Attachment A – Endangered Species Act Coordination

Stump Creek, Little Rock, AR

Section 208

Detailed Project Report and Environmental Assessment

November 2023

US Army Corps of Engineers
Little Rock District

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

In Reply Refer To:
Project Code: 2023-0003380
Project Name: Stump Creek

October 12, 2023

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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 Code 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

Project Code: 2023-0003380
Project Name: Stump Creek
Project Type: Terrestrial Sources of Water Creation/Improvement
Project Description: Proposed vegetation removal and sediment excavation within Stump Creek to reduce local flood risk.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.660975300000004,-92.32586564414544,14z

Counties: Pulaski County, Arkansas

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

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

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

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

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

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Army Corps of Engineers
Name:	Elizabeth Knapp
Address:	819 Taylor St
Address Line 2:	Rm 3A12
City:	Fort Worth
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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

In Reply Refer To:
Project code: 2023-0003380
Project Name: Stump Creek
IPaC Record Locator: 305-122030898

February 06, 2023

Subject: Consistency letter for 'Stump Creek' for specified federally threatened and endangered species and designated critical habitat that may occur in your proposed project area consistent with the Arkansas Determination Key for project review and guidance for federally listed species (Arkansas Dkey).

Dear Elizabeth Knapp:

The U.S. Fish and Wildlife Service (Service) received on **February 06, 2023** your effect determination(s) for the 'Stump Creek' (the Action) using the Arkansas DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on the answers provided, the proposed Action is consistent with a determination of “no effect” for the following species as outlined in the Service’s Arkansas Determination Key for project review and guidance for federally listed species.

Species	**Listing Status**	**Determination**
Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*)	Threatened	No effect
Piping Plover (*Charadrius melodus*)	Threatened	No effect
Red Knot (*Calidris canutus rufa*)	Threatened	No effect

Status

Your agency has met consultation requirements for these species by informing the Service of the “no effect” determinations. No further consultation for this project is required for these species. This consistency letter confirms you may rely on effect determinations you reached by considering the Arkansas DKey to satisfy agency consultation requirements under Section 7(a)

(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.; ESA).

The Service recommends that your agency contact the Arkansas Ecological Services Field Office or re-evaluate this key in IPaC if: 1) the scope, timing, duration, or location of the proposed project changes, 2) new information reveals the action may affect listed species or designated critical habitat; 3) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Arkansas Ecological Services Field Office should take place before project changes are final or resources committed.

Bald and Golden Eagle Protection Act: The following resources are provided to project proponents and consulting agencies as additional information. Bald and golden eagles are not included in this section 7(a)(2) consultation and this information does not constitute a determination of effects by the Service.

The Service developed the National Bald Eagle Management Guidelines to advise landowners, land managers, and others who share public and private lands with Bald Eagles when and under what circumstances the protective provisions of the Bald and Golden Eagle Protection Act may apply to their activities. The guidelines should be consulted prior to conducting new or intermittent activity near an eagle nest. Activity specific guidelines begin on page 10 of the document. To access a copy of the National Bald Eagle Management Guidelines please visit the Service's Bald and Golden Eagle Management webpage and scroll down to the Guidance and Tools section: https://www.fws.gov/library/collections/bald-and-golden-eagle-management

If the recommendations detailed in the National Bald Eagle Management Guidelines cannot be followed, you may apply for a permit to authorize removal or relocation of an eagle nest in certain instances. To obtain an application form or contact information for Regional Migratory Bird Permit Offices please visit the Service's Bald and Golden Eagle Management webpage and scroll down to the Permits section: https://www.fws.gov/library/collections/bald-and-golden-eagle-management

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Stump Creek

2. Description

The following description was provided for the project 'Stump Creek':

> Proposed vegetation removal and sediment excavation within Stump Creek to reduce local flood risk.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.660962049999995,-92.32580982698771,14z

Species Protection Measures

Qualification Interview

1. Have you made an effects determination of "no effect" for all species in the area of the project? A "no effect" determination means the project will have no beneficial effect, no short-term adverse effects, and no long-term adverse effects on any of the species on the IPaC-generated species list for the proposed project or those species habitat. A project with effects that cannot be meaningfully measured, detected or evaluated, effects that are extremely unlikely to occur, or entirely beneficial effects should not have a "no effect" determination. (If unsure, select "No").

   No

2. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

3. Are you the the action agency or the designated non-federal representative?

   Yes

4. Choose the agency you represent in this consultation with the U.S. Fish and Wildlife Service:

   b. U.S. Army Corps of Engineers

5. [Semantic] Does the project intersect designated critical habitat for the Leopard Darter?

   Automatically answered
   No

6. [Semantic] Does the project intersect designated critical habitat for the Neosho Mucket?

   Automatically answered
   No

7. [Semantic] Does the project intersect designated critical habitat for Yellowcheek Darter?

   Automatically answered
   No

8. [Semantic] Does the project intersect designated critical habitat for Rabbitsfoot?

   Automatically answered
   No

9. [Semantic] Does the project intersect the American burying beetle consultation area?

   Automatically answered
   No

10. [Semantic] Does the project intersect the red-cockaded woodpecker AOI?

    Automatically answered
    No

11. [Semantic] Does the project intersect the Eastern black rail AOI?

    Automatically answered
    Yes

12. Have you made a "no effect" determination for Eastern Black Rail? Eastern Black Rails are small, secretive marsh birds that may occur in freshwater wetlands in Arkansas.

    Yes

13. [Semantic] Does the project intersect the red knot AOI?

    Automatically answered
    Yes

14. Have you made a "no effect" determination for Red Knot? Red knots may be transiently found feeding along shorelines, marshes, or flooded fields in Arkansas during migration periods.

    Yes

15. [Semantic] Does the project intersect the Piping Plover AOI?

    Automatically answered
    Yes

16. Have you made a "no effect" determination for Piping Plover? Piping Plovers may be transiently found feeding along shorelines, marshes, or flooded fields in Arkansas during migration periods.

    Yes

17. [Semantic] Does the project intersect the Whooping Crane AOI?

    Automatically answered
    No

18. [Semantic] Does the project intersect the interior least tern AOI?

    Automatically answered
    No

19. [Semantic] Does the project intersect the Gray Bat AOI?

    Automatically answered
    No

20. [Semantic] Does the project intersect the Ozark Big-eared Bat AOI?

    Automatically answered
    No

21. [Semantic] Does the project intersect the Indiana bat AOI?

    Automatically answered
    No

22. [Semantic] Does the project intersect the Northern Long-eared bat AOI?

    Automatically answered
    No

23. [Semantic] Does the project intersect the Benton County Cave Crayfish AOI?

    Automatically answered
    No

24. [Semantic] Does the project intersect the Hell Creek Cave Crayfish AOI?

    Automatically answered
    No

25. [Semantic] Does the project intersect the Ozark cavefish AOI?

    Automatically answered
    No

26. [Semantic] Does the project intersect the Missouri bladderpod AOI?

    Automatically answered
    No

27. [Semantic] Does the project intersect the Geocarpon AOI?

    Automatically answered
    No

28. [Semantic] Does the project intersect the running buffalo clover AOI?

    Automatically answered
    No

29. [Semantic] Does the project intersect the Pondberry AOI?

    Automatically answered
    No

IPaC User Contact Information

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Phone:	7135911178

Attachment B – Arkansas Natural Heritage Commission State Species Report

Stump Creek, Little Rock, AR

Section 208

Detailed Project Report and Environmental Assessment

November 2023

US Army Corps of Engineers
Little Rock District

Arkansas Natural Heritage Commission
Division of Arkansas Heritage
Department of Parks, Heritage and Tourism
Pulaski County

	Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
Animals-Invertebrates						
	Amblyscirtes aesculapius	Lace-winged Roadside-Skipper	-	INV	G3G4	S1S3
	Amblyscirtes belli	Bell's Roadside-Skipper	-	INV	G4	S3S4
	Argynnis diana	Diana Fritillary	-	INV	G2G3	S2S3
	Arianops copelandi	Copeland's mold beetle	-	INV	GNR	S1
	Calephelis borealis	Northern Metalmark	-	INV	G3	S3
	Chlosyne gorgone	Gorgone Checkerspot	-	INV	G5	S3
	Dryobius sexnotatus	six-banded longhorn beetle	-	INV	GNR	S2
	Erynnis martialis	Mottled Duskywing	-	INV	G3	S2S3
	Euphyes dion	Dion Skipper	-	INV	G5	S3
	Euphyes dukesi	Dukes' Skipper	-	INV	G3G4	S1S2
	Faxonius acares	Redspotted Stream Crayfish	-	INV	G3G4	S3S4
	Hesperia leonardus	Leonard's Skipper	-	INV	G4	S3
	Hesperia meskei	Meske's Skipper	-	INV	G3G4	S1S2
	Hesperia metea	Cobweb Skipper	-	INV	G4	S3
	Lirceus bicuspidatus	an isopod	-	INV	G3	S2
	Lucanus elaphus	giant stag beetle	-	INV	G3G5	S2
	Papaipema eryngii	Rattlesnake-master borer moth	-	INV	G2	S1
	Poanes yehl	Yehl Skipper	-	INV	G4	S1S3
	Polygonia progne	Gray Comma	-	INV	G5	S2S3
	Problema byssus	Byssus Skipper	-	INV	G4	S3
	Satyrium favonius ontario	Oak Hairstreak	-	INV	G4G5T4	S3
	Somatochlora ozarkensis	Ozark emerald	-	INV	G3	S1
	Synurella bifurca	an amphipod	-	INV	GNR	S3?
	Telegonus cellus	Golden Banded-Skipper	-	INV	G4	S2S3
✓	*Toxolasma parvum*	Lilliput	-	INV	G5	S3
	Uniomerus tetralasmus	Pondhorn	-	INV	G5	S2
Animals-Vertebrates						
	Aimophila ruficeps	Rufous-crowned Sparrow	-	INV	G5	S1
✓★	*Ambystoma annulatum*	Ringed Salamander	-	INV	G4	S3
	Anguilla rostrata	American eel	-	INV	G4	S3
	Calcarius pictus	Smith's Longspur	-	INV	G4G5	S2N
	Centronyx henslowii	Henslow's Sparrow	-	INV	G4	S1B,S2N
	Crotalus atrox	Western Diamond-backed Rattlesnake	-	INV	G5	S2S3
	Crotaphytus collaris	Eastern Collared Lizard	-	INV	G5	S2
	Dryobates borealis	Red-cockaded Woodpecker	LE	SE	G3	S1
	Erimyzon sucetta	lake chubsucker	-	INV	G5	S3
	Gallinula galeata	Common Gallinule	-	INV	G5	S2B
	Haliaeetus leucocephalus	Bald Eagle	-	INV	G5	S3B,S4N

	Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
	Hybognathus placitus	plains minnow	-	INV	G4	SH
✓	*Hyla avivoca*	Bird-voiced Treefrog	-	INV	G5	S3
	Ixobrychus exilis	Least Bittern	-	INV	G4G5	S2B
	Limnothlypis swainsonii	Swainson's Warbler	-	INV	G4	S3B
	Liodytes rigida	Glossy Swampsnake	-	INV	G5	S3
	Myotis austroriparius	southeastern bat	-	INV	G4	S3
	Myotis grisescens	gray bat	LE	SE	G3G4	S2S3
	Myotis lucifugus	little brown bat	-	SE	G3G4	S1
	Myotis septentrionalis	northern long-eared bat	LE	SE	G2G3	S1S2
	Ophisaurus attenuatus	Slender Glass Lizard	-	INV	G5	S3
	Polyodon spathula	paddlefish	-	INV	G4	S3
	Porphyrio martinicus	Purple Gallinule	-	INV	G5	S1B
	Pseudacris streckeri	Strecker's Chorus Frog	-	INV	G5	S2
	Rallus elegans	King Rail	-	INV	G4	S1B
	Spilogale putorius	eastern spotted skunk	-	INV	G4	S2S3
	Sternula antillarum athalassos	Interior Least Tern	-	INV	G4T3Q	S3B
Plants-Vascular						
	Amorpha canescens	lead-plant	-	INV	G5	S1
	Amsonia hubrichtii	Ouachita bluestar	-	INV	G3	S3
	Apocynum sibiricum	clasping dogbane	-	INV	GNR	S1
	Bergia texana	Texas bergia	-	INV	G5	S2
	Callirhoe alcaeoides	plains poppy-mallow	-	INV	G5?	S1?
	Callirhoe bushii	Bush’s poppy-mallow	-	INV	G3	S3
✓	*Carex arkansana*	Arkansas sedge	-	INV	G4	S1
	Carex bromoides ssp. bromoides	brome sedge	-	INV	G5T5	S2
	Carex bullata	button sedge	-	INV	G5	S1
	Carex comosa	bottle-brush sedge	-	INV	G5	S1S2
	Carex decomposita	cypress-knee sedge	-	INV	G3G4	S2
	Carex seorsa	swamp star sedge	-	INV	G5	SH
	Carex stricta	tussock sedge	-	INV	G5	S3
✓	*Cirsium nuttallii*	Nuttall's thistle	-	INV	G5	S2?
✓	*Clematis glaucophylla*	white-leaf leather-flower	-	INV	G4?	S1
✓	*Crassula aquatica*	water pygmyweed	-	INV	G5	S1S3
	Crataegus macrosperma	fan-leaf hawthorn	-	INV	G5	S1
	Cypripedium kentuckiense	Kentucky lady’s-slipper	-	INV	G3	S2
	Dalea lanata var. lanata	woolly prairie-clover	-	INV	G5TNR	S2S3
	Dichanthelium arenicoloides	rosette grass	-	INV	GNR	SNR
	Dichanthelium auburne	rosette grass	-	INV	GNR	SNR
	Dichanthelium chrysopsidifolium	rosette grass	-	INV	GNR	SNR
	Dichanthelium consanguineum	blood rosette grass	-	INV	G5	SNR
	Dulichium arundinaceum var. arundinaceum	three-way sedge	-	INV	G5T5	S2S3
✓	*Eleocharis wolfii*	Wolf’s spike-rush	-	INV	G3G5	S3
✓	*Eriocaulon koernickianum*	small-head pipewort	-	SE	G2	S2
	Erythrina herbacea	coral-bean	-	INV	G5	S1
✓	*Eustoma exaltatum*	catchfly prairie-gentian	-	INV	G5	S2

	Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
	Gaura sinuata	wavy-leaf gaura	-	INV	G4G5	SH
	Gratiola brevifolia	sticky hedge-hyssop	-	INV	G4	S3
	Heliotropium convolvulaceum	phlox heliotrope	-	INV	G5	S2
	Hexalectris spicata var. spicata	crested-coralroot	-	INV	G5T4T5	S2
	Hypoxis sessilis	glossy-seed star-grass	-	INV	G3	S1
	Lathyrus pusillus	low vetchling	-	INV	G5?	S2
	Liatris compacta	Ouachita blazing-star	-	INV	G3	S3
	Marshallia caespitosa var. signata	leafy Barbara's-buttons	-	INV	G4T4	S1
	Micranthes virginiensis	early saxifrage	-	INV	G5	S1S2
	Nemastylis geminiflora	celestial-lily	-	INV	G4	S3
	Nemastylis nuttallii	Nuttall's pleat-leaf	-	INV	G3	S2
	Panicum rigidulum ssp. pubescens	red-top panic grass	-	INV	G5T5?	S1
	Paspalum bifidum	pitchfork paspalum	-	INV	G5	SNR
	Pellaea wrightiana	Wright's cliff-brake	-	INV	G5	S1
	Penstemon cobaea	showy beardtongue	-	INV	G4	S3
	Platanthera cristata	crested fringed orchid	-	INV	G5	S1S2
	Platanthera flava	rein orchid	-	ST	G4?	S2S3
✓	*Platanthera peramoena*	purple fringeless orchid	-	ST	G5	S2
	Polygala incarnata	pink milkwort	-	INV	G5	S1S2
	Prenanthes barbata	barbed rattlesnake-root	-	INV	G3	S2
✓	*Ranunculus aquatilis var. diffusus*	white water crowfoot	-	INV	G5T5	S2S3
	Ranunculus flabellaris	yellow water crowfoot	-	INV	G5	S3
✓	*Rhynchospora colorata*	white-top sedge	-	SE	G5	S1
	Sabatia campanulata	slender rose-gentian	-	SE	G5	S1
	Schoenoplectus californicus	California bulrush	-	INV	G5	S1S2
	Spiraea tomentosa	hardhack	-	INV	G5	S2
	Spiranthes praecox	giant ladies'-tresses	-	INV	G5	S1S2
	Stenanthium gramineum	featherbells	-	INV	G4G5	S3
	Streptanthus maculatus ssp. obtusifolius	Arkansas twistflower	-	INV	G3T3Q	S3
✓	*Thalictrum arkansanum*	Arkansas meadow-rue	-	ST	G2Q	S2
	Tradescantia paludosa	confederate spiderwort	-	INV	G4?Q	S1S2
	Trifolium carolinianum	Carolina clover	-	INV	G5	S1?
	Trifolium stoloniferum	running buffalo clover	-	INV	G3	SH
	Trillium ozarkanum	Ozark trillium	-	INV	G3	S3
	Utricularia macrorhiza	greater bladderwort	-	INV	G5	SH
	Uvularia perfoliata	perfoliate bellwort	-	INV	G5	S3
	Veratrum virginicum	bunchflower	-	INV	G5	S2
	Vicia ludoviciana ssp. ludoviciana	Louisiana vetch	-	INV	G5TNR	SH
	Special Elements-Natural Communities					
	Mississippi River Bottomland Depression		-	INV	GNR	S4
	Ozark-Ouachita Dry Oak Woodland		-	INV	GNR	S5
✓	West Gulf Coastal Plain Nepheline Syenite Glade		-	INV	GNR	S1
	Special Elements-Other					
	Colonial nesting site, swallows & swifts		-	INV	GNR	SNR

	Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
✓	Colonial nesting site, water birds		-	INV	GNR	SNR

★ - These elements of special concern have been recorded within a 1-mile radius of the study area.

✓ - These elements of special concern have been recorded within a 5-mile radius of the study area

Attachment C – Cultural Resources

Stump Creek, Little Rock, AR
Section 208
Detailed Project Report and Environmental Assessment

November 2023

US Army Corps of Engineers
Little Rock District

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

April 15, 2021

Mr. Scott Kaufman
Deputy State Historic Preservation Officer
Arkansas Historic Preservation Program
1100 North Street
Little Rock, AR 72203

Dear Mr. Kaufman:

The U.S. Army Corps of Engineers, Little Rock District (USACE) and the City of Little Rock, the non-federal sponsor, are initiating a study to evaluate opportunities to plan for and provide removal of accumulated snags and other debris from Stump Creek in the interest of flood reduction. The study area is located in the NW$^{1/4}$ of Section 5, T. 1 S., R. 12 W., Little Rock, Pulaski County, Arkansas. This study is being conducted under the authority of Section 208 of the Flood Control Act of 1954, as amended.

USACE personnel have visited the site and reviewed all pertinent data such as the AMASDA database, soils, historic imagery, and topographic maps. The proposed project area is in a very low, wetland environment. Based upon this information, the USACE believes this area to have a very low probability for the location of historic properties. In addition, the undertaking would require minimal disturbance of the area. The USACE seeks your concurrence on our determination of **No Historic Properties Affected** regarding the proposed undertaking.

The USACE Little Rock District looks forward to continuing to work closely with you throughout the course of this undertaking. Should you have any questions, or require any further information concerning the above, please contact Mr. Christopher G. Davies, Cultural Resources Manager, Regional Planning and Environmental Center at (501) 324-7134 or at christopher.g.davies@usace.army.mil.

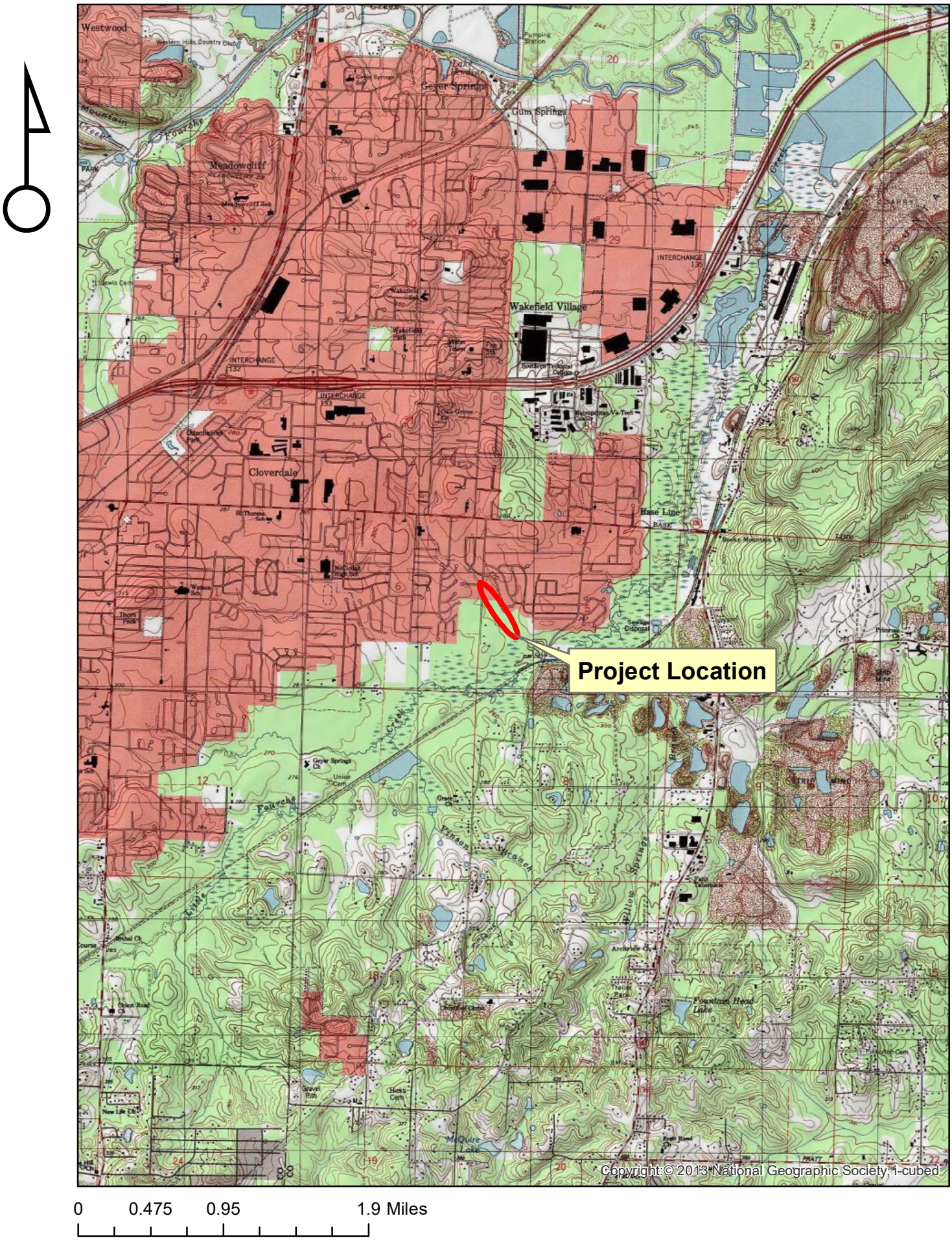
Sincerely,

Amanda McGuire

Amanda M. McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center

Enclosures

Topographic Map Displaying General Project Location



Aerial Map Displaying General Project Location

0 0.275 0.55 1.1 Miles

Figure 9 – Photo showing water and woody debris in Stump Creek

Figure 10 – Photo showing water, sediment, and woody debris in Stump Creek

Figure 11 – Photo showing sediment and woody debris in Stump Creek

Asa Hutchinson
Governor
Stacy Hurst
Secretary

April 21, 2021

Ms. Amanda McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center
U.S. Army Corps of Engineers, Fort Worth District
P.O. Box 17300
Fort Worth, TX 76102-0300

RE: Pulaski County — Little Rock
Section 106 Review — COE
Proposed Undertaking — Debris Removal from Stump Creek
AHPP Tracking Number: 107779

Dear Ms. McGuire:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the submission for the proposed undertaking in Section 5 of Township 1 South, Range 12 West in Little Rock, Pulaski County, Arkansas. As described, the undertaking entails removal of accumulated snags and other debris from Stump Creek. The intent of the undertaking is to mitigate flood risk.

Based on the provided information, the AHPP concurs with the finding of **no historic properties affected in accordance with 36 CFR § 800.4(d)(1)** for the proposed undertaking.

Tribes that have expressed an interest in the area include the Caddo Nation, the Cherokee Nation, the Choctaw Nation of Oklahoma, the Jena Band of Choctaw Indians, the Muscogee (Creek) Nation, the Osage Nation, the Quapaw Nation, and the Shawnee Tribe. We recommend consultation 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 Eric Mills of my staff at 501-324-9784 or email eric.mills@arkansas.gov.

Sincerely,

Eric R. Mills
Digitally signed by Eric R. Mills
Date: 2021.04.21 15:30:55 -05'00'

for
Scott Kaufman
Director, AHPP

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

August 20, 2021

Ms. Samantha Robinson
Tribal Historic Preservation Officer
Alabama-Quassarte Tribal Town
Post Office Box 187
Wetumka, Oklahoma 74883

Dear Ms. Robinson:

The U.S. Army Corps of Engineers, Little Rock District (USACE) and the City of Little Rock, the non-federal sponsor, are initiating a study to evaluate opportunities to plan for and provide removal of accumulated snags and other debris from Stump Creek in the interest of flood reduction. The study area is located in the NW$^{1/4}$ of Section 5, T. 1 S., R. 12 W., Little Rock, Pulaski County, Arkansas. This study is being conducted under the authority of Section 208 of the Flood Control Act of 1954, as amended.

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The USACE Little Rock District looks forward to continuing to work closely with you throughout the course of this undertaking. Should you have any questions, or require any further information concerning the above, please contact Mr. Christopher G. Davies, Cultural Resources Manager, Regional Planning and Environmental Center at (501) 324-7134 or at christopher.g.davies@usace.army.mil.

Sincerely,

Amanda McGuire

Amanda M. McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center

Enclosures

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

August 20, 2021

Dr. Linda Langley
Tribal Historic Preservation Officer
Coushatta Tribe of Louisiana
Post Office Box 10
Elton, Louisiana 70532

Dear Dr. Langley:

The U.S. Army Corps of Engineers, Little Rock District (USACE) and the City of Little Rock, the non-federal sponsor, are initiating a study to evaluate opportunities to plan for and provide removal of accumulated snags and other debris from Stump Creek in the interest of flood reduction. The study area is located in the NW$^{1/4}$ of Section 5, T. 1 S., R. 12 W., Little Rock, Pulaski County, Arkansas. This study is being conducted under the authority of Section 208 of the Flood Control Act of 1954, as amended.

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Sincerely,

Amanda McGuire

Amanda M. McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center

Enclosures

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

August 20, 2021

Mr. Kenneth H. Carleton
Tribal Historic Preservation Officer
Mississippi Band of Choctaw Indians
Post Office Box 6610
Choctaw, Mississippi 39350

Dear Mr. Carleton:

The U.S. Army Corps of Engineers, Little Rock District (USACE) and the City of Little Rock, the non-federal sponsor, are initiating a study to evaluate opportunities to plan for and provide removal of accumulated snags and other debris from Stump Creek in the interest of flood reduction. The study area is located in the NW$^{1/4}$ of Section 5, T. 1 S., R. 12 W., Little Rock, Pulaski County, Arkansas. This study is being conducted under the authority of Section 208 of the Flood Control Act of 1954, as amended.

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Sincerely,

Amanda McGuire

Amanda M. McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center

Enclosures

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

August 20, 2021

Dr. Andrea Hunter
Tribal Historic Preservation Officer
The Osage Nation
P.O. Box 779
Pawhuska, Oklahoma 74056

Dear Dr. Hunter:

The U.S. Army Corps of Engineers, Little Rock District (USACE) and the City of Little Rock, the non-federal sponsor, are initiating a study to evaluate opportunities to plan for and provide removal of accumulated snags and other debris from Stump Creek in the interest of flood reduction. The study area is located in the NW$^{1/4}$ of Section 5, T. 1 S., R. 12 W., Little Rock, Pulaski County, Arkansas. This study is being conducted under the authority of Section 208 of the Flood Control Act of 1954, as amended.

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Sincerely,

Amanda McGuire

Amanda M. McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center

Enclosures

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

August 20, 2021

Everett Bandy
Tribal Historic Preservation Officer
The Quapaw Nation
P.O. Box 765
Quapaw, Oklahoma 74363

Dear Mr. Bandy:

The U.S. Army Corps of Engineers, Little Rock District (USACE) and the City of Little Rock, the non-federal sponsor, are initiating a study to evaluate opportunities to plan for and provide removal of accumulated snags and other debris from Stump Creek in the interest of flood reduction. The study area is located in the NW$^{1/4}$ of Section 5, T. 1 S., R. 12 W., Little Rock, Pulaski County, Arkansas. This study is being conducted under the authority of Section 208 of the Flood Control Act of 1954, as amended.

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Sincerely,

Amanda McGuire

Amanda M. McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center

Enclosures

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

August 20, 2021

Dr. Ian Thompson
Tribal Historic Preservation Officer
The Choctaw Nation of Oklahoma
Post Office Drawer 1210
Durant, Oklahoma 74701

Dear Dr. Thompson:

The U.S. Army Corps of Engineers, Little Rock District (USACE) and the City of Little Rock, the non-federal sponsor, are initiating a study to evaluate opportunities to plan for and provide removal of accumulated snags and other debris from Stump Creek in the interest of flood reduction. The study area is located in the NW$^{1/4}$ of Section 5, T. 1 S., R. 12 W., Little Rock, Pulaski County, Arkansas. This study is being conducted under the authority of Section 208 of the Flood Control Act of 1954, as amended.

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The USACE Little Rock District looks forward to continuing to work closely with you throughout the course of this undertaking. Should you have any questions, or require any further information concerning the above, please contact Mr. Christopher G. Davies, Cultural Resources Manager, Regional Planning and Environmental Center at (501) 324-7134 or at christopher.g.davies@usace.army.mil.

Sincerely,

Amanda McGuire

Amanda M. McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center

Enclosures

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

August 20, 2021

Ms. Corain Lowe-Zepeda
Tribal Historic Preservation Officer
The Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

Dear Ms. Lowe-Zepeda:

The U.S. Army Corps of Engineers, Little Rock District (USACE) and the City of Little Rock, the non-federal sponsor, are initiating a study to evaluate opportunities to plan for and provide removal of accumulated snags and other debris from Stump Creek in the interest of flood reduction. The study area is located in the NW$^{1/4}$ of Section 5, T. 1 S., R. 12 W., Little Rock, Pulaski County, Arkansas. This study is being conducted under the authority of Section 208 of the Flood Control Act of 1954, as amended.

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The USACE Little Rock District looks forward to continuing to work closely with you throughout the course of this undertaking. Should you have any questions, or require any further information concerning the above, please contact Mr. Christopher G. Davies, Cultural Resources Manager, Regional Planning and Environmental Center at (501) 324-7134 or at christopher.g.davies@usace.army.mil.

Sincerely,

Amanda McGuire

Amanda M. McGuire
Chief, Environmental Branch
Regional Planning and Environmental Center

Enclosures

Attachment D

EVALUATION OF SECTION 404(b)(1) GUIDELINES
(SHORT FORM)

Stump Creek, Little Rock, AR

Continuing Authorities Program Section 208
Clearing and Snagging

Detailed Project Report and Environmental Assessment

November 2023

US Army Corps
of Engineers
Little Rock District

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Acronyms

BMPs	Best Management Practices
CAP	Continuing Authorities Program
NEPA	National Environmental Policy Act
NFS	Non-Federal Sponsor
O&M	Operations and Maintenance
PED	Pre-Engineering and Design Phase
STAA	Short Term Activity Authorization
SWPPP	Stormwater Pollution Prevention Plan
TSP	Tentatively Selected Plan

1. Introduction

Stump Creek is located in Southwest Little Rock, Pulaski County, Arkansas (Figure 1). The stream is a small intermittent urban drainage conveyance that drains an approximate 0.7 square mile area (Figure 2). Stump Creek is 1.13 miles in length from the confluence to its origin just upstream of Baseline Road. From upstream of Baseline Road to the confluence, there are a total of four culverts that control conveyance of flows. They are located at Baseline Road, South Heights Road, Reck Road, and Pine Cone Drive. In recent years, Stump Creek has filled with debris and its meanders have become ineffective at carrying floodwater runoff while its riparian corridor has become choked with debris and trash. As a result, numerous homes in the area of Stump Creek sustain flood damages due to the stream's inability to convey floodwaters effectively.

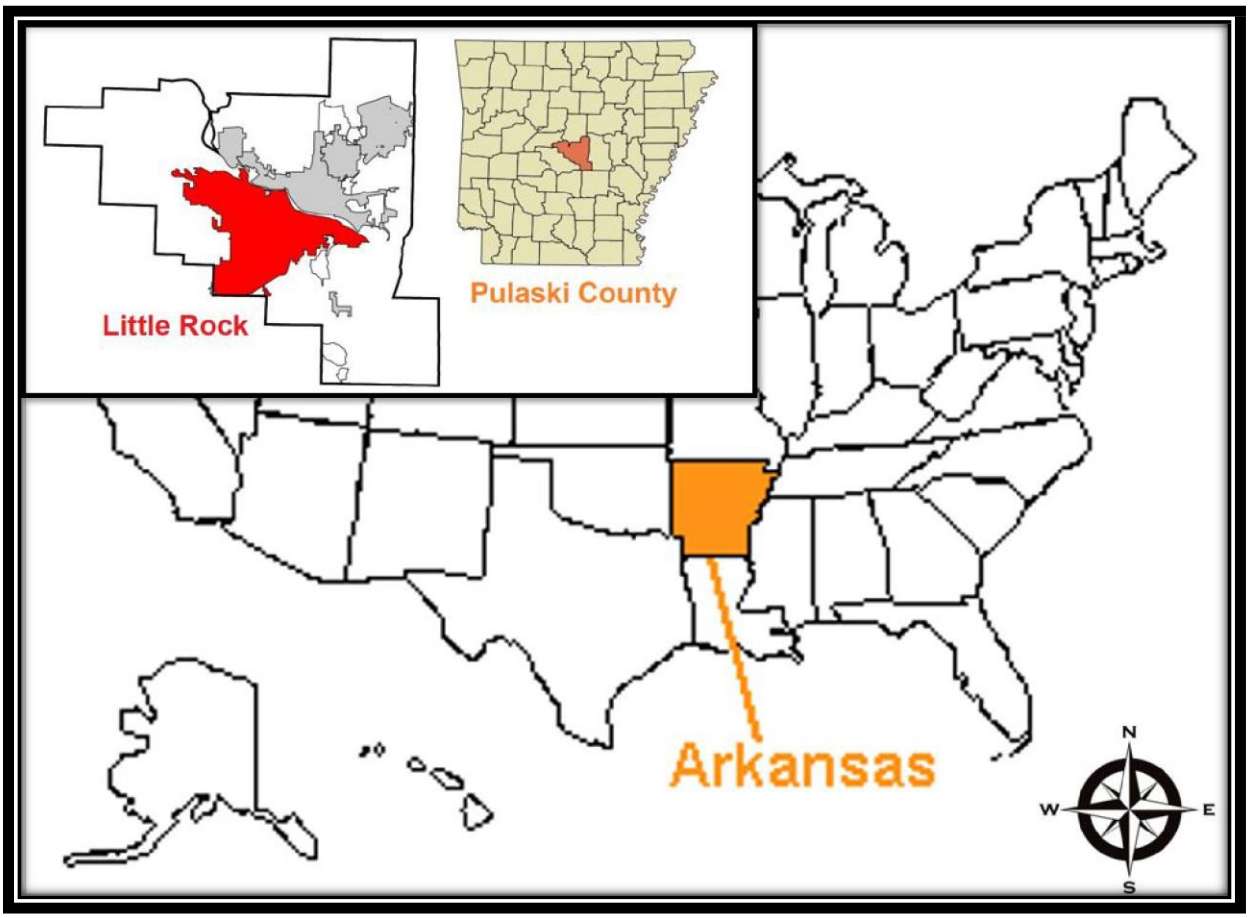

Figure 1 – Study Area Location

Figure 2 – Stump Creek Watershed

1.1 Project Authority

The authority for this study is Section 208 Continuing Authority Program, Clearing and Snagging for Flood Risk Management, of the Flood Control Act of 1954 (33 U.S.C. 701g), as amended, which permits the U.S. Army Corps of Engineers (USACE) to undertake the investigation, design, and construction of flood control projects having a total Federal cost of less than $500,000 per project without specific congressional action. The Non-Federal Sponsor (NFS) for this project is the City of Little Rock, Arkansas.

2. Plan Formulation

The objective of the Stump Creek study was to determine the best plan to reduce flood risk within the study area. Initially, three management measures were evaluated as a means to meet the planning objective: removing accumulated snags and other debris, clearing the channel (excavation), and straightening the channel. Straightening the channel was removed from consideration as it has been shown to cause long term negative effects to the environment as well as waterways themselves. From there, four alternatives were formulated:

1. **Alternative 1 – No Action:** No changes would be implemented to Stump Creek.
2. **Alternative 2 – Removing Accumulated Snags and Other Debris:** Mechanical and/or by-hand clearing of dead and downed, as well as live, vegetation to increase channel conveyance capacity within the study area.
3. **Alternative 3 – Clearing the Channel (Excavation):** Mechanical removal of built-up sediments within existing channel alignment in the study area.
4. **Alternative 4 – Combination of Alternatives 2 and 3:** Mechanical and/or by-hand clearing of dead and downed, as well as live, vegetation as well as mechanical removal of built-up sediment within the existing channel to increase channel conveyance capacity within the study area.

Evaluation of the three action alternatives found that Alternative 2, removing accumulated snags and other debris, alone would not reduce flood risk within the area as hydraulic analysis showed that water surface elevations would be the same as the No Action alternative or the existing conditions. Alternative 3 would also not meet the flood risk reduction objective as it is not a complete solution in itself and is dependent upon clearing and snagging occur prior to excavation. These two alternatives were eliminated from further consideration.

In addition to the No Action Alternative, Alternative 4 was carried forward for further analysis as it was found to be a complete solution and would meet the flood risk reduction objective. Alternative 4 was then divided into two potential alternatives that both included clearing and snagging the same length of stream but differed in the length of stream to be excavated.

Alternative 4a involves clearing and snagging only for approximately 100 feet upstream of Reck Road. Additionally, clearing, snagging, and excavation will occur for the first approximately 1,500 feet downstream of Reck Road. A further 750 feet or so downstream would involve only clearing and snagging, without any excavation.

Alternative 4b involves clearing and snagging only for approximately 100 feet upstream of Reck Road. Additionally, clearing, snagging, and excavation will occur for the first approximately 2,300 feet downstream of Reck Road.

2.1 Tentatively Selected Plan

Alternative 4b was chosen as the Tentatively Selected Plan (TSP) because it meets the study objective of flood risk reduction and maximizes benefits to fulfill Federal environmental justice objectives while avoiding adverse impacts to wetland and riverine habitat. While Alternative 4a may meet the objective of reducing flood risk within the study area, the additional length of excavation incorporated in Alternative 4b would extend the project life compared to Alternative 4a and is a more complete solution to the problem at hand. By not excavating sediments from the lower 750 feet of stream, further debris and sediment buildup over time would still be possible. The TSP best serves the need to reduce flood risk to local residences and will not cause any further adverse impacts compared to Alternative 4a.

3. Project Description

The Integrated Draft Detailed Project Report and Environmental Assessment details the planning process undertaken for the Continuing Authorities Program (CAP) Section 208 Stump Creek Study and documents the environmental assessment to satisfy National Environmental Policy Act (NEPA) requirements. The Stump Creek study is a single-purpose, CAP Section 208 Flood Risk Management feasibility study being cost-shared with the City of Little Rock, Arkansas.

The TSP incorporates clearing and snagging only for approximately 100 feet upstream of Reck Road. Additional clearing, snagging, and excavation will occur for the first approximately 2,300 feet downstream of Reck Road. It is assumed that construction efforts would occur during the dry season.

below depicts the extent of clearing, snagging, and excavation planned in the TSP. It is assumed that construction efforts would occur during the dry season.

TSP measures and the accompanying operations and maintenance plans have been developed to feasibility level of design (i.e. estimates, design level that is not detailed enough for construction) based on currently available data and information developed during plan formulation. There is significant institutional knowledge regarding excavation, clearing, and snagging construction; however, there is still some, though minimal, uncertainty from a construction standpoint. Uncertainties relating to measure design and performance are mainly centered on site-specific, design-level details (i.e. exact sediment quantities, extent of erosion control needs, precise access route and staging locations, timing and duration of construction, engineering challenges, etc.), which would be addressed during the pre-engineering and design phase (PED).

Operations and maintenance (O&M) strategies will be implemented by the Non-Federal Sponsor (NFS), the City of Little Rock, AR, to ensure construction efforts are effective and maximize the life of the project. For the purposes of the initial study, O&M was assumed to be a 3-person crew cleaning the channel and applying broadleaf killer. Equipment for this task is expected to include some type of off-highway vehicle pulling a cart to gather debris and trash. The crew would perform this cleaning and spraying once a year.

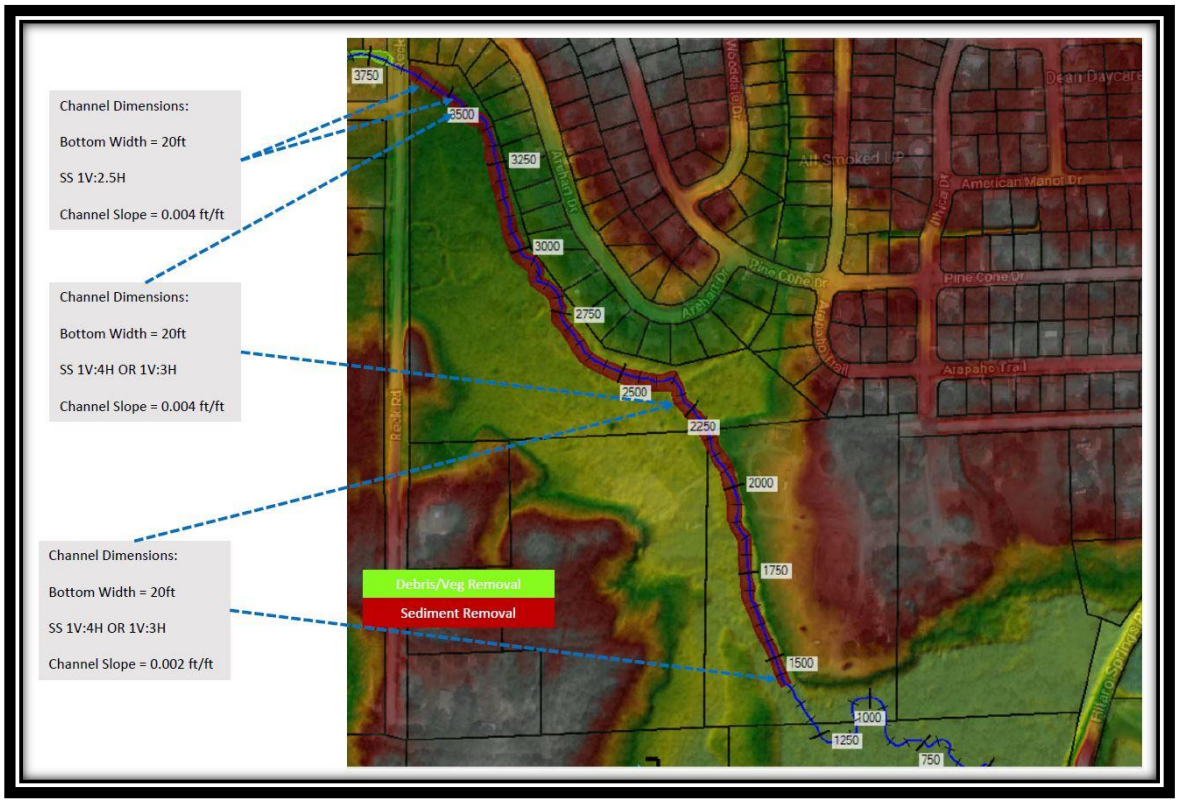

Figure 3 – Alternative 4b Map

3.1 Access Routes

This project is located within the City of Little Rock on the east side of Reck Road between Arehart Drive and Barwood Circle. A preliminary access route has been identified along the right bank of Stump Creek, outlined in yellow in Figure 4; however, final staging areas and access routes would be determined during PED. The initially planned access road would require a 20-foot wide cleared path (trees removed), and an additional 5-foot of cutting back overhanging brush and limbs (trees remain) will be required to allow vehicular access to the work area. The basis for the width is that crane matting is typically 14 feet wide as a minimum; the additional 6-foot width would help facilitate maneuvering. The clearing along the access would end approximately 2250 feet downstream of Reck Road with a 20-foot by 40-foot "hammerhead" turn-around. Vehicles would have to ingress and egress one at a time using the same route.

It may be possible to use an existing unimproved gravel road (dashed blue line in Figure 4) to return to Reck Road, allowing a complete one-way circuit for haul vehicles for most of the project length. The likelihood of using this access is uncertain at this time.

Access from the neighborhood along the left bank of the channel was considered, but due to the tight clearances between houses as well as the removal and restoration of fencing, landscape, yards, and trees this option was not considered further.

Disturbances for access and staging would be placed outside of environmentally sensitive areas to the greatest extent practicable. Selective brush and tree removal will be implemented to establish the access and staging areas. Ground disturbance for access and staging areas would be temporary and revegetated with native grasses, aside from a path to maintain access post-construction to allow for O&M.

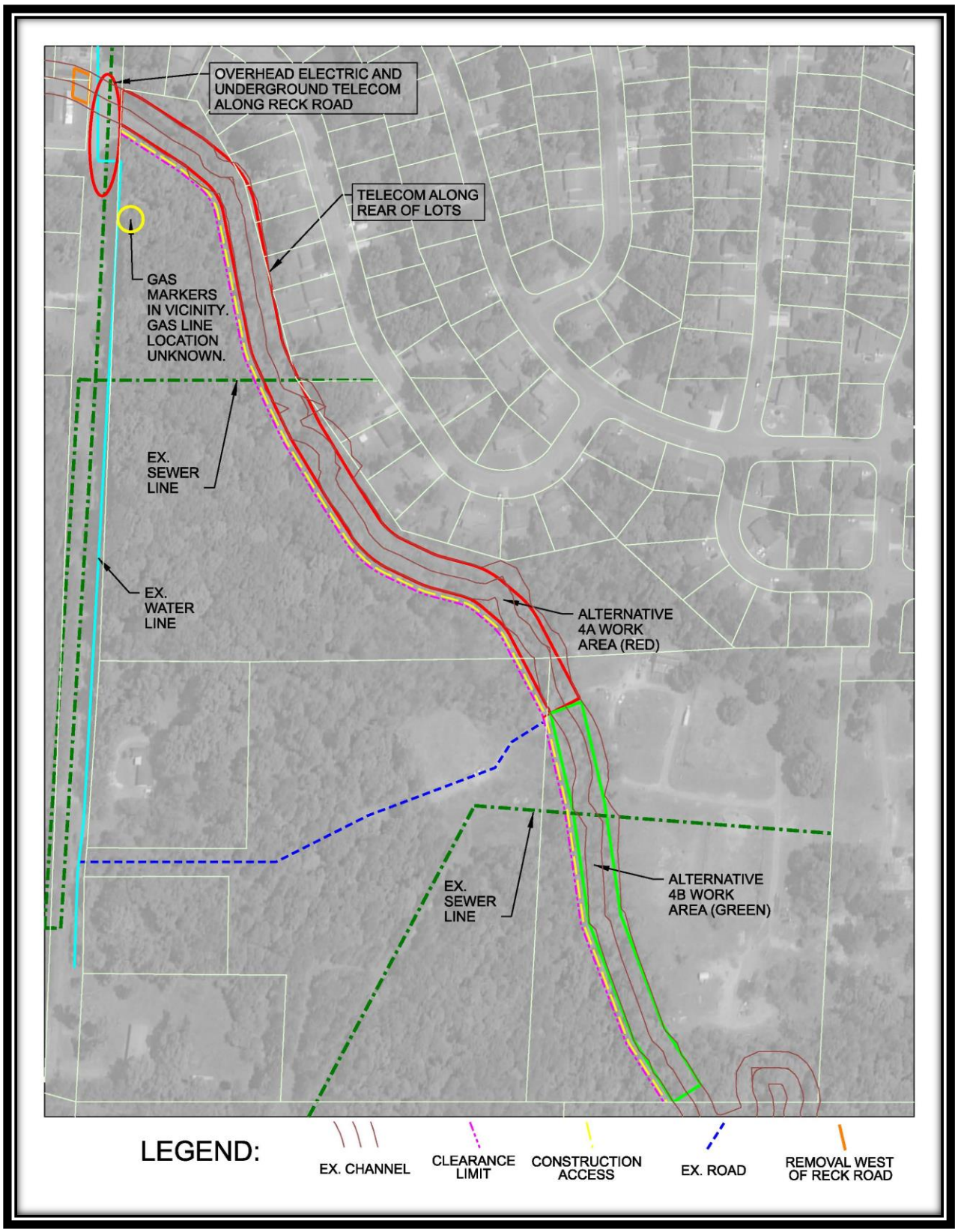

Figure 4 – Construction Access Route Map

3.2 Temporary Structures

Final plans for temporary structures will be determined by the Contractor. However, it is possible that a cofferdam may be constructed to dewater the channel and allow wet soils along the bank to drain in order to improve the workability of the soil. The cofferdam would be constructed at the downstream end of the project with an excavator and a temporary pumping system would be installed to pump the water over the cofferdam. The PDT found that, after evaluating the risks and likely ineffectiveness of a potential cofferdam, it wouldn't be an effective means to facilitate the needed construction; however, it should be noted that it is still a possibility as construction methods are up to the Contractor.

Instead, the use of 4 -14'x14' crane mats along the access road to maintain stability will be implemented and working during the dry season should improve soil workability. The typical cross section of the creek, access road, and crane mat plans is depicted below in Figure 5. No other temporary structures are expected at this time.

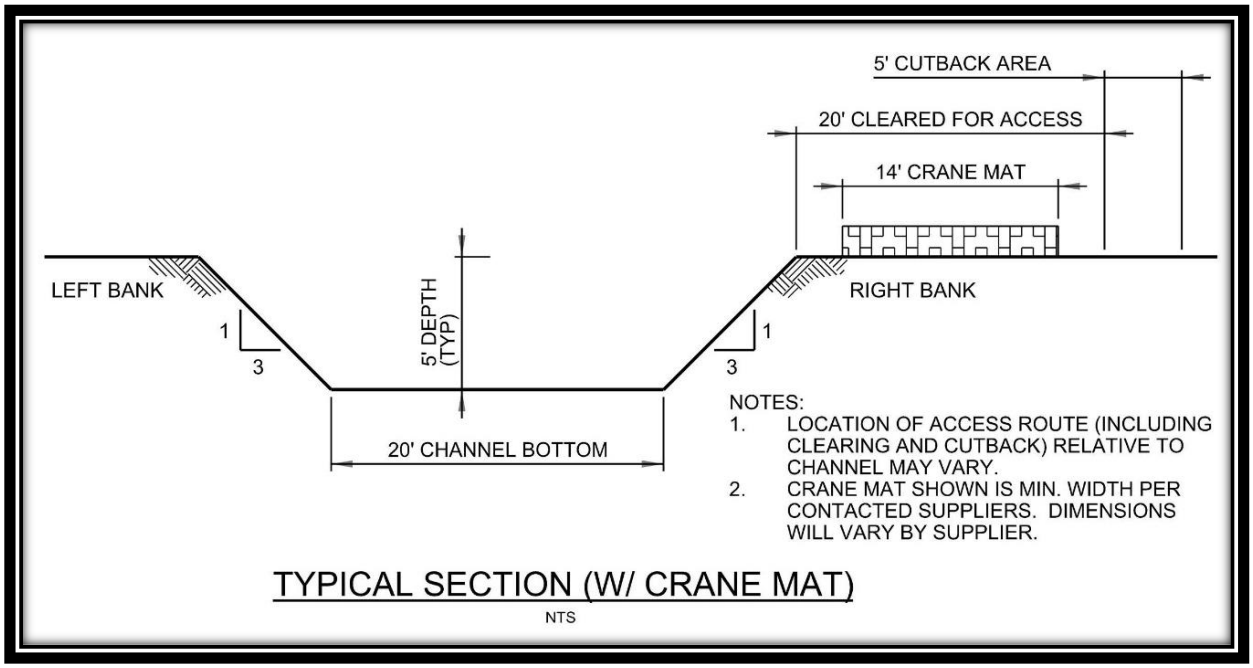

Figure 5 – Typical Section

3.3 Debris and Sediment Removal

Clearing and snagging entails the mechanical and/or by-hand clearing of dead and down vegetation, as well as living vegetation (trees and shrubs – especially fast growing invasives). Excavation includes the mechanical removal of built-up sediments within the existing channel alignment. It was estimated that vegetation and debris cover a third of the area to an average depth of 2 feet. The TSP involves removing an estimated 3,265 cubic yards of debris and excavating approximately 10,000 cubic yards of sediment. A more precise quantity of debris and sediment to be removed will be determined during PED.

For sediment removal and shaping of the channel, the team considered the use of a medium sized tracked excavator to accomplish this task. Loads of debris and sediment from the excavator would then be placed in haul units (e.g. dump trucks) on the access road. The haul units would remove the material from the project site. Removal of debris and sediment upstream of Reck Road could be accomplished with a small front-end loader. A water truck with a hose

could be used to flush the culvert although some clearing by hand or small equipment may be necessary. On-site temporary or permanent storage of removed material was not considered with this study due to limited access, public relations, and risk of high-water events washing stored debris back into the channel. All removed material will become the property of the contractor, be immediately removed from the site, and be disposed of in accordance with Federal, State, and local laws. No excavated materials would be disposed of into waters of the United States.

Another risk with debris and sediment removal is removal of trees and vegetation on the left bank of the channel. This bank backs up to residential properties, and removal of root material could potentially degrade the left bank and result in damage to fences and properties on that side. This is a low risk that can be mitigated by using more hand methods of tree removal on the left bank and redressing and possible recompacting of the bank material after work in the area.

3.4 Maintenance

The Contractor would be responsible for maintaining the operability of work areas and access. Maintenance would likely be regrading and reshaping the access road and work areas with a bulldozer or grader, replacing displaced or missing rock and gravel from dump truck loads, and repairing damages and other problems as they arise. Maintenance would also occur with use crane mat panels for access as the panel would have to be periodically repositioned and leveled for adequate vehicular operation. Maintenance is typically not a separate pay item but is subsidiary to other work pay items. Specific events of maintenance are not prescribed; the Contractor is required to maintain operability of construction and will have the responsibility for determining when maintenance occurs.

Long-term O&M strategies will be implemented by the City of Little Rock to ensure construction efforts are effective and maximize the life of the project. For the purposes of the initial study, O&M was assumed to be a 3-person crew cleaning the channel and applying broadleaf killer. Equipment for this task is expected to include some type of off-highway vehicle pulling a cart to gather debris and trash. The crew would perform this cleaning and spraying once a year.

3.5 Erosion Control

Erosion control measures will be put in place to minimize the erosion during construction. This includes the use of crane mats on any access roads along the stream bank to distribute the weight of heavy equipment and minimize erosion from vehicular traffic. All temporarily impacted areas would be revegetated with native grasses to minimize erosion from vegetation removal.

The Contractor will be required to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) for the construction site and will be responsible for providing and implementing the measures set forth in the SWPPP.

4. Environmental Resources

At its confluence with Little Fourche Creek, Stump Creek has a drainage area of approximately 0.71 square miles and is 1.13 miles in length from the confluence to its origin just upstream of Baseline Road. The upper portion of the basin is characterized by steeper slopes and is highly urbanized which transitions to a shallower slope towards the confluence with the Little Fourche Creek. From upstream of Baseline Rd to the confluence, there are a total of four (4) culverts that control conveyance of flows. These are located at Baseline Road, South Heights Road, Reck Road, and Pine Cone Drive.

4.1 Water Quality

Stump Creek is a tributary of Little Fourche Creek, which discharges to Fourche Creek, then to the Arkansas River in the southeast portion of Little Rock. The Stump Creek watershed is primarily urban, and it receives runoff from storm sewers and roads. The surface water of most tributary streams emptying into Fourche Creek are generally impacted by pollutants common to storm water runoff from pervious surfaces. While urban streams typically have localized water quality impacts due to industrial and residential contaminants, no specific water quality problems have been reported in Stump Creek.

Qualitatively, Stump Creek is degraded by trash and debris. The water quality is not at its optimal state as the snags and sediment buildup slow water flow, and water is relatively stagnant outside of rainfall events. The standing pools and excess organic materials can cause low dissolved oxygen content.

While the project purpose under CAP Section 208 authority is to evaluate means to reduce flood risk, the clearing, snagging, and minor excavation associated with the TSP will aid in restoring Stump Creek to a more natural, healthy riverine system.

Under the TSP, there would be a temporary increase in loosened sediment and erosion as a result of clearing, snagging, and excavation causing minor, short-term adverse impacts to water quality. However, BMPs to include retaining natural stream meanders and avoiding isolated trapezoidal channels will be employed for turbidity control when working within the wetted stream perimeter. After the stream settles post-construction, the TSP is expected to ultimately improve water quality by facilitating freshwater flow through the system. Long-term, the increased flows will decrease stagnant waters and improved dissolved oxygen content. This long-term improvement in water quality may also benefit the adjacent larger wetland complex as the inflow received from Stump Creek would be of higher quality.

A Short Term Activity Authorization (STAA) permit will be obtained from the Arkansas Department of Energy and Environment for this process. All excavated materials will be disposed of off-site, and no materials will be deposited into waters of the United States.

4.2 Wetlands

The lower end of Stump Creek passes through a bottomland hardwood wetland complex before entering Little Fourche Creek. The water level in this wetland complex is dependent on rainfall events and the degree of standing or backed up water in the Little Fourche Creek/Fourche Creek drainage basin. This wetland area is a part of the 2000 acre Fourche Bottoms urban wetland complex, which is one of the largest tracts of urban wetlands in the country. The turquoise polygon depicted in extent map in the lower right corner of **Error! Reference source not found.** below shows these wetlands as depicted in the U.S. Fish and Wildlife Service's Wetland Inventory Mapper database. According to the database, the creek is classified as a riverine, streambed system that flows intermittently and is seasonally flooded.

The TSP will not result in the loss of any wetland acreage, and no adverse impacts to the downstream Fourche Bottoms wetland system are expected. The design does not include stream straightening and will follow and use existing stream morphology the greatest extent practicable. The beneficial long-term water quality impacts of this alternative will not only benefit the stream channel within the study area, but also downstream wetlands. Connectivity to the Fourche Bottoms wetland system will be maintained. During rain events, freshwater will travel downstream to Little Fourche Creek and the adjacent bottomland hardwood wetlands instead of the stagnant waters being retained in the channel's current state. Water is expected to have a higher dissolved oxygen content and decreased turbidity, benefitting wetland vegetation and aquatic species.

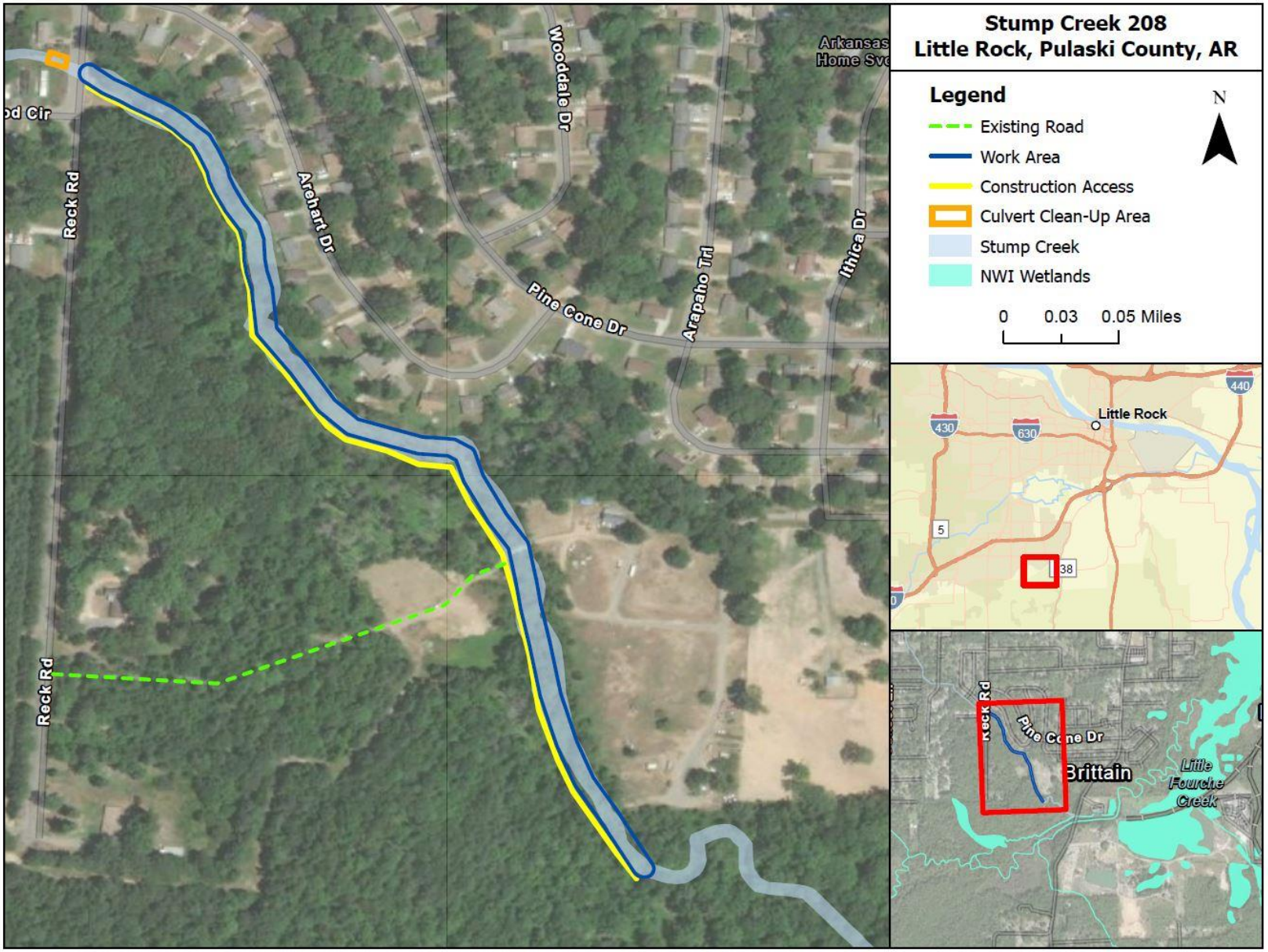

Figure 6 – Stump Creek Project Map

4.3 Aquatic Resources

Typical Gulf Coastal streams have a diverse fishery that includes bass, sunfish, catfish, suckers, darters and minnows. Urban streams generally have a diminished fishery in terms of species and numbers due to a variety of factors, including channelization, substrate modification, instream contamination from development in the watershed, and flashy flow patterns. The Stump Creek watershed is less than one square mile and the stream flow is ephemeral in nature. The substrate in Stump Creek is predominately sand, clay, and fines. Parts of the stream have been channelized. There is some incidental fish habitat in the area, but the lack of flow in the summer months result in sections of dry stream bed and some small enduring shallow pools. The lack of flow and relatively stagnant waters cause a low dissolved oxygen content, which inhibits aquatic species from flourishing. It is unlikely any significant fish populations exist in the project area.

Due to the nature of the streambed and lack of perennial flow, there are no significant aquatic features in the project footprint. Individual fish species, potentially consisting of mosquito fish and pirate perch, in the immediate construction area will be temporarily disturbed and likely migrate away from the area during construction of Alternative 4a. They would likely return to the habitat upon construction completion. Adequate fish habitat is limited in this stream channel due to past modifications to enhance storm water conveyance and low dissolved oxygen content, so adverse impacts to aquatic resources from construction are expected to be short-term, and ultimately beneficial as water quality improves post-construction.

4.4 Vegetation

General vegetation adjacent to the Stump Creek channel consists of that typical of a wetland bottomland hardwood system. Major forest vegetation types occurring in these areas include: ash (*Fraxinus spp.*), box elder (*Acer negundo*), hackberry (*Celtis occidentalis*), sugarberry (*Celtis laevigata*), black willow (*Salix nigra*), roughleaf dogwood (*Cornus drummondii*), holly (*Ilex spp.*), wild plum (*Prunus americana*), willow oak (*Quercus phellos*), water oak (*Quercus nigra*), and associated mid-story and understory species. Mature loblolly pines (*Pinus taeda*) are also scattered along the banks.

This area has been disturbed previously due to street and residential development adjacent to the stream channel. The stream banks of Stump Creek are highly altered in the upper portion of the drainage basin. Some of the stream has been channelized to facilitate storm water drainage. Exotic species such as mimosa (*Albizia julibrissin*) and Chinese privet (*Ligustrum sinense*) are both present along the stream bank. There is some forested vegetation along Stump Creek in the study area downstream of Reck Road.

Selective tree cutting will be implemented to the greatest extent practicable while establishing access paths; however, a 20-foot wide path with 5-foot of overhead limb trimming is required to allow the necessary equipment access to the stream. Conservation of native, mature tree species will be prioritized, and non-native, nuisance, less desirable species will be targeted during tree removal.

4.5 Wildlife and Endangered Species Act

Located near the Fourche Bottoms wetland complex, the lower portion of the Stump Creek watershed could potentially have an abundance of wildlife. Though in an urban setting, sightings of white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), beaver (*Castor canadensis*), skunk (*Mephitis mephitis*), rabbits (*Sylvilagus floridanus* and *Sylvilagus aquaticus*), squirrels (*Sciuridae* spp.), waterfowl and other

bird species are common. Turtles, snakes, frogs, and other amphibians are common along the stream channel.

Table 1 – Federally Listed Species

Common Name	Scientific Name	Status
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered
Tricolored Bat	*Perimyostis subflavus*	Proposed Endangered
Eastern Black Rail	*Laterallus jamaicensis ssp. jamaicensis*	Threatened
Piping Plover	*Charadrius melodus*	Threatened
Red Knot	*Calidris canutus rufa*	Threatened
Alligator Snapping Turtle	*Machrochelys temminckii*	Proposed Threatened
Monarch Butterfly	*Danaus plexippus*	Candidate

Under the proposed action, no direct or indirect impacts to the listed eastern black rail, piping plover, and red knot, nor the candidate monarch butterfly, are expected. Based on the habitat and resources available within the action area as well as known species ranges, these species are not expected to be present or affected by the proposed action. In the event that these species do make a rare appearance within the study area, it would likely be short in duration during migration. A No Effect determination has been made for the northern long-eared bat, eastern black rail, piping plover, red knot, and monarch butterfly.

Time constraints will be implemented on construction efforts, specifically tree cutting, to occur outside of the tricolored bat pup season (May 15 – July 31) to minimize effects on the species as a result of the proposed action. While the existing habitat is of poor quality, the alligator snapping turtle may still be present in the area, and project actions will be removing the snags and structure from Stump Creek, thereby degrading the suitability of the habitat. Because the tricolored bat and alligator snapping turtle are listed, respectively, as proposed endangered and threatened species, the effect determination is based on the whether or not the action is expected to appreciably reduce the reproduction, numbers, or distribution of the species. The proposed action would have no measurable impact on the status of the two species and therefore is not likely to jeopardize the continued existence of the tricolored bat or alligator snapping turtle. If either species is listed prior to project completion, the direct and indirect effects of the proposed action May Affect, but are Not Likely to Adversely Affect the tricolored bat and alligator snapping turtle. If necessary, the USACE will follow all appropriate processes to ensure the handling of tricolored bat and alligator snapping turtle is compliant with the ESA.

Coordination with the USFWS is pending, and compliance documents will be included in Appendix A, Endangered Species Act Coordination, when completed.

5. Conclusion

Overall, minor, short-term adverse impacts to water quality and aquatic resources can be expected as a result of the TSP, but these impacts are limited to the active construction period of approximately three months. The benefits of restoration efforts and ultimately the stream restoration features of the project itself would create long-term beneficial impacts to Stump Creek and the downstream Fourche Bottoms wetland complex.

No other projects are known to be occurring nearby, thus this project will not cumulatively contribute to adverse environmental impacts outside of the expected project-specific effects.

All materials, both cleared vegetation and excavated sediment, will be removed from the project site and disposed of in accordance with all applicable regulations at a designated off-site location. In conclusion, considering Federal environmental justice indicators, integration of avoidance and minimization practices on water quality and aquatic habitats, no other alternative provides the same level of flood risk reduction to residences in the project area.

6. Guideline Compliance

1. Review of Compliance (230.10(a)-(d))		
A review of the proposed project indicates that:	**Yes**	**No***
a. The placement represents the least environmentally damaging practicable alternative and, if in a special aquatic site, the activity associated with the placement must have direct access or proximity to, or be located in the aquatic ecosystem, to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative).	**X**	
b. The activity does not appear to:		
1) Violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act;	**X**	
2) Jeopardize the existence of Federally-listed endangered or threatened species or their habitat; and	**X**	
3) Violate requirements of any Federally-designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies).	**N/A**	
c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms that are dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see values, Section 2)	**X**	
d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see Section 5)	**X**	

2. Technical Evaluation Factors (Subparts C-F)			
	Not Applicable	**Not Significant**	**Significant***
a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)			
1) Substrate impacts		**X**	
2) Suspended particulates/turbidity impacts		**X**	
3) Water column impacts		**X**	
4) Alteration of current patterns and water circulation		**X**	
5) Alteration of normal water fluctuation/ hydroperiod		**X**	

2. Technical Evaluation Factors (Subparts C-F)			
	Not Applicable	**Not Significant**	**Significant***
6) Alteration of salinity gradients	**X**		
b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)			
1) Effect on threatened/endangered species and their habitat	**X**		
2) Effect on the aquatic food web		**X**	
3) Effect on other wildlife (mammals, birds, reptiles and amphibians)		**X**	
c. Special Aquatic Sites (Subpart E)			
1) Sanctuaries and refuges	**X**		
2) Wetlands		**X**	
3) Mud flats	**X**		
4) Vegetated shallows		**X**	
5) Coral reefs	**X**		
6) Riffle and pool complexes		**X**	
d. Human Use Characteristics (Subpart F)			
1) Effects on municipal and private water supplies	**X**		
2) Recreational and commercial fisheries impacts		**X**	
3) Effects on water-related recreation		**X**	
4) Aesthetic impacts		**X**	
5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	**X**		

*** Where a 'Significant' category is checked, add explanation below.**

3. Evaluation of Dredged or Fill Material (Subpart G)	
a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (check only those appropriate)	
1) Physical characteristics	**X**
2) Hydrography in relation to known or anticipated sources of contaminants	**X**

3. Evaluation of Dredged or Fill Material (Subpart G)	
3) Results from previous testing of the material or similar material in the vicinity of the project	**N/A**
4) Known, significant sources of persistent pesticides from land runoff or percolation	**X**
5) Spill records for petroleum products or designated (Section 311 of Clean Water Act) hazardous substances	**X**
6) Other public records of significant introduction of contaminants from industries, municipalities, or other sources	**X**
7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	**X**

List appropriate references: Appendix C – HTRW

3. Evaluation of Dredged or Fill Material (Subpart G) (continued)	Yes	No
b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and placement sites and not likely to degrade the placement sites, or the material meets the testing exclusion criteria.	**X**	

4. Placement Site Delineation (230.11(f))	
a. The following factors as appropriate, have been considered in evaluating the placement site:	**N/A**
1) Depth of water at placement site	
2) Current velocity, direction, and variability at placement site	
3) Degree of turbulence	
4) Water column stratification	
5) Discharge vessel speed and direction	
6) Rate of discharge	
7) Fill material characteristics (constituents, amount, and type of material, settling velocities)	
8) Number of discharges per unit of time	
9) Other factors affecting rates and patterns of mixing (specify)	

List appropriate references: N/A

4. Placement Site Delineation (230.11(f)) (continued)	Yes	No
b. An evaluation of the appropriate factors in 4a above indicates that the placement site and/or size of mixing zone are acceptable.	**N/A**	

5. Actions to Minimize Adverse Effects (Subpart H)	Yes	No
All appropriate and practicable steps have been taken, through application of recommendations of 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.	**X**	

List actions taken:

1) Best available practical techniques and BMPs would be utilized during construction activities to avoid and minimize potential temporary and long-term adverse impacts.
2) Disturbed areas that will not be maintained for O&M access will be revegetated with native grass seed mixture (species to be determined in PED).
3) Limiting ground disturbance necessary for staging areas, access routes, etc. to the smallest area necessary to safely operate during construction;
4) Movement of heavy equipment and support vehicles would utilize predetermined access roads to the greatest extent possible. Ingress and egress to access the creek will utilize minimal area needed to complete work.
5) Refueling and maintenance of vehicles and equipment in designated areas to prevent accidental spills and potential contamination of water sources and the surrounding soils;
6) Limiting idling of vehicles and equipment to reduce emissions;
7) Minimizing project equipment and vehicles transiting between the staging area and restoration site to the greatest extent practicable, including but not limited to using designated routes, confining vehicle access to the immediate needs of the project, and coordinating and sequencing work to minimize the frequency and density of vehicular traffic; and,
8) Minimizing use of construction lighting at night and when in use, directing lighting toward the construction activity area and shielding from view outside of the project area to the maximum extent practicable.

6. Factual Determination (230.11)	Yes	No*
A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge as related to:		
a. Physical substrate at the placement site (review Sections 2a, 3, 4, and 5 above)	**X**	

b. Water circulation, fluctuation and salinity (review Sections 2a. 3, 4, and 5)	**X**	
c. Suspended particulates/turbidity (review Sections 2a. 3, 4, and 5)	**X**	
d. Contaminant availability (review Sections 2a. 3, and 4)	**X**	
e. Aquatic ecosystem structure and function (review Sections 2b and c, 3, and 5)	**X**	
f. Placement site (review Sections 2, 4, and 5)	**X**	
g. Cumulative impacts on the aquatic ecosystem	**X**	
h. Secondary impacts on the aquatic ecosystem	**X**	

7. Evaluation Responsibility	
a. This evaluation was prepared by: Position:	**Elizabeth Knapp** **Biologist,** **Regional Planning & Environmental Center**

8. Findings (Select One)	
a. The proposed placement site for discharge of or fill material complies with the Section 404(b)(1) Guidelines.	**X**
b. The proposed placement site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines with the inclusion of the following conditions: N/A	
c. The proposed placement site for discharge of dredged or fill material does not comply with the Section 404(b)(1) Guidelines for the following reason(s): 1) There is a less damaging practicable alternative 2) The proposed discharge will result in significant degradation of the aquatic ecosystem 3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem	

_____ Date	_____ Brandon Wadlington Interim Chief, Environmental Branch, RPEC