activities on the structurally deficient Whitzen Hollow Creek Bridge. Maintenance activities may not be able to address all of the structural deficiencies and would not bring the bridge and approaches up to current design safety standards. No alternatives, other than the no build alternative, were considered.

PURPOSE AND NEED FOR THE BIOLOGICAL EVALUATION

This Biological Evaluation (BE) documents the potential effects of the proposed highway construction activities, including utility relocation and timber harvesting, on both known and potentially occuring populations and habitat of the OSFNF Proposed, Endangered, Threatened, and Sensitive species (PETS) (USDI FWS 1999). This BE was conducted in accordance with methods given in Forest Service Manual 2672.43 (USDA FS 2005c).

As part of the National Environmental Policy Act (NEPA) decision-making process, the BE provides a review of ARDOT's activities in sufficient detail to determine the potential affects of the proposed action on the listed PETS species. Objectives of the BE are as follows:

- to ensure that ARDOT's actions do not contribute to loss of viability of any native or desired non-native plant or animal species or contribute to trends toward Federal listing of any species.
- to comply with all requirements of the Endangered Species Act (ESA), that actions of federal agencies not put at risk or adversely modify critical habitat of federally listed species.
- to provide standardized procedures for evaluation of PETS species to ensure they receive full consideration in the decision-making process, so that no species is placed in jeopardy as a result of inadequate management actions.
- to adhere to the requirements of the Forest Service Manual 2672.43(USDA FS 2005c), which provides direction for the inventory of PETS species in preparation of site-specific BEs.
- to address any potential impacts from management activities and incorporate conservation measures related to known PETS habitat or potential habitat.

Only those PETS species known to occur or have suitable habitat in the action area will be considered in this BE, see ***Appendix A***.

ARDOT - Environmental GIS - Strawn
December 19, 2017

Figure 1
Job 040622
Washington Co. Line - South Strs. & Apprs.
(Hwy. 59)
Crawford County

PROPOSED MANAGEMENT ACTIONS

Proposed management actions include the use of Best Management Practices (BMPs) outlined in the National Pollution Discharge Elimination System (NPDES) and Section 404, Clean Water Act permits. These BMPs ensure that construction related activities associated with the project will not have detrimental effects on the water quality within the watershed.

INVENTORY HISTORY

This BE is based on Arkansas Natural Heritage Commission (ANHC) 2010 and 2016 records database, Information for Planning and Conservation (IPaC) system, OSFNF PETS checklist (2017) from the Boston Mountain Ranger District, NatureServe Explorer Data (2017), and literature as cited for the various listed species known to occur on the OSFNF. Biological surveys for PETS species and their habitats for the proposed project were conducted in September of 2016 by ARDOT Environmental personnel, Kayti Ewing. The results of the plant survey are included in ***Appendix B*** and results from a nearby bat survey can be found summarized below. Other pertinent literature and information concerning PETS populations and habitats are utilized as cited.

Based on the recommendation of the US Fish and Wildlife Service and the proximity of locality records of listed bat species a summer presence/absence survey was not conducted for the federally listed bats. A summer mist net bat survey was conducted from July 11-14, 2017 on another highway construction project just north of the Crawford and Washington County Line on Highway 59 in Washington County, Arkansas, approximately 5.0 miles north of the project area. A total of 10 bats representing 5 species were captured; including one federally endangered Ozark big-eared bat (*Corynorhinus townsendii ingens*), three federally listed threatened northern long-eared bats (*Myotis septentrionalis*), three evening bats (*Nycticeius humeralis*), two red bats (*Lasiurus borealis*), and one big-brown bat (*Eptesicus fuscus*) (ARDOT/HDR Survey 2017).

Summer mist net and supplementary acoustic surveys were conducted from June 10-13, 2015 on another highway construction project, approximately 8.5 miles east of the project area, along Highway 220 in Crawford County. A 4.5-mile stretch of Highway 220 from the Crawford and Washington County line south to Old Cove City Road was surveyed. A total of 17 bats representing three species were captured; including eight federally threatened northern long-eared bats (*Mytois septentrionalis*), six evening bats (*Nycticeius humeralis*), and three red bats (*Lasiurus borealis*) (ARDOT/MSS Survey 2015).

SPECIES CONSIDERED AND SPECIES EVALUATED

All PETS species will be evaluated and/or inventoried according to Forest Service Manual 2672.43 (USDA FS 2005c). All inventory and analysis for PETS species is based on “best available science.” ***Appendix A*** lists the OSFNF PETS species and indicates whether or not each is known to occur within the action area. The status of each species within the Boston Mountain Ranger District and within the action area is based on a literature review of known surveys and information. As expressed for each species listed in ***Appendix A***, additional surveys are not needed at this time to provide more definitive information to improve the determination of effects on the evaluated PETS species.

EVALUATED SPECIES SURVEY INFORMATION

Based on the ANHC 2010 and 2016 records database, IPaC, NatureServe Explorer Data (2017), ARDOT field surveys, and other pertinent information as cited, twenty PETS species are known to occur or may potentially occur within the action area. IPaC identified eight federally listed species: the threatened northern long-eared bat (*Myotis septentrionalis*), the endangered Ozark big-eared bat (*Corynorhinus townsendii ingens*), the endangered Indiana bat (*Myotis sodalis*), the endangered gray bat (*Myotis grisescens*), the threatened Missouri bladderpod (*Physaria filiformis*), the threatened Ozark cavefish (*Troglichthys rosae*), the threatened Piping Plover (*Charadrius melodus*), and the endangered American burying beetle (*Nicrophorus americanus*). Only four federally listed species have the potential to occur in the project area (see ***Appendix A***). The other sixteen species are considered sensitive by the USFS, and include two birds, eight plant species, two fish species, one crayfish, one bat, one isopod, and one caddisfly (see ***Appendix A***). Only these twenty species will be evaluated in this BE for potential impacts from the proposed actions.

ENVIRONMENTAL BASELINE AND EFFECTS OF PROPOSED MANAGEMENT ACTIONS

Each specific activity that is being considered will be evaluated to determine potential effects to the twenty PETS species of concern in this BE. The specific activities were listed in the "PROJECT DESCRIPTION AND LOCATION" section above. The most likely *general* effects from the specific activities are as follows:

Highway Construction Activities:

- Would remove trees (forested habitat) from the site prior to other construction activities
- Would demolish the existing bridge (potential roosting habitat)
- Would cause temporary soil disturbance from heavy equipment operation
- Could temporarily increase sedimentation by exposing soils susceptible to erosion before the action area could be revegetated
- Could impact or crush individual plants and animals on the ground directly by heavy equipment operation
- Would create small patches of early successional habitat through the conversion of forested tracts to highway rights-of-way

These activities can be grouped or simplified into the four following impacts:

- **Soil disturbance impacts**
- **Sedimentation impacts**
- **Heavy equipment impacts (includes bridge demolition)**
- **Creation of early successional habitat impacts (includes timber harvest)**

These four impacts will be evaluated below for the four federally listed and sixteen PETS species that are known to occur or may occur within the action area.

Gray bat *(Myotis grisescens)* – Endangered

The gray bat is found in 14 states across most of the southeastern United States. In Arkansas, the gray bat's range includes over 30 counties, mostly in the Ozark Highlands, Boston Mountains, Arkansas River Valley and Mississippi Alluvial Plain Ecoregions. Gray bats are year-round cave residents, although different caves are usually occupied in summer rather than winter. Few individuals are found outside of caves. They hibernate primarily in deep, vertical caves during winter, and roost in limestone karst caves along rivers in summer months. Foraging habitat occurs primarily over water such as along rivers and lakes, where they feed on aquatic insects, within intact forested interiors near summer caves (Moore et al. 2017, NatureServe Explorer 2017). Fukui et al. (2006) showed that an abundance of aquatic insects positively correlated to increased activity of riparian foraging bat species; therefore, loss of riparian vegetation or degradation of stream habitat quality may have negative effects on bat activities in riparian areas through the reduction of aquatic insects (food resources). Gray bat populations are threatened by a range of stressors including disease, land use change, and direct human disturbance. Factors directly influencing this species include white-nose syndrome, winter and summer habitat modification, disturbance and destruction such as cave vandalism, and climate change (NatureServe Explorer 2017).

Although surveys were not conducted to determine presence or absence of the species from the project area, there are known occurrence records in the project vicinity that suggest the area may be utilized for foraging. Under the FHWA Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat, a Bridge/Structure Assessment was completed and obligatory avoidance and minimization measures were committed to as part of our Section 7 consultation for Indiana and northern long-eared bats. The bridge assessment yielded no evidence of any bats utilizing the Whitzen Hollow Bridge. Avoidance and minimization measures include a winter clearing only restriction as well as a day time construction only special provision will be included in the job to minimize effects to gray bats.

Direct Effects
No direct effects are expected due to the distances of known occupied caves from the immediate project area and the winter clearing restriction; i.e., trees clearing will be prohibited outside of the winter months; i.e., the clearing of trees is prohibited from April 1 through November 15. No evidence of bats using the bridge was observed; therefore, no direct effects are expected due to the heavy equipment impacts from demolishing the existing bridge.

Indirect Effects
Proposed construction activities will result in the conversion of approximately 2.0 acres of riparian forest (i.e., foraging habitat) to highway right-of-way. Temporary soil disturbance and sedimentation caused by construction activities could result in decreased water quality temporarily; however, sediment and erosion control BMPs will be in place to minimize these activities' effects on water quality and aquatic insect assemblages. This creation of early successional habitat and sedimentation could alter this species' foraging habitat.

Cumulative Effects
Under the Endangered Species Act (ESA), cumulative effects are defined as those effects of future State or private activities—not involving federal activities—that are reasonably certain to occur within the action area. [50 CFR §402.02] Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would

be minimal due to the fact that this species is protected under the Endangered Species Act (ESA) and the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized since the area is largely rural, and a large amount of the surrounding property is under the jurisdiction of the Ozark National Forest. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may affect, not likely to adversely affect" gray bats; the USFWS concurred on October 31, 2017, see Appendix C. The project area is largely forested and contains suitable foraging habitat; therefore, avoidance and minimization measures such as a winter clearing restriction and a day time construction only special provision will accompany the job to minimize impacts to gray bats. Additionally, a bridge assessment was conducted and found no evidence of bats utilizing the existing bridge; however, there are known occurrences within the project area. There is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Indiana bat *(Myotis sodalis)* – Endangered

The Indiana bat is found in 24 states across most of the eastern United States. In Arkansas, the Indiana bat's range includes 27 counties, mostly in the Ozark Highlands, Boston Mountains, Arkansas River Valley and Crowley's Ridge Ecoregions. Indiana bats hibernate in caves during winter (NatureServe Explorer 2017). In summer, Indiana bats are known to roost underneath the peeling bark of dead or dying trees in intact to semi-intact wooded areas, often along streams. Menzel et al. (2001) found that preferred tree roosts, across the species' range, were in dead snags in sunny openings because the crevices under the bark stayed warmer. Also, they're known to roost and forage in upland forests within 1 to 3 miles of small to medium rivers and streams and in riparian areas. The closest known occurrence is approximately 12 to 13 miles northeast and east of the project area, in Devil's Den State Park (ANHC 2016). Indiana bat populations are primarily threatened by white-nose syndrome, disturbance by humans and to cave habitats (NatureServe Explorer 2017).

The project area lies within the consultation area of the federally endangered Indiana bat. Although no presence/absence summer surveys were conducted, suitable foraging and roosting habitat was observed in the project area for Indiana bats. Under the FHWA Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat, a Bridge/Structure Assessment was completed and obligatory avoidance and minimization measures were committed to as part of our Section 7 consultation for Indiana and northern long-eared bats. During the bridge assessment, no evidence of any bats utilizing the Whitzen Hollow Bridge was observed. Avoidance and minimization measures include a winter clearing only restriction as well as a day time construction only special provision that will be incorporated into the job contract to minimize effects to Indiana bats, as indicated on the Project Submittal Form. Furthermore, voluntary compensatory mitigation for adverse effects to Indiana bats will be fulfilled at ARDOT's Kings River Falls Mitigation Bank in Madison County. The Bridge/Structure Assessment Form and Project Submittal Form are included in Appendix C.

Direct Effects
Under the proposed construction activities, heavy equipment disturbance and noise associated with construction activities could disrupt foraging and potential roosting opportunities in and immediately surrounding the project area temporarily. Due to the winter clearing restriction; i.e., tree clearing is prohibited from April 1 through November 15, direct effects resulting from creation of early succession habitat (i.e., tree clearing) are unlikely. No evidence of bats using the bridge was observed; therefore, no direct effects are expected from the heavy equipment impacts from demolishing the existing bridge.

Indirect Effects
Proposed construction activities will result in the conversion of approximately 2.0 acres of riparian forest (i.e., foraging and roosting habitat) to highway right-of-way. Temporary soil disturbance and sedimentation caused by construction activities could contribute to a temporary decrease in water quality, which could in turn affect aquatic insect assemblages; however, erosion control BMPs will in place to minimize sedimentation. This creation of early successional habitat could alter this species' foraging and potential roosting habitat. Temporary soil disturbance and sedimentation could alter this species' foraging habitat, which could indirectly affect Indiana bats.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species is protected under the Endangered Species Act (ESA) and the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities are "likely to adversely affect" Indiana bats; the USFWS concurred on October 31, 2017, see Appendix C. Under the FHWA Range-Wide Programmatic, without negative presence and absence summer surveys, the species is considered to be present in the project area. Voluntary compensatory mitigation for adverse effects to Indiana bats will be provided at* ARDOT*'s Kings River Falls Mitigation Bank in Madison County. Please see the Incidental Take Statement in the attached USFWS Consultation Letter in Appendix C. Avoidance and minimization measures—a winter clearing restriction and a daytime construction only special provision—will be included in the job contract, see the Project Submittal Form in Appendix C. A bridge assessment found no evidence of bats utilizing the existing bridge. Suitable foraging and roosting habitat exists, and there are known occurrences nearby; therefore, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ozark big-eared bat *(Corynorhinus townsendii ingens)* - Endangered

The Ozark big-eared bat is found in the Ozark Plateau Region of Arkansas, Missouri and Oklahoma. In Arkansas, the range of the Ozark big-eared bat includes 20 counties, mostly in Ozark Highlands, Boston Mountains and Arkansas River Valley Ecoregions. Ozark big-eared bats inhabit caves year-round, which are typically located in karst regions dominated by oak-

hickory forests. Weyandt et al. (2005) and Graening et al. (2011) suggest that Ozark big-eared bats could also use bluff faces and bluff lines as roosting habitat, and these types of habitats could potentially garner additional populations. Ozark big-eared bats may move among hibernacula during winter (NatureServe Explorer 2017). During the summer months, Ozark big-eared bats primarily forage in forests and along forest edges of streams and mountain slopes, typically only a little over a mile from their roosting sites (Graening et al. 2011, NatureServe Explorer 2017). Although, a couple of studies tracked the movement of Ozark big-eared bats and found the longest distances traveled in a 24-hour period were up to 5.0 miles (Graening et al. 2011, Wethington et al. 1996). Clark et al. (2002) found that the mean emergence time for Ozark big-eared bats was 25.7 minutes after sunset in both summer and winter months.

Arkansas Natural Heritage Commission's (ANHC) records database indicates several known roost cave locations for the Ozark big-eared bat near the Washington/Crawford County line. There are four known Ozark big-eared bat roost-caves located approximately 1.9 miles northeast, 2.9 miles north, 3.6 miles north and 4.5 miles north of the Whitzen Hollow Creek Bridge. There are several other known Ozark big-eared bat roost caves located in Washington County in caves: WA3301, WA3302, WA3311 and Garrett Hollow Cave. The Ozark Plateau National Wildlife Refuge, located in Adair County Oklahoma, has a known Ozark big-eared bat hibernacula; the Refuge is located approximately 3.0 miles west of the project area. During a survey conducted in July of 2017 for another ARDOT highway construction job, approximately 5.0 miles north of the project area, one Ozark big-eared bat was captured (ARDOT/HDR bat survey 2017). Furthermore, there are several known occurrence records (ranging from years 1986 to 2015) in the project area (ANHC 2010, 2016).

Under the FHWA Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat, a Bridge/Structure Assessment Form was completed as part of our Section 7 consultation for Indiana and northern long-eared bats. No evidence of any bats using the Whitzen Hollow Creek Bridge was observed.

Direct Effects
Under the proposed construction activities, heavy equipment disturbance and noise associated with construction activities could disrupt foraging opportunities in and immediately surrounding the project area temporarily. There are known occupied Ozark big-eared bat roost caves, approximately 2.0 miles north of the immediate project area; however, no direct effects to roosts are expected due to the distances of known cave habitats and the lack of blasting during bridge construction. No evidence of any bats using the bridge was observed; therefore, no direct effects are expected due to the heavy equipment impacts from demolishing the existing bridge. Furthermore, a winter clearing restriction will accompany the job; that will prohibit tree clearing outside of the winter months; i.e., the clearing of trees is prohibited from April 1 through November 15.

Indirect Effects
Proposed construction activities will result in the conversion of approximately 2.0 acres of riparian forest (i.e., foraging habitat) to highway right-of-way. Temporary soil disturbance and sedimentation caused by construction activities could result in decreased water quality temporarily; however, sediment and erosion control BMPs will be in place to minimize these activities' effects on water quality and aquatic insect assemblages. This creation of early successional habitat and sedimentation could alter this species' foraging habitat.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species is protected under the Endangered Species Act (ESA) and the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of land under the Ozark National Forest's jurisdiction. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may affect, not likely to adversely affect" Ozark big-eared bats; the USFWS concurred on October 31, 2017. A survey conducted approximately 5.0 miles north of the project area, for another highway job, did capture one Ozark big-eared bat, and there are several catch records and known roosts near the project area. A bridge assessment found no evidence of bats utilizing the existing bridge. ARDOT is anticipating that the new bridge over Whitzen Hollow Creek will be multi-column concrete bents on a spread-footing; i.e., there will be no blasting or drilling required during bridge construction, which alleviates concerns of affecting hibernating bats. ARDOT will commit to a day time construction only special provision requiring that construction activities not occur 30 minutes prior to sunset and 30 minutes prior to sunrise. A winter clearing provision will also be placed on the job, which restricts tree clearing to winter months only. Even with these avoidance and mitigation measures in place, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Northern long-eared bat (*Myotis septentrionalis*) – Threatened

The northern long-eared bat is found in 37 states across most the eastern and north central United States. In Arkansas, the northern long-eared bat's range includes over 40 counties, mostly in the Ozark Highlands, Boston Mountains, Ouachita Mountains and the western part of South Central Plains Ecoregions. Hibernation primarily occurs in caves (USFWS 2011). Summer roosting and foraging habitat includes intact forested interiors with a large number of old trees, multiple forest strata and standing snags and woody debris. Foraging typically occurs within forests and along forest edges (NatureServe Explorer 2017). In Missouri, northern long-eared bats almost exclusively foraged in upland forested areas, rather than in floodplain and riparian forests (LaVal et al. 1980). In Iowa, this species was found primarily foraging in mature deciduous upland forests adjacent to riparian areas (Kunz 1973). Northern long-eared bat populations are threatened by a range of stressors including disease, land use change, and direct human disturbance. Factors directly influencing this species include white-nose syndrome, winter and summer habitat modification, disturbance and destruction such as roost tree removal, cave vandalism and climate change (NatureServe Explorer 2017).

During a July 2017 bat survey conducted for another highway construction project approximately 5.0 miles north of the project area, three northern long-eared were captured and tracked. Seven roost trees were found in southern Washington County as a result (ARDOT/ HDR Survey 2017). Suitable foraging habitat and potential roosting habitat was observed in the project area for northern long-eared bats.

Under the FHWA Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat, a Bridge/Structure Assessment Form, a Project Submittal Form, and a Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form was completed as part of our Section 7 consultation for Indiana and northern long-eared bats. No evidence of bats utilizing the Whitzen Hollow Creek Bridge was observed during the bridge assessment.

Direct Effects
It is possible that individuals of this species could be overlooked or not avoided during highway construction activities. Under the proposed construction activities, heavy equipment disturbance and noise associated with construction activities could disrupt potential foraging and roosting opportunities, temporarily, in the adjacent upland areas. Due to the winter clearing restriction, direct effects resulting from tree clearing is unlikely. There was no evidence of bats utilizing the bridge, and no direct effects are expected during demolition of the existing structure.

Indirect Effects
Although the project area is within the known range of the northern long-eared bat and occurrences have been documented, several studies indicate that foraging and roosting primarily take place in upland forested settings. Thus, no indirect effects are expected to occur under the proposed activities—creation of early successional habitat, temporary soil disturbance and sedimentation—which will ultimately convert 2.0 acres of riparian forest to highway right-of-way.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species is protected under the Endangered Species Act (ESA) and the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction project meets the Final 4(d) Rule and is exempt from any take, according to the FHWA Indiana bat and northern long-eared bat programmatic and accompanying Biological Opinion; the Service concurred on October 31, 2017. Avoidance and minimization measures such as a winter clearing restriction and a daytime construction only special provision will be incorporated into the job contract. A bridge assessment found no evidence of bats utilizing the bridge. This species has been documented to occur near the project area, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Bachman's Sparrow (*Peucaea aestivalis*) – Sensitive

The breeding range for Bachman's Sparrow includes southern Maryland, Ohio and Pennsylvania south to eastern Texas, the Gulf Coast and southcentral Florida. Non-breeding range is concentrated in southeastern US, eastern Texas and southeastern North Carolina. Bachman's Sparrow is fairly common in the outer Coastal Plain, uncommon in the inner Coastal Plain, rare in the Piedmont region and absent or local in its former northeastern breeding range

(NatureServe Explorer 2017). In the southeastern US, Bachman's Sparrow is found year round in open pine woodland habitats with canopy coverage at 50% or less, dense herbaceous cover at greater than 60% and limited mid-story density at less than 10% (USFWS 2013b). Habitat loss is the predominant threat to Bachman's Sparrow due to pine plantation conversion, urbanization and agricultural practices and fire suppression.

Direct Effects
Although there are no recorded occurrences of Bachman's Sparrow in the project area, it is within its breeding range (NatureServe Explorer 2017); however, due to lack of suitable habitat, it's unlikely that this species occurs in the project area. Under proposed activities, no direct effects on this species are expected to occur.

Indirect Effects
Creation of early successional habitat could benefit Bachman's Sparrow by providing suitable habitat for a few years (USFWS 2013b).

Cumulative Effects
Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to federal listing or loss of viability" for Bachman's Sparrow. Although the species has not been recorded from the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. The creation of early successional habitat could be beneficial by providing suitable habitat to Bachman's Sparrow.*

Bald Eagle (*Haliaeetus leucocephalus*) – Sensitive

Bald Eagles breed throughout much of Canada and Alaska, in addition to scattered sites across the lower 48 states, from California to the southeastern US. Wintering grounds cover most of the contiguous US. Bald Eagles typically breed and winter in forested areas adjacent to large bodies of water. Throughout its range, large, canopy roost trees that are open and accessible are selected. Nests are usually constructed below the crown of the tree, often at the highest point where large branches meet the trunk of the tree. The Bald Eagle is an opportunistic forager, and its food habits are highly variable across its range and are site-specific (NatureServe Explorer 2017). This species has a widespread distribution in North America, but suffered a great decline in the southern and eastern portions of its range in the 1970s. Bald Eagles are still susceptible to environmental contaminants, excessive human disturbance, habitat loss, decreasing food supplies and illegal shooting (NatureServe Explorer 2017). Winter concentrations occur along the Mississippi River and in northern Arkansas (NatureServe Explorer 2017). In winter, this species may congregate in areas with abundant food resources. Wintering areas are often associated with open water, or in upland areas, where food resources are in abundance. Winter roost sites vary in their proximity to food resources, distances up to 20 miles have been recorded (NatureServe

Explorer 2017). ANHC Records Database indicates several known occurrences of Bald Eagles near the Arkansas River in southern Crawford County (2010, 2016).

Direct Effects
No direct or nesting evidence of Bald Eagles were observed during site visits; however, there are known occurrences near the project area. Although no observations were made within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed construction activities, noise associated with the operation of heavy equipment could affect this species.

Indirect Effects
Under proposed activities, creation of early successional habitat; i.e., timber harvesting, could remove potential nesting roost sites. Temporary soil disturbance and sedimentation could affect aquatic food resource availability temporarily. Furthermore, food resources downstream of the immediate project area could be affected from proposed construction activities.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species is protected under the Endangered Species Act (ESA) and the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to federal listing or loss of viability" for Bald Eagles. During site visits to the project area, no evidence of Bald Eagles was observed. Although the species was not observed within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, and individuals downstream from the project area could be affected by construction activities.*

Eastern small-footed bat *(Myotis leibii)* – Sensitive

The eastern small-footed bat is found in southeastern Canada and in 20 states of the eastern United States. In Arkansas, its range includes much of northern and western Arkansas. Known occurrences are recorded from Crawford, Logan, Franklin, Searcy and Newton Counties (ANHC 2016, 2016). The eastern small-footed bat has mostly been recorded hibernating in caves in winter, near the entrance. This species exhibits a high degree of fidelity to hibernacula (NatureServe Explorer 2017). Warm-season roosts are primarily in cracks and crevices of rocky outcrops but have also been found in buildings, bridges, hollow trees, underneath loose bark, road cuts and caves. Generally roosts are often exposed to the sun but may be under mid to high canopy cover (NatureServe Explorer 2017). This species relies heavily on rock roosts during the summer months. Long distance migrations have not been documented with the eastern small-footed bat; summer roost sites may be as close as 0.1 km from winter hibernacula. This bat species' foraging habitat includes riparian forests, upland forests, clearings and ridgetops (NatureServe Explorer 2017). These bats have been observed travelling from 0.8 to 13.2 km

between day roosts and foraging sites (USFWS 2013a). According to the ANHC records database (2010, 2016), the closest known occurrence of the eastern small-footed bat is in Crawford County along a rock crevice at Lake Fort Smith near Chester Arkansas, approximately 18.0 miles east of the project area. The most serious threat to the eastern small-footed bat, like other bats in the eastern US, is white-nose syndrome.

Direct Effects
Under the proposed construction activities, operation of heavy equipment during bridge construction could temporarily disrupt foraging opportunities. Due to the winter clearing restriction; i.e., tree clearing is restricted to winter months, direct effects resulting from tree clearing is unlikely. There was no evidence of bats utilizing the existing bridge, and no direct effects are expected to occur during demolition of the existing structure.

Indirect Effects
Under the proposed activities, tree clearing activities would result in the creation of early successional habitat, which could remove potential foraging and roosting habitat. Temporary soil disturbance and sedimentation could lead to a temporary decrease in water quality, which could affect aquatic insect assemblages, and indirectly affect foraging opportunities for eastern small-footed bats.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized since the area is largely rural, and a large amount of land is under the jurisdiction of the Ozark National Forest. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to federal listing or loss of viability" for the eastern small-footed bat. Although the species was not detected near the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Isopod *(Lirceus bicuspidatus)* – Sensitive

This isopod is endemic to 12 Arkansas Counties: Independence, Jackson, Johnson, Logan, Madison, Marion, Newton, Perry, Pope, Pulaski, Saline, Searcy, Stone and Yell (NatureServe Explorer 2017). The closest known occurrences are in Logan County, where this isopod has been found in a stream, near Mt. Magazine, 2.6 miles southeast of Corley and in a spring on Mt. Nebo in Mt. Nebo State Park (Graening et al. 2007). This isopod inhabits a variety of aquatic habitats from small seeps, springs, streams and cave streams. There is not much more known concerning the biology of this species, although it has a fairly large range in mountainous regions (Robison and Allen 1995).

Direct Effects
This isopod is not known to occur in Crawford County; however, this could be due to the area being under-surveyed, and the uncertainty of this species' range. Although this species is not known to occur in the project area, there is suitable habitat present. Under the proposed activities, no direct effects are expected.

Indirect Effects
Under the proposed activities, operation of heavy equipment, temporary soil disturbance and sedimentation could temporarily disturb aquatic habitat by reducing water quality, which this isopod could be susceptible to. Furthermore, downstream populations, outside of the immediate project area, could be affected from proposed construction activities by reduced water quality. Creation of early successional habitat should have no effect.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the isopod, Lirceus bicuspidatus. The species is not known to occur in the project area. Although this species is not known to occur within the project area, there is suitable habitat present; therefore, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Longnose darter (*Percina nasuta*) - Sensitive
The longnose darter is found in the St. Francis, White, Arkansas and Ouachita River drainages in the Ozark and Ouachita Mountains of Arkansas, southern Missouri and eastern Oklahoma. In Arkansas, the longnose darter has recently been found in Lee Creek, Frog Bayou, Mulberry River, upper White River, War Eagle Creek, Big Piney Creek, Illinois Bayou Drainage, Ouachita River, Caddo River and the South Fourche La Fave River (Robison and Harp 1988, NatureServe Explorer 2017). The longnose darter is known from 12 Arkansas Counties, including Crawford County. ANHC Records (2010, 2016) indicate longnose darter occurrences, just south of the project area, in Lee Creek. The longnose darter can be found in small to medium sized rivers with clear water. It inhabits gravel riffles in the spring and slower moving water over sand and silt in the fall (NatureServe Explorer 2017). Longnose darter populations are susceptible to habitat alteration from stream impoundments and any activities leading to reduced water quality. Historical declines were due to habitat modifications resulting from reservoir construction (NatureServe Explorer 2017).

Direct Effects
Whitzen Hollow Creek is a tributary of Mountain Fork Creek, which is a tributary to Lee Creek. Whitzen Hollow Creek and Mountain Fork Creek fit the general, preferred habitat described for

longnose darters. Although, there are not any recorded occurrences from Whitzen Hollow Creek or Mountain Fork Creek, there is the likelihood of longnose darter populations to inhabit these streams. Highway construction activities could potentially affect this species. During the proposed construction, heavy operating equipment could crush individuals.

Indirect Effects
Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter this species' preferred habitat. Furthermore, downstream populations, outside of the immediate project area, could be affected from proposed construction activities by reducing water quality and increasing turbidity, temporarily.

Cumulative Effects
Protective measures established under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) to ensure the integrity of streamside management areas and seeps/springs have greatly reduced the potential for impacts to this species during resource management activities. Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) in order to minimize cumulative impacts. Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" of the longnose darter. Under proposed construction activities, individuals could be crushed by heavy operating equipment, and construction activities could result in temporary soil disturbance and sedimentation, either of which could lead to a decrease in water quality.*

Nearctic Paduniellan caddisfly (*Paduniella neartica*) – Sensitive

The known range of the Nearctic Paduniellan caddisfly includes Arkansas and Missouri. Missouri populations have not yet been confirmed, but, in Arkansas, the species has the potential to occur in Crawford, Franklin, Johnson, Pope and Washington Counties. ANHC Records (2010, 2016) indicate that this species is known only from two sites in Washington County, one in upper Lee Creek at Devil's Den State Park and the other in Cove Creek, 15.0 miles south of Prairie Grove. The ecology and precise habitat is unknown, but both ANHC records indicate that this species was found in clear, spring-fed, high-gradient streams with a gravel-bottom (NatureServe Explorer 2017 and ANHC Records 2010, 2016).

Direct Effects
There is no record of this species within the project area; however, suitable habitat exists and occurrence data for this species could be scarce due to the area being under-surveyed. Although this species is not known to occur in the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, given the suitable habitat available. Under the proposed activities, sedimentation and operation of heavy equipment could directly impact individuals. Operation of heavy equipment could crush individuals. Temporary soil disturbance and creation of early successional habitat should not have any direct effects on this species.

Indirect Effects
Under the proposed activities, operation of heavy equipment, temporary soil disturbance and creation of early successional habitat may alter this species' preferred habitat by temporarily decreasing water quality and increasing turbidity.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) in order to minimize cumulative impacts. Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Nearctic Paduniellan caddisfly. The caddisfly is known to occur within the project area; however, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, given the suitable habitat present.*

Ozark shiner (*Notropis ozarcanus*) – Sensitive

This species is found primarily in the Ozark Plateau Region of southern Missouri and northern Arkansas. In Arkansas, this species is mostly known from the White River Drainage in Lawrence, Madison, Marion, Newton, Randolph, Searcy and Sharp Counties (NatureServe Explorer 2017). Robison (1997) indicated that a single specimen has been collected in the Arkansas River drainage—Osage Creek in Benton County. The closest known occurrence record is in Madison County, near St. Paul, Arkansas. Habitat includes small to medium clear, upland rivers with high gradient and permanent strong flow. This species is commonly found near riffles, usually just below, in slight to moderate current, in runs and flowing pools, over gravel, cobble or sand stream bottoms (NatureServe Explorer 2017). Habitat destruction, modification and fragmentation of habitat from impoundments with cold water releases had been identified as the primary threat affecting their populations. Additional threats include increases in turbidity and siltation due to surrounding land uses (Nature Serve Explorer 2017).

Direct Effects
Although suitable habitat is present, this species is unlikely to occur in the project area. Under the proposed activities, no direct effects on this species are expected.

Indirect Effects
Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter this species' preferred habitat by temporarily decreasing water quality and increasing turbidity by unavoidably introducing sediment into Whitzen Hollow Creek during construction. This could affect downstream populations as well; however, proper installation and maintenance of erosion control BMPs will be in place to minimize sediment leaving the site and entering Whitzen Hollow Creek.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Ozark shiner. This species is not known to occur in the project area, but suitable habitat is present; therefore, it is possible that individuals of this species could be affected by highway construction activities.*

Williams' crayfish (*Orconectes williamsi*) – Sensitive

The known range of the Williams' crayfish includes extreme headwater streams of the White River Basin in Arkansas and Missouri. In Arkansas portion of the White River drainage, the species occurs in Benton, Boone, Carroll, Franklin, Johnson, Madison and Washington Counties. Wagner et al. (2010) expanded the known range of this species to the Arkansas River drainage, when it was found in Washita Creek (Mulberry River drainage) in Johnson County and in the Elk River drainage in Benton County. ANHC records (2010, 2016) indicate that this species is found in adjacent counties—Franklin, Madison, and Washington Counties. The closest known location of Williams' crayfish is in Riley Creek in southern Washington County (ANHC Records 2010, 2016). Williams' crayfish can occur in riffles and runs of silt-free gravelly headwater creeks, spring branches and cave streams, under large substrate in pools (NatureServe Explorer 2017). Preferred habitat has also been characterized as small streams that are well-incised, with coarse substrate, shallow water, fast moving currents and limited aquatic vegetation growth, which could be attributed to high riparian forest canopy cover and lack of siltation in stream channels.

Widespread development is a primary threat to this species' populations, and it has led to disturbances of Ozark streams, often associated with clearing riparian vegetation, have caused aggradation, increased channel widths and channel instability. Siltation is one of the greatest threats to habitat quality in upland streams and could affect this species if riparian vegetation continues to be lost (Wagner et al. 2010).

Direct Effects
There are no occurrence records of this species within the project area; however, suitable stream habitat exists. Although this species is not known to occur in the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, given the suitable habitat available. Under the proposed activities, heavy equipment could crush individuals. Temporary soil disturbance, siltation and creation of early successional habitat should not have any direct effects on this species.

Indirect Effects
Under the proposed activities, temporary soil disturbance and sedimentation may alter this species' preferred habitat by temporarily introducing sediment during construction and decreasing water quality and increasing turbidity in Whitzen Hollow Creek. Creation of early successional habitat could remove the high canopy cover along Whitzen Hollow Creek, which could lead to increased aquatic vegetation growth and alter this species preferred habitat.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) in order to minimize cumulative impacts. Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Williams' crayfish. This crawfish is not known to occur within the project area; however, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, given the suitable habitat present.*

Bush's poppymallow (*Callirhoe bushii*) – Sensitive

This herbaceous perennial wildflower is found in southwest Missouri, southeast Kansas, east Oklahoma, and northwest Arkansas (NatureServe Explorer 2017). In Arkansas, Bush's poppymallow is found in Benton, Carroll, Logan, Marion, Van Buren and Washington Counties. Habitat includes open, rocky woodlands, edges of glades and barrens, upland tallgrass prairies, railroad and highway rights-of-way and ravine bottoms (NatureServe Explorer 2017). Bush's poppymallow can thrive in full sun or in partial shade, and has never been observed in a closed canopy situation. Habitat loss is the most serious threat throughout its range NatureServe Explorer 2017).

Direct Effects
Vascular plant surveys conducted did not identify any Bush's poppymallow within the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment and temporary soil disturbance could crush or destroy individuals. Creation of early successional habitat and sedimentation should not have any direct effect on this species.

Indirect Effects
Under the proposed activities, temporary soil disturbance, sedimentation and creation of early successional habitat may allow non-native species to become established and out-compete this species and alter its preferred habitat. Creation of early successional habitat could be beneficial to this species, as Bush's poppymallow favors habitats that support early successional vegetation and is tolerant to some disturbance (NatureServe Explorer 2017).

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for Bush's poppymallow. Vascular plant surveys conducted within the project area did not identify any Bush's poppymallow. Although the species was not detected within the project area, suitable habitat is present, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ouachita false indigo (*Amorpha ouachitensis*) – Sensitive

Ouachita false indigo is considered an endemic to the Ouachita Mountains of western Arkansas and southeastern Oklahoma; however, there is an occurrence record of this species, from 2007, in Franklin County near the Pilot Knob/White Oak Mountain area (ANHC Records 2010, 2016). Habitat includes clearings of rocky creeks, stream banks, floodplains, rocky ridges, glades and dry rocky sandstone slopes (NatureServe Explorer 2017). Cattle grazing, logging, brush clearing, stream alteration and road construction threaten Ouachita false indigo populations (NatureServe Explorer 2017).

Direct Effects
Vascular plant surveys conducted did not identify any Ouachita false indigo within the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, temporary soil disturbance and heavy operating equipment could destroy or crush individuals. Creation of early successional habitat and sedimentation should not have any direct effect on this species, especially since this species is capable of growing in disturbed conditions (NatureServe Explorer 2017).

Indirect Effects
Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may allow non-native species to become established and alter this species' preferred habitat. On the other hand, creation of early successional habitat near Whitzen Hollow could provide favorable habitat by opening up the above tree canopy.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further

development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for Ouachita false indigo. Vascular plant surveys conducted within the project area did not identify the Ouachita false indigo. Although the species was not detected within the project area, suitable habitat exists, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ovate catchfly (*Silene ovata*) – Sensitive

Ovate catchfly is found in Alabama, Arkansas, Georgia, Illinois, Indiana, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Virginia. In Arkansas, ovate catchfly is found in nine counties, including Baxter, Benton, Carroll, Cleburne, Crawford, Newton, Pope, Stone, and Van Buren (NatureServe Explorer 2017). Typical habitat includes rich woods of neutral soils over calcareous rocks, at medium elevations. It can be also be found in open or forested habitats within floodplains and within forests on moderate to steep slopes, often in very rocky habitats (NatureServe Explorer 2017). Cattle grazing, logging, brush clearing, road construction and right-of-way maintenance are the primary threats to ovate catchfly (NatureServe Explorer 2017).

Direct Effects
Vascular plant surveys conducted did not identify any ovate catchfly within the project area. Although the vascular plant survey did not detect the species within the project area, habitat exists, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment and temporary soil disturbance could crush and destroy individuals. Creation of early successional habitat and sedimentation should not have any direct effect on this species, especially since this species is capable of growing in disturbed conditions (NatureServe Explorer 2017).

Indirect Effects
Under the proposed activities, temporary soil disturbance, sedimentation and creation of early successional habitat may increase the likelihood of erosion and allow non-native species to become established and out-compete this perennial wildflower and alter or reduce the availability of this species' preferred habitat.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for ovate catchfly. Vascular plant surveys conducted within the project area did not identify the ovate catchfly. Although the species was not detected within the project area, suitable habitat is present, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ozark Chinquapin (*Castanea pumila* var. *ozarkensis*) – Sensitive

This tree is found mainly in the Ozark Plateau Region, but there are scattered populations in the Ouachita Mountains. Habitat includes oak-pine and oak-hickory forests on relatively dry, acidic soils on ridge tops, tops of sandstone bluffs, upper slopes adjacent to ravines, and is also noted from mesic sites in much of Arkansas, and less commonly in Missouri and Oklahoma (Nature Serve Explorer 2017). ANHC records (2010, 2016) indicate several known occurrence records for Ozark chinquapin in Whitzen Hollow. Although forest clearings pose a threat to the dwindling Ozark Chinquapin populations, the declining population is mostly attributed to the chestnut blight. Trees killed by the chestnut blight may produce numerous sprouts from the roots (Nature Serve Explorer 2017).

Direct Effects
Vascular plant surveys conducted did not identify any Ozark Chinquapin trees within the project area. Although the vascular plant survey did not detect the species within the project area, a 1999 survey recorded several occurrences within Whitzen Hollow, so there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could remove individuals. Temporary soil disturbance, creation of early successional habitat and sedimentation should not have any direct effect on this species that are undoubtedly already infected with the chestnut blight.

Indirect Effects
Under the proposed activities, temporary soil disturbance and creation of early successional habitat may allow non-native species to become established and alter or reduce the availability of this species' preferred habitat. Sedimentation should not have any indirect effects on this species.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Ozark Chinquapin. 2016 vascular plant surveys conducted within the project area did not identify the Ozark Chinquapin. Although the species was not recently detected within the project area, there*

are 1999 occurrence records; therefore, it is possible that individuals of this species could be overlooked or not avoided during highway construction activities.

Ozark least trillium (*Trillium pusillum* var. *ozarkanum*) – Sensitive

Ozark least trillium occurs in the Interior Highlands of Arkansas, Kentucky, Missouri, North Carolina, Oklahoma and Tennessee. In Arkansas, Ozark least trillium is found in Benton, Boone, Carroll, Madison, Montgomery, Newton, Polk, Pulaski and Washington Counties. Its habitat includes dry to mesic upland oak-hickory dominant woods, with partially open canopies. This species is often associated with thin, acidic, cherty soils in Missouri and Arkansas (Tucker 1983, NatureServe Explorer 2017). The primary threat to Ozark least trillium populations is habitat destruction from clear-cutting for timber and other associated activities from logging.

Direct Effects
Vascular plant surveys conducted did not identify any Ozark least trillium within the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment and temporary soil disturbance could crush or destroy individuals. Creation of early successional habitat and sedimentation should not have any direct effect on this species.

Indirect Effects
Under the proposed activities, temporary soil disturbance and creation of early successional habitat may allow non-native species to become established and open the forest floor to more sunlight, which would alter this species' preferred habitat. Sedimentation should not have any indirect effect on this species.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Ozark least trillium. Vascular plant surveys conducted within the project area did not identify the Ozark least trillium. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ozark spiderwort (*Tradescantia ozarkana*) – Sensitive

Ozark spiderwort is endemic to the Ozark and Ouachita Mountain Regions of Arkansas, Missouri and Oklahoma. In Arkansas, Ozark spiderwort is found in Baxter, Benton, Johnson, Logan, Newton, Polk and Pope Counties (NatureServe Explorer 2017). ANHC records (2010, 2016) indicate several known occurrence records for Ozark spiderwort in Whitzen Hollow. Ozark spiderwort does not appear to be highly habitat-specific. Throughout its range, habitat includes moist, diverse, deciduous woodlands, and occurs in steep, rocky, wooded slopes and ravines, bases and lower slopes of bluffs as well as on dry to moist woodland ledges. This species is often associated with a limestone/dolomite substrate (NatureServe Explorer 2017). Land cover conversion of favored habitat due to housing development, road construction and maintenance, and activities associated with logging and livestock continue to be the major threats to existing populations (NatureServe Explorer 2017).

Direct Effects
Vascular plant surveys conducted in the project area did not identify any Ozark spiderwort in the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals.

Indirect Effects
Under the proposed activities, temporary soil disturbance and creation of early successional habitat may allow non-native species to become established and alter the preferred habitat of this species. Creation of early successional habitat may also threaten populations by shading out individuals through increasing tree canopy coverage, since weedy, ruderal species would dominate the site initially. Sedimentation should not have any indirect effect on this species.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for Ozark spiderwort. 2016 vascular plant surveys conducted within the project area did not identify Ozark spiderwort. Although the species was not recently detected within the project area, there are occurrence records from 1999; therefore, it is possible that individuals of this species could be overlooked or not avoided during highway construction activities.*

Royal catchfly *(Silene regia)* – Sensitive

Royal catchfly is found in 13 states in mostly the eastern U.S. In Arkansas, this species is found in Benton, Boone, Bradley, Hot Spring, Newton, Searcy, Sharp and Washington Counties (NatureServe Explorer 2017). In Arkansas, royal catchfly is found in prairies and on rock outcrops and along roadsides and railroad rights-of-way in cherty, well-drained soils.

Direct Effects
Vascular plant surveys conducted did not identify any royal catchfly within the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment and temporary soil disturbance could crush or destroy individuals. Creation of early successional habitat and sedimentation should not have any direct effect on this species.

Indirect Effects
Under the proposed activities, temporary soil disturbance, sedimentation and creation of early successional habitat may allow non-native species to become established and out-compete this species and alter its preferred habitat. Creation of early successional habitat could be beneficial to this species, as royal catchfly favors open habitats such as roadsides that have undergone moderate disturbance (NatureServe Explorer 2017).

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for royal catchfly. Vascular plant surveys conducted within the project area did not identify any royal catchfly. Although the species was not detected within the project area, suitable habitat is present, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Southern Lady's Slipper *(Cypripedium kentuckiense)* – Sensitive

This orchid occurs within the Interior Highlands of Arkansas, Missouri, and Oklahoma, the Gulf Coastal Plain of Texas, Louisiana, Alabama, and Mississippi, and the Cumberland Plateau of Kentucky and northern Tennessee (NatureServe Explorer 2017). It has also recently been found in eastern Virginia. The Southern lady-slipper is common in the state of Arkansas, but less common in Oklahoma, the western extent of its range.

The habitat for this species is mesic floodplain forests along stream terraces and along margins of seeps and springs. These areas are often inundated annually and have complete canopy cover. This species is also found on mesic north slopes in hardwood forests. It is most abundant above the flood level and away from spring-saturated soils. Protective measures established under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) to ensure the integrity of streamside management areas and seeps/springs have greatly reduced the potential for impacts to this species during resource management activities. Although its status is improving, the southern lady's slipper's habitat is threatened by logging, which converts suitable forest types into pine plantations and reservoir construction, which can permanently inundate floodplain forests. Southern lady's slipper is intolerant to anthropogenic disturbance (ONHI 2006).

Direct Effects
Vascular plant surveys conducted within the project area did not identify the southern lady-slipper. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Temporary soil disturbance, creation of early successional habitat, and sedimentation should not have any direct effects on this species.

Indirect Effects
Under the proposed activities, temporary soil disturbance and creation of early successional habitat may open up the forest floor to more sunlight, which could dry out the site and allow nonnative species to become established and alter this species' preferred habitat. Potentially invasive species noted in the project area include Japanese stilt grass (*Microstegium vimineum*), sericea lespedeza (*Lespedeza cuneata*), Japanese honeysuckle (*Lonicera japonica*), Johnson grass (*Sorghum halepense*), and mimosa tree (*Albizia julibrissin*). Japanese stilt grass is of special concern because it is shade tolerant and can displace natural vegetation under a forest. Sedimentation should not have any indirect effects on this species.

Cumulative Effects
Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the OSFNF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the rural nature of the area, and the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

Determination of Effects: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for Southern lady's slipper. Vascular plant surveys conducted within the project area did not identify the Southern lady's slipper. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

CONSULTATION HISTORY WITH THE U.S. DEPARTMENT OF THE INTERIOR – U.S. FISH AND WILDLIFE SERVICE

Four federally listed species are known to occur in or near the proposed action area: the endangered gray bat (*Myotis grisescens*), the endangered Indiana bat (*Myotis sodalis*), the endangered Ozark big-eared bat (*Corynorhinus townsendii ingens*), and the threatened northern long-ear bat (*Myotis septentrionalis*). Based on the findings of this document as well as previous consultation between the USFWS, a determination of 'may affect, not likely to adversely affect' is appropriate for the gray bat, Ozark big-eared bat and northern long-eared bat, and a 'likely to adversely affect' determination is appropriate for the Indiana bat, as discussed in Appendix C, unless presented with new information. The Service concurred on October 31, 2017.

COORDINATION HISTORY WITH THE U.S. ARMY CORPS OF ENGINEERS

The proposed construction activities will require excavation or discharge of dredged or fill material into jurisdictional waters of the U.S.; thus, an USACE issued permit under the Section 404 of the Clean Water Act will need obtained for this project. A permit application will be submitted to the Little Rock District for this project.

DETERMINATION OF EFFECTS

Based on the preceding documentation, discussions, and "best available science," the "determination of effects" for the proposed actions are as follows:

A. **Proposed, Threatened and Endangered Species**

_____ **No Effect**

__X__**May affect, Not likely to adversely affect**

_____ **Likely to adversely affect**

> ***Gray bat:*** *The proposed highway construction activities "may affect, not likely to adversely affect" gray bats; the Service concurred on October 31, 2017. ARDOT will commit include a special provision requiring that construction activities not occur 30 minutes prior to sunset and 30 minutes prior to sunrise. A winter clearing provision will also be placed on the job, which restricts tree clearing to winter months only. Erosion control BMPs will be utilized to minimize sediment leaving the job site and entering Whitzen Hollow Creek. Although the bridge assessment found no evidence of bats utilizing the existing bridge, there are known occurrences within the project area; therefore, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*
>
> ***Northern long-eared bat:*** *The proposed highway construction and associated activities meets the qualifications for exemption from any take of northern long-eared bats under Final 4(d) Rule, according to the FHWA Range-Wide Programmatic for Indiana and northern long-eared bats and accompanying*

Programmatic Biological Opinion; the Service concurred on October 31, 2017. A survey conducted approximately 5.0 miles north of the project area, for another highway job, did capture three northern long-eared bats and located seven roost tree in southern Washington County, and there are several other known records of this species in the project area. A bridge assessment of Whitzen Hollow Creek Bridge found no evidence of bats utilizing the bridge. ARDOT will commit include a special provision requiring that construction activities not occur 30 minutes prior to sunset and 30 minutes prior to sunrise. A winter clearing provision will also be placed on the job, which restricts tree clearing to winter months only. Erosion control BMPs will be utilized to minimize sediment leaving the job site. Although northern long-eared bats primarily roost and forage in upland forests, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

Ozark big-eared bat: *The proposed highway construction activities "may affect, not likely to adversely affect" Ozark big-eared bats; the Service concurred on October 31, 2017. A survey conducted approximately 5.0 miles north of the project area, for another highway job, did capture one Ozark big-eared bat, and there are several known records of this species near the project area. A bridge assessment found no evidence of bats utilizing the existing bridge. ARDOT is anticipating that the new bridge over Whitzen Hollow Creek will be multi-column concrete bents on a spread-footing; i.e., there will be no blasting or drilling required during bridge construction, which alleviates concerns of affecting hibernating bats. ARDOT will commit include a special provision requiring that construction activities not occur 30 minutes prior to sunset and 30 minutes prior to sunrise. A winter clearing provision will also be placed on the job, which restricts tree clearing to winter months only. Erosion control BMPs will be utilized to minimize sediment leaving the job site. Even with these mitigation measures in place, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

B. **Proposed, Threatened and Endangered Species**

_____ No Effect

_____ May affect, Not likely to adversely affect

___X__ Likely to adversely affect

Indiana bat: *The proposed highway construction activities are "likely to adversely affect" Indiana bats; the Service concurred on October 31, 2017. Under the FHWA Range-Wide Programmatic for Indiana and northern long-eared bats, a bridge assessment was conducted and found no evidence of bats utilizing the existing bridge. ARDOT will commit to avoidance and minimization measures such as a special provision requiring that construction activities not occur 30 minutes prior to sunset and 30 minutes prior to sunrise, and a winter clearing special provision will also be placed on the job, which restricts tree clearing to winter months only. Furthermore, voluntary compensatory mitigation will be provided for any adverse effects to Indiana bats during bridge construction. Erosion control BMPs will be*

utilized to minimize sediment leaving the job site and entering Whitzen Hollow Creek. Although the closest known occurrence is in Devil's Den State Park, Indiana bats have been documented to travel long distances from roost sites, and suitable foraging and roosting habitat exists within the project area; therefore, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

B. Sensitive Species

_____ No impact

_____ Beneficial impact

__X__ May impact individuals but is not likely to cause a trend to federal listing or loss of viability:

Bachman's Sparrow: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to federal listing or loss of viability" for Bachman's sparrow. Although the species has not been recorded from the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. The creation of early successional habitat could be beneficial by providing suitable habitat to Bachman's sparrow.*

Bald Eagle: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to federal listing or loss of viability" for Bald Eagles. During site visits to the project area, no evidence of Bald Eagles was observed. Although the species was not observed within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, and individuals downstream from the project area could be affected by construction activities.*

Isopod: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the isopod, Lirceus bicuspidatus. The species is not known to occur in the project area. Although this species is not known to occur within the project area, there is suitable habitat present; therefore, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Eastern small-footed bat: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to federal listing or loss of viability" for the eastern small-footed bat. Although the species was not detected near the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Longnose darter**:** *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" of the longnose darter. Under proposed construction activities, individuals could be crushed by heavy operating equipment, and construction activities could result in*

temporary soil disturbance and sedimentation, either of which could lead to a decrease in water quality.

Nearctic Paduniellan caddisfly: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Nearctic Paduniellan caddisfly. The caddisfly is known to occur within the project area; however, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, given the suitable habitat present.*

Williams' crayfish: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Williams' crayfish. This crawfish is not known to occur within the project area; however, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, given the suitable habitat present.*

Ozark shiner: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Ozark shiner. This species is not known from the project area, but suitable habitat is present. Therefore, it is possible that individuals of this species could be overlooked or not avoided during highway construction activities.*

Bush's poppymallow: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for Bush's poppymallow. Vascular plant surveys conducted within the project area did not identify any Bush's poppymallow. Although the species was not detected within the project area, suitable habitat is present, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ouachita false indigo: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for Ouachita false indigo. Vascular plant surveys conducted within the project area did not identify the Ouachita false indigo. Although the species was not detected within the project area, suitable habitat exists, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ovate catchfly: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for ovate catchfly. Vascular plant surveys conducted within the project area did not identify the ovate catchfly. Although the species was not detected within the project area, suitable habitat is present, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ozark chinquapin: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Ozark Chinquapin. Vascular plant surveys conducted within the project area*

did not identify the Ozark Chinquapin. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

Ozark least trillium: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for the Ozark least trillium. Vascular plant surveys conducted within the project area did not identify the Ozark least trillium. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Ozark spiderwort: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for Ozark spiderwort. Vascular plant surveys conducted within the project area did not identify Ozark spiderwort. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Royal catchfly: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for royal catchfly. Vascular plant surveys conducted within the project area did not identify any royal catchfly. Although the species was not detected within the project area, suitable habitat is present, and there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Southern lady's slipper: *The proposed highway construction activities "may impact individuals but are not likely to cause a trend to Federal listing or loss of viability" for Southern lady's slipper. Vascular plant surveys conducted within the project area did not identify the Southern lady's slipper. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

Kayti Ewing 12/20/2017

Kayti Ewing Date
Botanist, ARDOT-Environmental Division

Concurrence by:

Matthew Lark 12-20-18

Matthew Lark Date
Boston Mountains Ranger District Wildlife Biologist

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Appendix A

PETS Species Checklist

Survey Needs Based on FSM 2672.43(USDA FS 2005c)

Proposed, Endangered, Threatened, and Sensitive Species List

(Ozark Portion of the Ozark-St. Francis National Forest Only)

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
FEDERALLY ENDANGERED and THREATENED SPECIES				
American burying beetle	*Nicrophorus americanus*	E	No	Occurrence is not expected; project area lies outside designated American Burying Beetle Consultation Area (USFWS Consultation Area Shapefile 2012).
Cave Crayfish	*Cambarus aculabrum*	E	No	Does not occur on the Boston Mountain Ranger District. Known occurrences are located in caves in Benton Co., Arkansas (NatureServe Explorer 2017).
Gray Bat	***Myotis grisescens***	**E**	**Yes**	There are known occurrences (ANHC Records 2016, ArDOT Bat Survey 2017). Suitable foraging and roosting habitat is present.
Harperella (plant)	*Ptilimnium nodosum*	E	No	Not reported on the OSFNF and is not known to occur in project area (Witsell and Baker 2011, USDA-FS 2005b, ANHC Records 2016, NatureServe Explorer 2017). It is thought that the Boston Mtns could have suitable habitat for this species based on similar geology to where it is found; however, an extensive plant survey of the project area revealed nothing.
Hell Creek Cave Crayfish	*Cambarus zophonastes*	E	No	Does not occur on the Boston Mountain Ranger District. Known occurrences are located in Stone Co., Arkansas (NatureServe Explorer 2017).
Indiana bat	***Myotis sodalis***	**E**	**Yes**	There are known occurrences (ANHC Records 2016, ArDOT Bat Survey 2017). Suitable foraging and roosting habitat is present.
Least Tern (bird)	*Sternula antillarum*	E	No	Nests on sandbars of large rivers (USFWS 2013). Suitable habitat not available in project area.
Missouri bladderpod (plant)	*Physaria (Lesquerella) filiformis*	T	No	Not reported on the OSFNF, not known from the project area. Closest known location is Washington Co. (Witsell 2006). Known from shale, sandstone, limestone and dolomite glades. Potential habitat does not exist in project area.
Neosho Mucket mussel	*Lampsilis rafinesqueana*	E	No	Known to occur and critical habitat designated in Benton and Washington Co. There are no known occurrences within the project area. (NatureServe Explorer 2017, USFWS Critical Habitat Shapefile 2015).
Northern long-eared bat	***Myotis septentrionalis***	**T**	**Yes**	Thought to be common forest-wide. There are several known occurrences near the project area. Several roost trees were identified just north of project location, near Crawford/Washington Co. line (ANHC Records 2016, HDR/ArDOT Bat Survey 2017).

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Ozark Big-eared Bat	***Corynorhinus townsendii ingens***	**E**	**Yes**	There are several known occurrences near the project area. Several known roost caves are present near the project area as well (ANHC Records 2016, HDR/ArDOT Bat Survey 2017).
Ozark Cavefish	*Troglichthys (Amblyopsis) rosae*	T	No	Currently known to occur in 9 caves in Benton Co., AR. The project area is located within its historic range and the karst region of Arkansas, but there are no known occurrences nearby (USFWS 5-year Review 2011).
Ozark hellbender	*Cryptobranchus alleganiensis bishopi*	E	No	This species is not known to occur in the Boston Mountain Ranger District or the project area. Known occurrences are in Baxter, Fulton, Independence, Izard & Randolph Co. in Arkansas (NatureServe Explorer 2017).
Pink Mucket	*Lampsilis abrupta*	E	No	Not recorded on the OSFNF (Harris et al. 2009, NatureServe Explorer 2017). Known from White River.
Rabbitsfoot mussel	*Theliderma cylindrica (Quadrula cylindrica cylindrica)*	T	No	Does not occur within or downstream from the project area (Harris et al. 2009, USDI-FWS 2012). Populations occur in Spring and Black River Drainages.
Scaleshell mussel	*Leptodea leptodon*	E	No	Not recorded on the OSFNF. Closest known occurrence is a historic record in Frog Bayou, near Rudy in Crawford Co. (Harris et al. 2009, NatureServe Explorer 2017, ANHC Records 2016).
Snuffbox	*Epioblasma triquetra*	E	No	This species is not known to occur in the Boston Mountain Ranger District. Known from Baxter, Independence, Izard, Lawrence, Marion, Randolph & Sharp Co. in Arkansas (NatureServe Explorer 2017).
Speckled Pocketbook mussel	*Lampsilis streckeri*	E	No	Not known to occur on OSFNF. Known from Cleburne, Searcy, Stone and Van Buren Co. in Arkansas (NatureServe Explorer 2017). Only known from the Upper Little Red Watershed.
Spectaclecase mussel	*Margaritifera (Cumberlandia) monodonta*	E	No	Known to occur on the Boston Mountain Ranger District. Known occurrences on lower Ouachita River and Mulberry River (Harris et al. 2009, Williams et al. 2017, NatureServe Explorer 2017). No suitable habitat present in the project area.
Yellow-cheek darter	*Etheostoma moorei*	E	No	Critical habitat is designated outside of OSFNF. Known to occur in Searcy, Stone and Van Buren Co. in Arkansas (NatureServe Explorer 2017). Not known to occur in the project area.
FOREST SERVICE SENSITIVE SPECIES - ANIMALS				
Bachman's Sparrow	*Aimophila aestivalis*	S	**Yes**	May be found in or near project area. Requires open pine forest, early forest stage cover for nesting habitat (NatureServe Explorer 2017).
Bald Eagle	*Haliaeetus leucocephalus*	S	**Yes**	USDI-FWS (2007) Guidelines apply. Recently de-listed from federally Threatened status and placed on this list (USDA-FS 2007, USDI-FWS 2007b).
Eastern small-footed bat	*Myotis leibii*	S	**Yes**	Suitable habitat in the form of large exposed bluff lines and extensive talus or rock rivers does occur in the immediate project area. Closest record from the Boston Mountain Ranger District is from eastern Crawford Co. along Frog Bayou (Saugey *et al*. 1993; ANHC 2016). This bat was not found during surveys in 2017; however, potential habitat does exist in the project area.

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Isopod (no common name)	*Lirceus bicuspidatus*	S	**Yes**	No records in project area. Closest known occurrence is in Logan Co. (ANHC Records 2016). Arkansas Endemic (Robison and Allen 1995, Robison et al. 2008). Suitable habitat; e.g., seeps and springs exist in the project area.
Longnose darter	*Percina nasuta*	S	**Yes**	Does occur in the project area (Robison and Buchanan 1988, Robison 1992). Several known occurrences are located in Lee Creek, downstream of proposed project area (ANHC Records 2016).
Mount Magazine shagreen	*Mesodon magazinensis*	S	No	Restricted to steep talus slopes in rich mesic hardwood forests on Mt. Magazine (NatureServe Explorer 2017).
Nearctic Paduniellan caddisfly	*Paduniella nearctica*	S	**Yes**	Known from the Wedington Unit of Boston Mountain Ranger District in Washington Co. Closest known occurrences are along Cove Creek and upper Lee Creek in southern Washington Co. @ Devil's Den State Park (ANHC 2016). Suitable habitat includes clear, spring-fed, high-gradient, gravel-bottomed streams.
Oklahoma Salamander	*Eurycea tynerensis*	S	No	Range includes Benton, Washington and Carroll Co. in Arkansas. Range is strictly within the Wedington Unit on the Boston Mountain Ranger District or in the project area (ANHC Records 2016). Suitable habitat includes small, spring-fed streams, at elevations below 305 meters; substrate coarse sand, gravel or bedrock. Closely associated with Ordovician-Silurian strata. May use karst system to move within of between stream systems (Cline and Tumlison 2001, NatureServe Explorer 2017).
Ozark shiner	*Notropis ozarcanus*	S	**Yes**	Closest known occurrences are in Madison and Washington Co. Not known from the Boston Mountain Ranger District (ANHC Records 2016). Suitable habitat includes small to medium clear rivers with high gradient and permanent strong flows (NatureServe Explorer 2017). Suitable habitat exists within the project area.
Southern cavefish	*Typhlichthys subterraneus*	S	No	Not known from the Boston Mountain Ranger District (ANHC Records 2016). Known from cave streams in eastern Ozarks (NatureServe Explorer 2017).
Williams' crayfish	*Orconectes williamsi*	S	**Yes**	In Arkansas, most records are from extreme headwater streams in the White River drainage, but its range has been expanded to the Arkansas River Drainage (Wagner et al. 2010). Closest known occurrences are in Madison and Franklin Co. (ANHC 2016). Suitable habitat includes gravelly, headwater creeks, cave streams, and pools of larger substrates (NatureServe Explorer 2017).
FOREST SERVICE SENSITIVE SPECIES - PLANTS				
Alabama snow-wreath	*Neviusia alabamensis*	S	No	Known from Conway, Faulkner, Newton and Pope Co. Suitable habitat includes riparian areas, forested bluffs, talus slopes, & streambanks on various substrates, soil types, & aspects (NatureServe Explorer 2017). Potential habitat exists in the project area, but the species' has a restrictive range and was absent from 2016 field surveys.
Bush's poppymallow	*Callirhoe bushii*	S	**Yes**	Known occurrences on the Wedington Unit of the Boston Mountain Ranger District, weedy roadside (ANHC Records 2016). Suitable habitat includes highway rights-of-way, fencerows, rocky open woods, and edges of limestone glades.

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Butternut (tree)	*Juglans cinerea*	S	No	Unknown from Boston Mountain Ranger District (ANHC Records 2016). Suitable habitat includes rich, mesic forests, lower slopes, ravines, banks and terraces of creeks and streams and floodplain forests (NatureServe Explorer 2017). Although suitable habitat exists in the project area, the closest localities are in Benton and Newton Cos., and the plant was not found during field surveys in 2016.
French's shooting star	*Dodecatheon frenchii*	S	No	Known only from Newton and Cleburne Co. in Arkansas (ANHC Records 2016, NatureServe Explorer 2017). Habitat includes sandstone ledges, overhangs and bluffs, prefers north- and east-facing exposures. Though suitable habitat exists in the project area, its occurrences are narrowly restricted to areas outside of the project area and was not found during 2016 field surveys
Glade larkspur	*Delphimium treleasei*	S	No	Unknown from Boston Mountain Ranger District. Closest known occurrence in Benton County (ANHC Records 2016). Occurs on limestone/dolomite barrens, slopes, glades, bluffs and rocky roadsides throughout the Ozark highlands (NatureServe Explorer 2017). No suitable habitat (e.g., glades) present.
Gulf pipewort	*Eriocaulon koernickianum*	S	No	Known from Boston Mountain Ranger District on Rosson Hollow Glade in Franklin Co. (ANHC Records 2016). No suitable habitat (e.g., glades) present in the project area.
Large witchalder	*Fothergilla major*	S	No	Known only from Searcy Co.in Arkansas (NatureServe Explorer 2017). Suitable habitat includes bluffs, dry, rocky woodlands, talus slopes and riverbanks. Although potential habitat exists in the project area, its occurrence is restricted to one county and was not found during field surveys in 2016.
Maple-leaved oak	*Quercus acerifolia*	S	No	Unknown from Boston Mountain Ranger District (ANHC Records 2016). Arkansas Endemic known only from Mt. Magazine Ranger District in Logan and Sebastian Co. (Robison and Allen 1995).
Moore's delphinium	*Delphinium newtonianum*	S	No	Unknown from Boston Mountain Ranger District (ANHC Records 2016). Arkansas Endemic (Robison and Allen 1995). Suitable habitat includes rich mesic of dry-mesic forests in the Boston Mtns and Ouachita Mtns of Arkansas (NatureServe Explorer 2017). Although potential habitat exists in the project area, this species is known from a fairly small geographical area outside of the immediate project area, and was not found during field surveys in 2016.
Nuttall's cornsalad	*Valerianella nuttallii*	S	No	Known historic occurrence on Boston Mountain Ranger District in Franklin Co. Closest known location is another historic record in Crawford Co. south of the project area. Associated with shale glades and prairies with shale substrates (ANHC Records 2016). No suitable habitat (e.g., glades) present in the project area.
Open-ground draba	*Draba aprica*	S	No	Known from the Wedington Unit of the Boston Mountain Ranger District in Washington Co. (ANHC Records 2016). In the Ozarks, this species occurs on dolomitic, rocky glade/barren margins with very thin soils (NatureServe Explorer 2017). No suitable habitat present in the immediate project area.

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Ouachita false indigo	*Amorpha ouachitensis*	S	**Yes**	Known from the Boston Mountain Ranger District; Suitable habitat includes clearings of rocky creeks, streams banks, rocky ridges, glades and dry, rocky sandstone slopes (NatureServe Explorer 2017).
Ouachita Mtn. Goldenrod	*Solidago ouachitensis*	S	No	Known distribution does not include Boston Mountain Ranger District; closest occurrence is recorded in Logan Co. (ANHC Records 2016). Suitable habitat includes mesic, wooded, north-facing slopes of the Ouachita Mountains (NatureServe Explorer 2017). No suitable habitat present in immediate project area.
Ovate catchfly	*Silene ovata*	S	**Yes**	Known from Boston Mountain Ranger District. A single historic occurrence is recorded from northeastern Crawford Co. along Hurricane Creek (ANHC Records 2016). Found in rich woods, occasionally in forests with soil over calcareous rocks.
Ozark chinquapin	*Castanea pumila* var. *ozarkensis*	S	**Yes**	Several occurrences in project area. Closest known location in Boston Mountain Ranger District, approx. 0.7 miles northeast of Whitzen Hollow Creek Bridge (ANHC Records 2016). Damage already occurred if it exists it will re-sprout, as long as herbicide not used.
Ozark cornsalad	*Valerianella ozarkana*	S	No	Historic record known from the Boston Mountain Ranger District in northwestern Franklin Co. on White Rock Mountain (ANHC Records 2016). Suitable habitat includes rocky glades and open woods on calcareous soils. Habitat absent from project area.
Ozark least trillium	*Trillium pusillum* var. *ozarkanum*	S	**Yes**	Unknown from Boston Mountain Ranger District. Closest known records are in Madison, Washington & Benton Co. (ANHC Records 2016). Suitable habitat includes dry to mesic oak-hickory upland woods with a partially open canopy (NatureServe Explorer 2017). The plant was not found during field surveys in 2016; however, potential habitat does exist in the project area.
Ozark spiderwort	*Tradescantia ozarkana*	S	**Yes**	Known from Boston Mountain Ranger District; known occurrences upstream of the project area, along Whitzen Hollow Creek (ANHC Records 2016). Habitat includes steep, rocky, & wooded slopes, ravines, bases & lower slopes of bluffs, & dry to moist woodland ledges (NatureServe Explorer 2017).
Royal catchfly	*Silene regia*	S	**Yes**	Known occurrences in Benton, Madison and Washington Co. (ANHC Records 2016). Habitat includes open woodlands, rock outcrops, prairies and along roadsides (NatureServe Explorer 2017).
Southern lady's slipper	*Cypripedium kentuckiense*	S	**Yes**	Several known occurrences in Franklin and Crawford Co. Closest known occurrence is along Frog Bayou floodplain, east of the proposed project area in Crawford Co. (ANHC Records 2016).

***Status:**
P = proposed for federal listing as endangered
E = federal endangered species
T = federal threatened species
S = Amended Regional Forester's Sensitive Species List (2017)

Appendix B
VASCULAR PLANT SURVEY

A vascular plant survey was conducted on September 28th and 29th, 2016 in the Ozark National Forest near the Whitzen Hollow Creek Bridge on State Highway 59 by ARDOT botanist, Kayti Ewing, and Arkansas Natural Heritage Commission botanist, Brent Baker. A total of 138 species were identified. Twelve species (8.7%) are non-native, which were located primarily along the roadside. Non-native species (nn) are noted below. No plant species tracked by the ANHC were located in the project area, and no plant species listed as PETS by the US Forest Service were located in the project area.

TREES (38 species)

Acer negundo	boxelder	
Acer rubrum	red maple	
Acer saccharum	sugar maple	
Albizia julibrissin	mimosa	nn
Betula nigra	river birch	
Carpinus caroliniana	ironwood	
Carya ovata	shagbark hickory	
Carya tomentosa	mockernut hickory	
Celtis laevigata	sugarberry	
Celtis occidentalis	hackberry	
Cercis canadensis	redbud	
Cornus florida	flowering dogwood	
Cornus obliqua	swamp dogwood	
Diospyros virginiana	persimmon	
Fraxinus pennsylvanica	green ash	
Gleditsia triacanthos	honey locust	
Juglans nigra	black walnut	
Juniperus virginiana	eastern red cedar	
Liquidambar styraciflua	sweetgum	
Morus rubra	mulberry	
Nyssa sylvatica	blackgum	
Ostrya virginiana	hop hornbeam	
Pinus echinata	shortleaf pine	
Prunus serotina	black cherry	
Platanus occidentalis	sycamore	
Populus deltoides	cottonwood	
Quercus alba	white oak	
Quercus falcata	southern red oak	
Quercus muehlenbergii	Chinquapin oak	
Quercus rubra	northern red oak	
Quercus shumardii	Shumard's oak	
Quercus stellata	post oak	
Quercus velutina	black oak	
Rhamnus caroliniana	Carolina buckthorn	
Robinia pseudoacacia	black locust	
Salix caroliniana	Carolina willow	
Sassafras albidum	sassafras	
Ulmus rubra	slippery elm	

SHRUBS (9 species)

Alnus serrulata	hazel alder	
Amorpha fruticosa	bastard indigo	
Cephalanthus occidentalis	buttonbush	
Hamamelis vernalis	Ozark witch hazel	
Hydrangea arborescens	wild hydrangea	
Lindera benzoin	spicebush	
Rhus glabra	smooth sumac	
Rosa carolina	Carolina rose	
Symphoricarpos orbiculatus	coralberry, buckbrush	

WOODY VINES and BRAMBLES (9 species)

Ampelopsis arborea	peppervine	
Ampelopsis cordata	heartleaf peppervine	
Campsis radicans	trumpet creeper	
Lonicera japonica	Japanese honeysuckle	nn
Parthenocissus quinquefolia	Virginia creeper	
Rubus sp.	blackberry	
Smilax rotundifolia	round leaf brier	
Toxicodendron radicans	poison ivy	
Vitis rotundifolia	muscadine grape	

DICOT FORBS (62 species)

Agertina altissima	white snakeroot	
Ambrosia artemisiifolia	annual ragweed	
Ambrosia trifida	giant ragweed	
Boehmeria cylindrica	false nettle	
Bidens aristosa	bearded beggarticks	
Centaurea stoebe ssp. *micranthos*	spotted knapweed	nn
Cirsium altissimum	tall thistle	
Conoclinium coelestinum	blue mist flower	
Cunila origanoides	dittany	
Datura stramonium	jimsonweed	
Desmodium sp.	tick trefoil	
Diodia virginiana	Virginia buttonweed	
Eclipta prostrata	false daisy	
Elephantopus carolinianus	Carolina elephantsfoot	
Eupatorium serotinum	late boneset	
Euphorbia maculata	spotted spurge	
Fleischmannia incarnata	pink thoroughwort	
Galium aparine	bedstraw	
Grindelia lanceolata	narrowleaf gumweed	
Helianthus hirsutus	hairy sunflower	
Ipomoea lacunosa	white morning-glory	
Iris cristata	dwarf crested iris	
Justicia americana	American water willow	
Lactuca canadensis	Canada lettuce	
Lespedeza cuneata	sericea lespedeza	nn
Leucospora multifida	narrowleaf paleseed	
Lobelia cardinalis	cardinal flower	

Ludwigia decurrens	wingleaf primrose-willow	
Mimulus alatus	winged monkeyflower	
Oxalis stricta	yellow woodsorrel	
Packera obovata	roundleaf ragwort	
Passiflora incarnata	purple passionflower	
Pedicularis canadensis	wood betony	
Perilla fructescens	beefsteak plant	
Persicaria hydropiperoides	swamp smartweed	
Persicaria lapathifolia	curlytop knotweed	
Persicaria longiseta	lady's thumb	nn
Persicaria pensylvanicum	Pennsylvania smartweed	
Pluchea camporata	camphor weed	
Polanisia dodecandra	clammy weed	
Polygonum virginianum	woodland knotweed	
Pseudognaphalium obtusifolium	rabbit tobacco	
Rotala ramosior	toothcup	
Rudbeckia laciniata	cutleaf coneflower	
Saponaria officinalis	soapwort	nn
Sanicula canadensis	black snakeroot	
Senna marilandica	Maryland senna	
Senna obtusifolia	sicklepod	
Smallanthus uvedalius	hairy leafcup	
Solanum carolinense	Carolina horsenettle	
Solidago altissima	Canada goldenrod	
Solidago caesia	blue-stemmed goldenrod	
Symphyotrichum sp.	aster	
Symphyotrichum anomalum	many rayed aster	
Symphyotrichum drummondii	Drummond's aster	
Symphyotrichum lateriflorum	calico aster	
Thaspium barbinode	hairy-jointed meadow parsnip	
Thaspium trifoliatum	purple meadow parsnip	
Verbesina alternifolia	wingstem	
Verbesina encelioides	golden crownbeard	
Vernonia gigantea	tall ironweed	
Xanthium strumarium	rough cocklebur	

GRASSES AND SEDGES (16 species)

Aira sp.	hairgrass	nn
Arthraxon hispidus	small carpetgrass	nn
Arundinaria gigantea	giant cane	
Chasmanthium latifolium	inland sea oats	
Cyperus echinatus	globe flatsedge	
Cyperus strigosus	straw colored flatsedge	
Dichanthelium sp.	panicgrass	
Digitaria sp.	crabgrass	nn
Eleocharis lanceolata	daggerleaf spikerush	
Elymus canadensis	Canada wildrye	
Kyllinga gracillima	pasture spikesedge	nn
Leersia virginica	white grass	
Microstegium vimineum	Japanese stiltgrass	nn
Setaria parviflora	marsh bristlegrass	
Sorghum halepense	Johnson grass	nn
Tridens flavus	purpletop	

FERNS AND FERN ALLIES (4 species)

Adiantum pedatum	northern maidenhair fern
Asplenium platyneuron	ebony spleenwort
Equisetum sp.	horsetail
Polystichum acrosticoides	christmas fern

Appendix C
CONSULTATION HISTORY WITH US FISH AND WILDLIFE SERVICE

In January of 2015 and 2016, ARDOT requested technical assistance from our USFWS liaison, Mr. Lindsey Lewis, as the guidance regarding federally listed bat species was in constant fluctuation. Based on current guidance, at that time, surveys were not necessary for Indiana bat, northern long-eared bat or gray bat, and surveys solely for Ozark big-eared bat were discouraged due to their sensitivity and the likelihood of their presence. With the current bat guidelines established under the 2016 FHWA Range-Wide Programmatic and the accompanying 2016 Programmatic Biological Opinion and the 2016 Final 4(d) Rule, consultation with US Fish and Wildlife Service occurred in October 20, 2017, and concurrence was received on October 31, 2017, please see corresponding documents below. ARDOT assumed presence for the aforementioned federally listed bat species. Bat surveys were conducted on nearby highway projects—the Highway 59 slope repair in 2017 and the paving of Highway 220 from Devil's Den to Lee Creek in 2016. Both surveys resulted in capture of federally listed bat species; therefore, ARDOT found the assumption of federally listed bat species appropriate.

ARDOT proposes to replace four bridges along an 11-mile stretch of Highway 59. Due to the larger extent of this highway construction project, as only one bridge is on National Forest Service property, ARDOT determined that earlier consultation would be beneficial to keep this project timely. Under consultation with the Service, ARDOT utilized the FHWA Range-Wide Programmatic, the accompanying Biological Opinion and the Final 4(d) Rule.

A 'may affect, not likely to adversely affect' determination was made for the Ozark big-eared bat and gray bat, see correspondence with USFWS below. The Final 4(d) Rule was applied to the northern long-eared bat, which exempts the project from any incidental take, as long as the project and its activities do not occur within 0.25 miles of a known hibernaculum or within 150 feet of a known, occupied maternity roost. The Final 4(d) forms, Bridge Assessment Forms and the Project submittal form can be found below.

A 'likely to adversely affect' determination was made for the Indiana bat. Under the FHWA Range-Wide Programmatic, if the proposed project has tree clearing activities greater than 0.5 mile from a known hibernacula, and the project's proposed footprint is further out than 100' from the existing roadway, there is not a negative presence/absence survey, and a winter clearing restriction is placed on the job, then a 'likely to adversely affect' call is concluded. Furthermore, USFWS consultation was for the entire project's impacts on the species' foraging and roosting habitat, as all four bridge replacements are likely to convert 11.5 acres of forested habitat to highway right-of-way. Voluntary compensatory mitigation was fulfilled at the Department's Kings River Falls Conservation Mitigation Bank for adverse effects to the endangered Indiana bat.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arkansas Ecological Service Field Office
110 South Amity Road, Suite 300
Conway, Arkansas 72032

IN REPLY REFER TO:

October 31, 2017

Mr. John Fleming
c/o Kayti Ewing
Arkansas Department of Transportation
10324 Interstate 30
Little Rock, Arkansas 72209

Consultation Code: 04ER1000-2017-SLI-1381

Dear Mr. Fleming,

The U. S. Fish and Wildlife Service (Service) has reviewed your assessment and determinations for Arkansas Department of Transportation (ArDOT) plans to replace four bridges along a seven (7) mile stretch of Highway 59 in Crawford County, Arkansas. This action may rely on the December 15, 2016, Programmatic Biological Opinion (BO) for federally funded or approved transportation projects that may affect the Indiana Bat (*Myotis sodalis*) and/or Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*). We received your request and the associated Project Submittal Form on October 20, 2017. The project was described and assessed as follows (abbreviated):

> The existing roadway consists of two 12' wide paved travel lanes with no shoulders. Proposed improvements include replacing 4 bridges—one across Low Gap Hollow Creek (Site 1, Bridge# 2815), one across Mountain Fork Creek (Site 2, Bridge# 2814), one across Whizzen Hollow Creek (Site 3, Bridge# 2813), and one across Huey Creek (Site 4, Bridge# 2621)—along Highway 59.
>
> The replacement of three out of the four bridges (Sites 1, 3, and 4; Bridges 2815, 2813, and 2621) along Highway 59 will require temporary detours, as those bridges will be replaced on existing location. Site 1, Bridge# 2815 will have a temporary detour to the east of the existing bridge and Highway 59. At Site 1, approximately 3.6 acres of forested habitat will be cleared for construction of detour. Site 3, Bridge# 2813 is located within the Ozark National Forest and will have a temporary detour to the north of the existing bridge, east side of Highway 59. At Site 3, approximately 2.1 acres of forested habitat will be cleared for construction of detour. Site 4, Bridge# 2621 will have a temporary detour northeast of the existing bridge, east side Highway 59. At Site 4, approximately 2.2 acres of forested habitat will be cleared for construction of detour. Site 2, Bridge# 2814 will be replaced on new location, just southwest of the existing bridge and west of Highway 59. At Site 2, approximately 3.6 acres of forested habitat will be cleared for bridge construction.

According to the Information for Planning and Consultation (IPaC) website, there are eight (8) endangered species that have the potential to be impacted by the project. These species include: the endangered Gray Bat (*Myotis grisescens*), the threatened Northern Long-eared Bat (*Myotis septentrionalis*), the endangered Indiana Bat (*Myotis sodalis*), the endangered Ozark Big-eared Bat (*Corynorhinus townsendii ingens*), the threatened Missouri Bladderpod (*Physaria filiformis*), the threatened Ozark Cavefish (*Troglichthys rosae*), the threatened Piping Plover (*Charadrius melodus*), and the endangered American Burying Beetle (*Nicrophorus americanus*).

Arkansas Natural Heritage Commission's (ANHC) records database indicates several known roost cave locations for the Ozark Big-eared Bat near the project area. The closest recorded occurrence is an Ozark Big-eared Bat roost cave approximately 900 feet southeast of Site 1, Bridge 2815 over Low Gap Hollow Creek. There are two other nearby occurrences of Ozark Big-eared Bat roost caves, approximately 0.4 mile northeast and 0.9 mile south of Site 1. There are additional known records of Ozark Big-eared Bat roost caves, 1.2 and 1.5 miles north of Site 1 in caves: WA3301, WA3302, WA3311, and Garrett Hollow Cave, all in Washington County. Another known Ozark Big-eared Bat roost cave is located approximately 1.5 miles northeast of Site 2. The Ozark Plateau National Wildlife Refuge, located in Adair County Oklahoma, has known hibernacula for the Ozark Big-eared Bat, approximately 3 miles west of the project area.

Ozark Big-eared Bats inhabit caves year round, which are typically located in oak-hickory forests. Weyandt et al. (2005) and Graening et al. (2011) suggest that Ozark Big-eared Bats could also use bluff faces and bluff lines as roosting habitat, and these types of habitat could potentially garner additional populations. During the summer months, Ozark Big-eared Bats primarily forage in forests and along forest edges. Ozark Big-eared Bats typically only forage a little over one mile from their roosting site (Graening et al. 2011). Although, a couple of studies tracked the movement of the Ozark Big-eared Bats and found the longest distances traveled in a 24 hour period were up to 5.0 miles (Graening et al. 2011; Wethington et al. 1996). ArDOT will include a special provision requiring that construction activities not occur 30 minutes prior to sunset and 30 minutes prior to sunrise. ArDOT is anticipating that the bridges will be multi-column concrete bents on a spread-footing, so no blasting or drilling will be required during bridge construction. Based on the winter clearing and day time construction special provisions that will be included on this job, it is our determination that the project **"may affect, not likely to adversely affect"** Ozark Big-eared Bats.

Crawford County is within the known range of the federally threatened Northern Long-eared Bat. The project and its activities do not occur within 0.25 mile of a known hibernaculum or within 150 feet of a known occupied maternity roost,

which exempts the project from incidental take of Northern Long-eared Bats, according to the final 4(d) rule and accompanying programmatic biological opinion. The project will have a winter clearing only restriction included in the job, which prohibits tree clearing during April 1 to October 1. **(A Final 4(d) form and Bridge Assessment form for each site and the Project Submittal form were attached)**.

A summer mist net survey was conducted in July of 2017, for a slide repair project on Highway 59 in Washington County, a mist net site was setup approximately 0.1 mile north of Site 1. Results from this survey confirmed the presence of Ozark Big-eared Bats and Northern Long-eared Bats, as both species were captured at mist net survey locations 35°45'38.9", -94°28'11.2" and 35°45'35.9", -94°28'10.8", respectively. This survey also identified seven (7) Northern Long-eared Bat diurnal roost trees; the closest known roost tree is in Washington County, approximately 715 feet north of the Site 1. No Indiana Bats or Gray Bats were captured during this survey. A bridge assessment was conducted on 9/28/2016 for all four bridges, and no evidence of bat use was found.

Gray Bats are year-round cave dwellers. They hibernate in deep, vertical caves in winter and roost in limestone karst caves along rivers in summer months. The closest known occurrence is a roost cave in Franklin County, approximately 30 miles east of the project area that support Gray Bats. Although the project area is largely forested and contains habitat that is suitable for foraging, a winter clearing only restriction, as well as a day time construction only special provision will be included in the job. Furthermore, during a recent summer mist net survey (July 2017) nearby, no Gray Bats were captured or recorded acoustically. Therefore, it is our determination that the project **"may affect, not likely to adversely affect"** Gray Bats.

Indiana Bats are known to roost underneath the peeling bark of dead or dying trees in intact forests within medium river and stream corridors and forests within 1 to 3 miles of small to medium rivers and streams and upland forests. Indiana Bats hibernate in caves during winter. The closest known occurrence is approximately 12 to 13 miles northeast, east of the project area, in Devil's Den State Park. Although the project area is within the Indiana Bats' range, is forested, and habitat that is suitable for foraging, a winter clearing only restriction, as well as a day time construction only special provision will be included in the job. Furthermore, during a recent summer mist survey (July 2017) nearby, no Indiana Bats were captured or recorded acoustically. Therefore, it is our determination that the project is **"likely to adversely affect"** Indiana Bats. (Bridge Assessment forms for each site and the Project Submittal form for the Programmatic Biological Opinion were attached).

The Missouri Bladderpod is found on open limestone, dolomite, sandstone, shale glades, barrens, and outcrops within prairies. There are no known occurrences or habitat near the project area; therefore, it is our determination that the project will have **"no effect"** on the Missouri Bladderpod.

The Ozark Cavefish lives in cave streams and springs. The Ozark Cavefish is found within the Springfield Plateau of the Ozark Highlands in Arkansas, Missouri, and Oklahoma. The Ozark Cavefish is known from a few caves in Washington County. Major threats to the Ozark Cavefish include groundwater pollution and destruction and disturbance of habitat (i.e., caves). There are known occurrences in close proximity to the project area. There are no known caves that support the Ozark Cavefish nearby; therefore, it is our determination that the project will have **"no effect"** on the Ozark Cavefish.

The proposed project is outside of the American Burying Beetle consultation area; therefore, it is our determination that the project will have **"no effect"** on American Burying Beetle.

The Piping Plover is a migratory bird. In the spring and summer, they breed in the northern United States and Canada. Piping Plovers use wide, flat, open, sandy beaches with very little vegetation; nesting habitat often includes small creeks or wetlands. In the fall, plovers migrate south and winter along the coast of the Gulf of Mexico and other southern locations. During fall and spring migration, Piping Plovers use rest sites including shorelines of lakes, rivers, and wetlands with muddy sandy substrates. Migration rest area habitat is not well documented, but migrating Piping Plovers have been observed in Arkansas, mostly along the Arkansas River; however, the project area is devoid of such habitat (i.e., large rivers); therefore, it is our determination that the project will have **"no effect"** on the Piping Plover.

This letter provides the Service's response as to whether the Project may rely on the BO to comply with Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) for its effects to the Indiana Bat and/or NLEB. This letter also responds to your request for Service concurrence that the Project may affect, but is not likely to adversely affect (NLAA) ESA-listed species and/or designated critical habitats other than the Indiana Bat and NLEB.

The ArDot has determined that the Project is likely to adversely affect (LAA) the Indiana Bat. Additionally, the Arkansas Department of Transportation has also determined that the Project is not likely to adversely affect (NLAA) Gray Bat and Ozark Big-eared Bat.

The Service concurs with these determination(s), because of the results of the survey and the proximity of known species sites and foraging range to the project location and the occurrence of

suitable foraging habitat for these species that exists on and adjacent to the site. A determination of LAA for Indiana Bat is appropriate based on the amount and distance from the existing roadway of suitable habitat being lost, the conservation measures being proposed, winter clearing (non-reproductive season) only provisions, and the proposed implementation of all required AMMs. Furthermore, the distance to known Gray Bat roosting and hibernacula sites, time of day restrictions, winter clearing only, off-site restraining conditions, and standard sediment controls, warrants a NLAA determination for these species. This concurrence concludes your ESA Section 7 responsibilities relative to Indiana Bat, Gray Bat, and Ozark Big-eared Bat for this Project, subject to the Reinitiation Notice below.

Conclusion

The Service has reviewed the effects of the proposed Project, which includes the ArDOT's commitment to implement any applicable mitigation measures as indicated on the Project Submittal Form. We confirm that the proposed Project's effects are consistent with those analyzed in the BO. The Service has determined that projects consistent with the conservation measures and scope of the program analyzed in the BO are not likely to jeopardize the continued existence of the Indiana Bat and/or the NLEB. In coordination with your agency and the other sponsoring Federal Transportation Agencies, the Service will reevaluate this conclusion annually in light of any new pertinent information under the adaptive management provisions of the BO.

Incidental Take

Indiana Bat

The Service anticipates that tree removal associated with the proposed Project will cause incidental take of Indiana Bats. As described in the Incidental Take Statement (ITS) of the BO, such taking will be difficult to detect. The Service determined that it is appropriate to measure the amount or extent of incidental take resulting from BO projects using the proposed acreage of tree removal from Indiana Bat suitable habitat as a surrogate for the numbers of individuals taken.

The proposed Project will remove 11.5 acres of trees from habitat that is suitable for the Indiana Bat. All tree removal will occur in winter and comply with all other conservation measures in the BO. Based on the BO, 11.5 acres are anticipated to result in adverse effects and the ArDot will provide 17.25 acres (ratio 1.5/1) of forested habitat preservation at the ArDOT King River Falls Site near Witter, Madison County, Arkansas.

In addition, the Project may take up to 5 Indiana Bats that were not detected during bridge bat assessments conducted prior to implementing the proposed work on Bridge# 2815, Bridge# 2814, Bridge# 2813, and Bridge# 2621. Although such take is reasonably certain to occur at up to 10 bridge projects per year, as included in the scope of the BO, it is a remote possibility for any individual project that is implemented consistent with the conservation measures of the BO.

The Service will add the acreage of Project-related tree removal to the annual total acreage attributed to the BO as a surrogate measure of Indiana Bat take and exempted from the prohibitions against incidental taking. Such exemption is effective as long as your agency implements the reasonable and prudent measure (RPM) and accompanying terms and conditions of the BO's ITS.

The sole RPM of the BO's ITS requires the Federal Transportation Agencies to ensure that state/local transportation agencies, who choose to include eligible projects under the programmatic action, incorporate all applicable conservation measures in the project proposals submitted to the Service for ESA section 7 compliance using the BO. The implementing terms and conditions for this RPM require the Federal Transportation Agencies to offer training to appropriate personnel about using the BO, and about promptly reporting sick, injured, or dead bats (regardless of species) (or any other federally listed species) located in project action areas.

Northern Long-eared Bat

The Service anticipates that tree removal associated with the proposed Project will cause incidental take of NLEBs. However, the Project is consistent with the BO, and such projects will not cause take of NLEB that is prohibited under the ESA section 4(d) rule for this species (50 CFR §17.40(o)). Therefore, the take of NLEBs resulting from this project does not require exemption from the Service.

Reporting Dead or Injured Bats

The Arkansas Department of Transportation, its state/local cooperators, and any contractors must take care when handling dead or injured Gray Bats, Indiana Bats, and/or NLEBs, or any other federally listed species that are found at the Project site to preserve biological material in the best possible condition and to protect the handler from exposure to diseases, such as rabies. Project personnel are responsible for ensuring that any evidence about determining the cause of death or injury is not unnecessarily disturbed. Reporting the discovery of dead or injured listed species is required in all cases to enable the Service to determine whether the level of incidental take exempted by this BO is exceeded, and to ensure that the terms and conditions are appropriate and effective. Parties finding a dead, injured, or sick specimen of any endangered or threatened species must promptly notify this Service Office.

Reinitiation Notice

This letter concludes consultation for the proposed Project, which qualifies for inclusion in the BO issued to the Federal Transportation Agencies. To maintain this inclusion, a reinitiation of this Project-level consultation is required where the Arkansas Department of Transportation's discretionary involvement or control over the Project has been retained (or is authorized by law) and if:

1. the amount or extent of incidental take of Indiana Bat is exceeded;

2. new information reveals that the Project may affect listed species or critical habitat in a manner or to an extent not considered in the BO or in the Project information that supported Service concurrence with the NLAA determination;

3. the Project is subsequently modified in a manner that causes an effect to listed species or designated critical habitat not considered in the BO or in the Project information that supported Service concurrence with NLAA determination; or

4. a new species is listed or critical habitat designated that the Project may affect.

Per condition #1 above, the anticipated incidental take is exceeded when:

- the Project removes trees from more than 11.5 acres of habitat suitable for the Indiana Bat; or

- the Project takes more than 5 Indiana Bats resulting from work on bridges associated with the action.

In instances where the amount or extent of incidental take is exceeded, the Arkansas Department of Transportation is required to immediately request a reinitiation of formal consultation. Please note that the Service cannot exempt from the applicable ESA prohibitions any action-caused take that exceeds the amount or extent specified in the ITS of this BO that may occur before the reinitiated consultation is concluded.

We appreciate your continued efforts to ensure that this Project is fully consistent with all applicable provisions of the BO. If you have any questions regarding our response or if you need additional information, please contact Lindsey Lewis at (501) 513-4489 or lindsey_lewis@fws.gov

Sincerely,

Melvin L. Tobin
Field Supervisor

Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Administration (FTA)

Range-wide Programmatic Consultation for
Indiana Bat and Northern Long-eared Bat

Project Submittal Form

Updated December 2016

If not using the Assisted Determination Key in the U.S. Fish and Wildlife Service (Service) Information for Planning and Conservation (IPaC) System, transportation agencies must provide this submittal form (or a comparable Service approved form) with provide project-level information for use of the range-wide programmatic consultation covering actions that may affect the Indiana bat and/or northern long-eared bat (NLEB). The completed form should be submitted to the appropriate Service Field Office prior to project commencement. For more information, see the Standard Operating Procedure for Site Specific Project(s) Submission in the User's Guide.

By submitting this form, the transportation agency ensures that the proposed project(s) adhere to the criteria and conditions of the range-wide programmatic consultation, as outlined in the biological assessment (BA) and biological opinion (BO). Upon submittal of this form, the appropriate Service Field Office may review the project-specific information provided and request additional information. For projects that may affect, but are not likely to adversely affect (NLAA) the Indiana bat and/or NLEB, if the applying transportation agency is **not** contacted by the Service with any questions or concerns within 14 calendar days of form submittal, it may proceed under the range-wide programmatic consultation and assume concurrence of the NLAA determination made by the Service in the BO. For projects that may affect, and are likely to adversely affect (LAA) the Indiana bat and/or the NLEB, the appropriate Service Field Office will respond (see recommended response letter template) within 30 calendar days of receiving a complete project-level submission, which includes, but may not be limited to this completed form.

Further instructions on completing the submittal form can be found by hovering your cursor over each text box.

---

1. Date: 10/20/2017

2. Lead agency: FHWA
   This refers to the Federal governmental lead action agency initiating consultation; select FHWA, FRA or FTA as appropriate.

3. Requesting agency: ArDOT
   This refers to the transportation agency completing the form (it may or may not be the same as the Lead Agency.

   Name: Kayti Ewing

   Title: Botanist

Phone: 501-569-2083

Email: anne.ewing@ardot.gov

4. Consultation code[1]: 04ER1000-2017-SLI-1381

5. Project name(s): 040622 Washington Co Line-South Strs. & Apprs. (S)

6. Project description:
Please attach additional documentation or explanatory text if necessary

The Arkansas Department of Transportation (ArDOT) plans to replace four bridges along a seven (7) mile stretch of Highway 59 in Crawford County. Three of the bridges will be replaced on existing with a detour, and one bridge, over the Mountain Fork, will be replaced on new location. One of the bridges, over Whizzen Hollow Creek, is located within the Ozark National Forest. At Site 1, approximately 3.6 acres of forested habitat will be cleared for the temporary detour. At Site 2, approximately 3.6 acres of forested habitat will be cleared for the temporary detour. At Site 3, approximately 2.1 acres of forested habitat will be cleared for the temporary detour. At Site 4, approximately 2.2 acres of forested habitat will be cleared for the temporary detour. A total of 11.5 acres of forested habitat will be cleared for the replacement of four bridges along Highway 59 in Crawford County.

7. Project location (county, state): Crawford County, Arkansas
If not delineated in IPaC, attach shape files

8. For species other than Indiana bat and NLEB (from IPaC official species list):

☐ No effect – project(s) are inside the range, but no suitable habitat (see additional information attached).

☑ May affect – see additional information provided for those species (see attached or forthcoming).

Please confirm and identify how the proposed project(s) adhere to the criteria of the BO by completing the following (see User Guide Section 2.0):

[1] Available through IPaC System Official Species List: https://ecos.fws.gov/ipac/

NO EFFECT

9. For Indiana bat/NLEB, if applicable, select your no effect determination:

☐ No effect – project(s) are outside the species' range. *submittal form complete*

☐ No effect – project(s) are inside the species range with no suitable summer habitat; project(s) must also be greater than 0.5 miles from any hibernaculum unless meeting exceptions listed below. *submittal form complete*

☐ No effect – project(s) do not involve any construction activities (e.g., bridge/ abandoned structure assessments, property inspections, planning and technical studies, property sales, property easements, and equipment purchases). *submittal form complete*

☐ No effect – project(s) are completely within existing road/rail surface and do not involve percussive or other activities that increase noise above existing traffic/ background levels (e.g., road line painting). *submittal form complete*

☐ No effect - project(s) are outside suitable summer bat habitat and limited to the maintenance of existing facilities (e.g., rest areas, stormwater detention basins) with no new ground disturbance.

☐ No effect – project(s) includes maintenance, alteration, or removal of bridge(s)/ structure(s) and indicate(s) no signs of bats from results of a bridge/abandoned structure assessment. *submittal form complete*
Otherwise, please continue below.

MAY AFFECT, NOT LIKELY TO ADVERSELY EFFECT – W/O AMMS

10. For Indiana bat/NLEB, if applicable, select your may affect, NLAA determination (without implementation of AMMs):

☐ NLAA – project(s) are inside the species range and within suitable bat habitat, but **negative** bat presence/absence (P/A) surveys; must also be greater than 0.5 miles from any hibernaculum. *submittal form complete*

☐ NLAA – project(s) are within 300 feet of the existing road/rail surface and in area that contain suitable habitat (but no documented habitat) that do not involve tree removal, but include percussives or other activities that increase noise above existing traffic/background levels (must also be greater than 0.5 miles of a hibernaculum). *submittal form complete*

☐ NLAA – project(s) are limited to slash pile burning (must also be greater than 0.5 miles from any hibernaculum). *submittal form complete*

☐ NLAA – project(s) are limited to wetland or stream protection activities associated

with compensatory wetland mitigation that do not clear suitable habitat (must also be greater than 0.5 miles from any hibernaculum). *submittal form complete*

☐ NLAA – project(s) *anywhere*, including within 0.5 mile of hibernacula, with suitable summer bat habitat present that are limited to the maintenance of existing facilities (e.g., rest areas, stormwater detention basins) with no new ground disturbance or tree removal/trimming. *submittal form complete*

Otherwise, please continue below.

MAY EFFECT, NOT LIKELY TO ADVERSELY AFFECT – WITH AMMs

11. For Indiana bat/NLEB, if applicable, document your may affect, NLAA determination by completing the following section (**with implementation of AMMs**; use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

☑ Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum

☐ Verify that the project is within 100 feet of existing road/rail surfaces

☑ Verify that no documented Indiana bat and/or NLEB roosts and/or surrounding summer habitat within 0.25 mile of documented roosts will be impacted

Verify that all tree removal will occur outside the active season (i.e., will occur in winter)[2]: winter

Acres of trees proposed for removal: 11.5

b. Bridge/Structure Work Projects

Proposed work: Bridge Replacements (4 bridges to be replaced)

Timing of work: Inactive/Active Season

Evidence of bat activity on/in bridge/structure? Yes: ◯ No: ◯

☐ Verify that work will be conducted outside the active season, or if during the active season, verify that no roosting bats will be harmed or disturbed in any way

☐ Verify that work will not alter roosting potential in any way

[2] Coordinate with the local Service Field Office for appropriate dates

☐ Verify that all applicable lighting minimization measures will be implemented

MAY AFFECT, LIKELY TO ADVERSELY AFFECT

12. For Indiana bat/NLEB, if applicable, document your may affect, LAA determination by completing the following section (use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

☑ Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum

Project Location:
☐ 0-100 feet from edge of existing road/rail surface
☑ 100-300 feet from edge of existing road/rail surface

☑ Verify that no documented Indiana bat roosts or surrounding summer habitat within 0.25 mile of documented roosts will be impacted between May 1 and July 31

☑ Verify that no documented NLEB roosts or surrounding summer habitat within 150 feet of documented roosts will be impacted between June 1 and July 31

Timing of tree removal: winter

Acres of trees proposed for removal: 11.5

b. Bridge/Structure Work Projects

Proposed work: Bridge Replacements (4 bridges to be replaced)

Timing of work: inactive/active season

☑ Verify no signs of a colony

☑ Verify that work will not alter roosting potential in any way

13. For Indiana bat/NLEB, **if applicable to the action type**, the following AMMs will be implemented[3] unless P/A surveys and/or bridge/abandoned structure assessments[4] have occurred to document that the species are not likely to be present:

General AMM 1 (required for all projects):

[3] See AMMs Fact Sheet (Appendix C) for more information on AMMs
[4] Structure assessment for occupied buildings means a cursory inspection for bat use. For abandoned buildings a more thorough evaluation is required (See User Guide Appendix D for bridge/abandoned structure assessment guidance).

☑ Tree Removal AMM 1
☑ Tree Removal AMM 2 (required for NLAA)
☑ Tree Removal AMM 3 (required for all projects)
☑ Tree Removal AMM 4 (required for NLAA)
☑ Tree Removal AMM 5 (required for LAA)
☑ Tree Removal AMM 6 (required for LAA)
☑ Tree Removal AMM 7 (required for LAA)

☐ Bridge AMM 1
☑ Bridge AMM 2 (required for all projects during active season)
☐ Bridge AMM 3 (required for NLAA during active season)
☐ Bridge AMM 4 (required for NLAA during active season)
☑ Bridge AMM 5 (required for all projects)

Structure AMMs are required for all Indiana bat projects, required for NLAA NLEB projects.

☐ Structure AMM 1
☐ Structure AMM 2
☐ Structure AMM 3
☐ Structure AMM 4

☐ Lighting AMM 1 (required for all projects during the active season)
☐ Lighting AMM 2 (required for all projects)

☑ Hibernacula AMM 1 (required for all projects)

14. For Indiana bat, if applicable, compensatory mitigation measures will also be required to offset adverse effects on the species (see Section 2.10 of the BA). Please verify the mechanism in which compensatory mitigation will be implemented and that sufficient information is provided to the Service.

Range-wide In-Lieu Fee Program, The Conservation Fund ☐

State, Regional, Recovery Unit-Specific In-Lieu Fee Program
Name:

Conservation Bank
Name:
Location:

Local Conservation Site(s)
Name: Kings River Falls
Location: Madison County; Witter, Arkansas
Description: Preservation of 17.25 acres (ratio 1.5/1)

APPENDIX D: Bridge/Structure Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside; from activities above that bore down to the underside; from activities that could impact expansion joints; from deck removal on bridges; or from structure demolition for bridges/structures within 1000 feet of suitable bat habitat.

DOT Project #	Water Body	Date/Time of Inspection	Within 1,000ft of suitable bat habitat (circle one)
040622	Whitzen Hollow Creek	9/28/2016	**Yes** / **No**

Route	County	Federal Structure ID
59	Crawford	Bridge# 2813

If the bridge/structure is 1,000 feet or more from suitable bat habitat (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check box and STOP HERE. No assessment required. ☐
Please submit to the U.S. Fish and Wildlife Service.

Areas Inspected (Check all that apply)

Bridges		Culverts/Other Structures		Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	✓	**Crevices, rough surfaces or imperfections in concrete**		**Human disturbance or traffic under bridge/in culvert or at the structure**	High	Low	None
All crevices >12" deep & not sealed	✓	**Spaces between walls, ceiling joists**		**Possible corridors for netting**	None/poor	Marginal	Excellent
All guardrails	✓						
All expansion joints	✓						
Spaces between concrete end walls and the bridge deck	✓						

Last Revised May 31, 2017

Vertical surfaces on concrete I-beams	✓						

Evidence of Bats (Circle all that apply) Presence of one or more indicators is sufficient evidence that bats may be using the structure.

None

Visual (e.g. survey, thermal, emergent etc.)

- Live __number seen
- Dead __number seen

Photo documentation Y/N

Guano

Odor Y/N

Photo documentation Y/N

Staining definitively from bats

Photo documentation Y/N

Audible

Assessment Conducted By: Kayti Ewing **Signature(s):** Kayti Ewing

District Environmental Use Only: Date Received by District Environmental Manager: _____

DOT Bat Assessment Form Instructions

1. Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges, regardless of whether assessments have been conducted in the past.
2. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has coordinated with the USFWS. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
3. Any questions should be directed to the District Environmental Manager.

Last Revised June 2017

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☒
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☒	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☒
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☒
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☒
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☒

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant[3] (Name, Email, Phone No.): Kayti Ewing, anne.ewing@ardot.gov, 501-569-2083

Project Name: 040622, Washington Co. Line-South Strs. & Apprs.

Project Location (include coordinates if known): Crawford County, 35.692860°, -94.467589°

Basic Project Description (provide narrative below or attach additional information): ArDOT plans to replace the existing Highway 59 bridge over Whizzen Hollow Creek (Bridge# 2813) on existing location. Site 3 is located within the Ozark National Forest. A temporary detour will be required for the maintenance of traffic; the detour will go to the north of the existing bridge and east of Highway 59. See kmz design file for more detailed information. A winter clearing restriction will be placed on the job.

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf

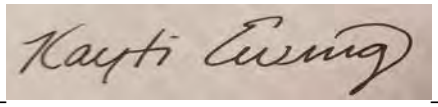
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html

[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information

	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☒
Does the project occur within 150 feet of a known maternity roost tree?	☐	☒
Does the project include forest conversion[4]? (if yes, report acreage below)	☒	☐
Estimated total acres of forest conversion	~ 2.1 acre	
If known, estimated acres[5] of forest conversion from April 1 to October 31	0	
If known, estimated acres of forest conversion from June 1 to July 31[6]	0	
Does the project include timber harvest? (if yes, report acreage below)	☐	☒
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☒
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☒
Estimated wind capacity (MW)		

Agency Determination:
By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.
If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.
The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: _____  _____ Date Submitted: __10/19/2017___

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

ARDOT ENVIRONMENTAL IMPACTS ASSESSMENT FORM

ARDOT Job Number 040622 **FAP Number** STPR-0072(46)

Job Title Washington Co. Line – South Strs. & Apprs. (S)

Environmental Impacts	None	Minor	Significant	Comments
Air Quality	X			
Construction Impacts		X		Traffic maintained during construction
Cultural Resources	X			
Economic	X			
Endangered Species		X		Multiple effect determinations: see CE/BE
Energy Resources	X			
Environmental Justice/Title VI	X			
Fish and Wildlife		X		Minor loss of habitat
Floodplains		X		SFHA Zone A
Forest Service Property		X		OSFNF: 0.03 acre ROW, 0.29 acre TCE
Hazardous Materials/Landfills	X			
Land Use Impacts		X		4.6 acres proposed ROW, 1.3 acre TCE
Migratory Birds		X		Migratory bird SP added to contract
Navigation/Coast Guard	X			
Noise Levels	X			
Prime Farmland		X		4.45 acres prime, 0.01 acre statewide imp.
Protected Waters	X			
Public Recreation Lands	X			
Public Water Supply/WHPA	X			
Relocatees	X			
Section 4(f)/6(f)	X			
Social	X			
Underground Storage Tanks	X			
Visual Impacts		X		
Stream Impacts		X		Multiple waterways impacted: see CE
Water Quality		X		Temporary during construction
Wetlands	X			
Wildlife Refuges	X			

Section 401 Water Quality Certification Required? No

Short-term Activity Authorization Required? Yes

Section 404 Permit Required? Yes Type Nationwide #14

Remarks:

Signature of Evaluator Susan Stafford Date May 7, 2018

5/17/2011

Date Sent: Sept.15, 2017

ROADWAY DESIGN REQUEST

Job Number 040622 FAP No. STPR-0072(46) County Crawford

Job Name Washington County Line – South Strs. & Apprs. (S)

Design Engineer Primary Design Environmental Staff

Brief Project Description Replace four (4) Bridge structures with new bridges

A. Existing Conditions:

Roadway Width: 20' Shoulder Type/Width: 4'

Number of Lanes and Width: 2-10' Existing Right-of-Way: 90'

Sidewalks? N/A Location: Width:

Bike Lanes? N/A Location: Width:

B. Proposed Conditions:

Roadway Width: 40' Shoulder Type/Width: Paved 8'

Number of Lanes and Width: 2-12' Proposed Right-of-Way: 100'

Sidewalks? N/A Location: Width:

Bike Lanes? N/A Location: Width:

C. Construction Information:
If detour: Where: Detours on sites 1,3 & 4 Length: Total Length 3250'

D. Design Traffic Data:
2020 ADT: 2000 2040 ADT: 2400 % Trucks: 22
Design Speed: 40 mph Site 1, & 50 mph Sites 2,3,& 4 m.p.h.

E. Approximate total length of project: 0.812 mile(s)

F. Justification for proposed improvements: Structurally Deficient

G. Total Relocatees: N/A Residences: Businesses:

H. Have you coordinated with any outside agencies (e.g., FHWA, City, County, etc.)? No

Agency/Official	Person Contacted	Date

Date Submitted to Environmental Division: 11/1/2017

BRIDGE INFORMATION – PRELIMINARY

Job Number: 040622 FAP Number: STRP-0072(46) County: Crawford
Job Name: Washington County Line – South Strs. & Apprs. (S)
Design Engineer: Korey Pough Environmental Staff: Kayti Ewing

A. Description of Existing Bridge:

1. Bridge Number 02815 over Mountain Fork Tributary Creek (Site 1)
2. Location: Rte.: 59 Section: 5 Log Mile: 0.18
3. Length: 90 ft Br. Rdwy. Width: 22 ft Deck Width (Out-to-Out): 24 ft
4. Type Construction: (5) – 18' RC slab spans supported by concrete column and spread footings.
5. Deficiencies: Cracking and section loss along full length of deck. Map cracking and efflorescence visible at abutments and interior bents. Light abrasion at the base of column
6. HBRRP Eligibility: Qualif. Code: SD Sufficiency Rating: 30.5
7. Are any Condition Component Ratings at 3 or less? Yes

B. Proposed Improvements:

1. Length: 122.17 ft Br. Rdwy. Width: 40 ft Deck Width (Out-to-Out): 43.17 ft
2. Travel Lanes: (2) – 12' Lanes
3. Shoulder Width: 8' Shoulders
4. Sidewalks? N/A Location: _____ Width: _____ ft

C. Construction Information:

1. Location in relation to existing bridge: Same Location
2. Superstructure Type: Cont. Comp. Prestressed Concrete Girder Unit Type II
3. Span Lengths: 40' – 40' – 40'
4. Substructure Type: Steel trestle pile end bents and multi-column intermediate bents on spread footings.
5. Ordinary High Water Elev. (OHW): 1086' No. of Bents inside OHW Contours: 2
6. Concrete Vol. below OHW: TBD yd^3 Vol. Bent Excavation: ____ yd^3 Vol. Backfill _____ yd^3
7. Is Channel Excavation below OHW Required? No Surface Area: _____ ft^2 Volume: _____ yd^3
8. Is Fill below OHW Req'd.? No Surface Area: _____ ft^2 Volume: _____ yd^3
9. Is Riprap below OHW Required? No Volume: _____ yd^3

D. Work Road Information:

1. Is Work Road(s) required? Yes Location: TBD Top Width: _____ ft
2. Is Fill below OHW required? TBD Surface Area: _____ ft^2 Volume _____ yd^3
3. Are Pipes required to meet Backwater Criteria? TBD Waterway Opening: _____ ft^2

E. Detour Information:

1. Is a detour bridge required? Yes Location in relation to Existing Br.: 50' Downstream
2. Length: 93 ft Br. Rdwy. Width: 24 ft Deck Elevation: 1096.6'
3. Volume of Fill below OHW: TBD yd^3 Surface Area: _____ ft^2

F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG):
Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date

Date Submitted to Environmental Division: 11/1/2017

BRIDGE INFORMATION – PRELIMINARY

Job Number: 040622 FAP Number STRP-0072(46) County: Crawford
Job Name: Washington County Line – South Strs. & Apprs. (S)
Design Engineer: Korey Pough Environmental Staff: Kayti Ewing

A. Description of Existing Bridge:

1. Bridge Number 02814 over Mountain Fork Creek (Site 2)
2. Location: Rte.: 59 Section: 5 Log Mile: 3.729
3. Length: 108 ft Br. Rdwy. Width: 22 ft Deck Width (Out-to-Out): 24 ft
5. Type Construction: (6) – 18' RC slab spans supported by concrete column and spread footings.
5. Deficiencies: Cracking, section loss, and exposed rebar along deck. Map cracking and efflorescence visible at Abutments. Light abrasion with shallow spalls at the base of columns
6. HBRRP Eligibility: Qualif. Code: FO Sufficiency Rating: 51.7
7. Are any Condition Component Ratings at 3 or less? Yes

B. Proposed Improvements:

1. Length: 132.17 ft Br. Rdwy. Width: 40 ft Deck Width (Out-to-Out): 43.17 ft
2. Travel Lanes: (2) – 12' Lanes
3. Shoulder Width: 8' Shoulders
4. Sidewalks? N/A Location: _____ Width: _____ ft

C. Construction Information:

1. Location in relation to existing bridge: Approx. 50 ft Down Stream
5. Superstructure Type: Cont. Comp. Prestressed Concrete Girder Unit Type II
6. Span Lengths: 40' – 50' – 40'
7. Substructure Type: Steel trestle pile end bents and multi-column intermediate bents on spread footings.
5. Ordinary High Water Elev. (OHW): 873' No. of Bents inside OHW Contours: 2
6. Concrete Vol. below OHW: TBD yd^3 Vol. Bent Excavation: ____ yd^3 Vol. Backfill _____ yd^3
7. Is Channel Excavation below OHW Required? No Surface Area: _____ ft^2 Volume: _____ yd^3
8. Is Fill below OHW Req'd.? TBD Surface Area: _____ ft^2 Volume: _____ yd^3
10. Is Riprap below OHW Required? TBD Volume: _____ yd^3

D. Work Road Information:

1. Is Work Road(s) required? Yes Location: TBD Top Width: _____ ft
2. Is Fill below OHW required? TBD Surface Area: _____ ft^2 Volume _____ yd^3
3. Are Pipes required to meet Backwater Criteria? TBD Waterway Opening: _____ ft^2

E. Detour Information:

1. Is a detour bridge required? No Location in relation to Existing Br.: _____
2. Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____
3. Volume of Fill below OHW: _____ yd^3 Surface Area: _____ ft^2

F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG):
Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date

Date Submitted to Environmental Division: 11/1/2017

BRIDGE INFORMATION – PRELIMINARY

Job Number: 040622 FAP Number: STRP-0072(46) County: Crawford
Job Name: Washington County Line – South Strs. & Apprs. (S)
Design Engineer: Korey Pough Environmental Staff: Kayti Ewing

A. Description of Existing Bridge:

1. Bridge Number 02813 over Whitzen Hollow Creek (Site 3)
2. Location: Rte.: 59 Section: 5 Log Mile: 5.069
3. Length: 108 ft Br. Rdwy. Width: 22 ft Deck Width (Out-to-Out): 24 ft
6. Type Construction: (6) 18' RC slab spans supported by concrete column and spread footings.
5. Deficiencies: Map cracking on Asphalt. Exposed rebar and efflorescence is visible on undersurface of deck. Map cracking and spalling with heavy efflorescence visible at interior bents. Light abrasion with spalling at base of columns.
6. HBRRP Eligibility: Qualif. Code: SD Sufficiency Rating: 33.2
7. Are any Condition Component Ratings at 3 or less? Yes

B. Proposed Improvements:

1. Length: 132.17 ft Br. Rdwy. Width: 40 ft Deck Width (Out-to-Out): 43.17 ft
2. Travel Lanes: (2) – 12' Lanes
3. Shoulder Width: 8' Shoulders
4. Sidewalks? N/A Location: _____ Width: _____ ft

C. Construction Information:

1. Location in relation to existing bridge: Same Location
8. Superstructure Type: Cont. Comp. Prestressed Concrete Girder Unit Type II
9. Span Lengths: 40' – 50' – 40'
10. Substructure Type: Steel trestle pile end bents and multi-column intermediate bents on spread footings.
5. Ordinary High Water Elev. (OHW): 818' No. of Bents inside OHW Contours: 1
6. Concrete Vol. below OHW: TBD yd^3 Vol. Bent Excavation: ____ yd^3 Vol. Backfill _____ yd^3
7. Is Channel Excavation below OHW Required? No Surface Area: _____ ft^2 Volume: _____ yd^3
8. Is Fill below OHW Req'd.? No Surface Area: _____ ft^2 Volume: _____ yd^3
11. Is Riprap below OHW Required? No Volume: _____ yd^3

D. Work Road Information:

1. Is Work Road(s) required? Yes Location: TBD Top Width: _____ ft
2. Is Fill below OHW required? TBD Surface Area: _____ ft^2 Volume _____ yd^3
3. Are Pipes required to meet Backwater Criteria? TBD Waterway Opening: _____ ft^2

E. Detour Information:

1. Is a detour bridge required? Yes Location in relation to Existing Br.: 50' Upstream
2. Length: 93 ft Br. Rdwy. Width: 24 ft Deck Elevation: 830.13'
3. Volume of Fill below OHW: NA yd^3 Surface Area: _____ ft^2

F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG):
Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date

Date Submitted to Environmental Division: 11/1/2017

BRIDGE INFORMATION – PRELIMINARY

Job Number: 040622 FAP Number: STRP-0072(46) County: Crawford
Job Name: Washington County Line – South Strs. & Apprs. (S)
Design Engineer: Korey Pough Environmental Staff: Kayti Ewing

A. Description of Existing Bridge:

1. Bridge Number 02621 over Huey Creek (Site 4)
2. Location: Rte.: 59 Section: 5 Log Mile: 7.05
3. Length: 63 ft Br. Rdwy. Width: 24 ft Deck Width (Out-to-Out): 26 ft
7. Type Construction: (4) concrete deck and steel I-Beam spans on concrete piers and spread footings.
5. Deficiencies: Transverse cracks over deck joints and minor map cracking in areas along deck. Active corrosion along length of beams with section loss at beam ends. Map cracking and concrete deterioration with efflorescence at interior bents.
6. HBRRP Eligibility: Qualif. Code: SD Sufficiency Rating: 9.0
7. Are any Condition Component Ratings at 3 or less? Yes

B. Proposed Improvements:

1. Length: 122.17 ft Br. Rdwy. Width: 40 ft Deck Width (Out-to-Out): 43.17 ft
2. Travel Lanes: (2) – 12' Lanes
3. Shoulder Width: 8' Shoulders
4. Sidewalks? N/A Location: _____ Width: _____ ft

C. Construction Information:

1. Location in relation to existing bridge: Same Location
11. Superstructure Type: Cont. Comp. Prestressed Concrete Girder Unit Type II
12. Span Lengths: 40' – 40' – 40'
13. Substructure Type: Steel trestle pile end bents and multi-column intermediate bents on spread footings.
5. Ordinary High Water Elev. (OHW): 765' No. of Bents inside OHW Contours: 2
6. Concrete Vol. below OHW: TBD yd^3 Vol. Bent Excavation: ____ yd^3 Vol. Backfill _____ yd^3
7. Is Channel Excavation below OHW Required? No Surface Area: _____ ft^2 Volume: _____ yd^3
8. Is Fill below OHW Req'd.? No Surface Area: _____ ft^2 Volume: _____ yd^3
12. Is Riprap below OHW Required? No Volume: _____ yd^3

D. Work Road Information:

1. Is Work Road(s) required? Yes Location: TBD Top Width: _____ ft
2. Is Fill below OHW required? TBD Surface Area: _____ ft^2 Volume _____ yd^3
3. Are Pipes required to meet Backwater Criteria? TBD Waterway Opening: _____ ft^2

E. Detour Information:

1. Is a detour bridge required? Yes Location in relation to Existing Br.: 50' Upstream
2. Length: 75 ft Br. Rdwy. Width: 24 ft Deck Elevation: 778.42'
3. Volume of Fill below OHW: NA yd^3 Surface Area: _____ ft^2

F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG):
Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date