APPENDIX F. Part 3

Public and Interagency Coordination

Updated coordination that has occurred since the release of the initial draft release in May 2021.

CONTENTS

Section 1. Interagency Team Meeting Material – 3 March 2022

This section contains information that was shared with the full interagency team on March3, 2022. Introductory information, the Powerpoint Presentation, and notes that were provided back to the interagency team are included.

From:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
To:	Morris, Kelly; FBass@mdeq.ms.gov; Dennis Riecke; larry.long@epa.gov; chantel.davis@usda.gov
Cc:	Pruitt, Bruce ERDC-RDE-EL-MS CIV; Haring, Christopher P CIV (USA)
Subject:	FW: Desoto County Feasibility Study
Date:	Thursday, May 13, 2021 2:37:00 PM
Attachments:	Channel Enlargement.jpg DetentionPonds.jpg NLCD_Footprints_on_Ecosystem_Streams.jpg Grade Control Structures.jpg
Importance:	High

Hello Interagency Team,

The USACE has reached a tentatively selected plan and are working on getting the draft Integrated Feasibility Report/EIS out for review around the end of May. I would like to set up a coordination meeting with everyone from the IAT and the ERDC group to go through all pertinent information. As the draft Integrated Feasibility Report and EIS is set to release on 28 May 2021, I am proposing a meeting on 17 June 2021 at 10 am to give everyone a chance to review the document prior to meeting. This is tentative, as I have not gathered your schedules and availability. Once the draft report is released, any comments would be due within 45 days of the release. Please feel free to call me any time, at all.

The Study includes a flood risk component which requires compensatory mitigation, as well as an ecosystem restoration component, both are described below.

We have worked/are working with the Engineering Research and Development Center to certify a stream condition index (SCI) model. The purpose of the assessment was to develop a stream condition assessment method that identified existing conditions within the watershed, detailed the major water resources problems and opportunities in the watershed, and recommended tools and a strategic course of action for achieving the desired conditions in the watershed. The SCI, was formulated, tested and refined to determine the existing conditions, identify the problems in the watershed, prioritize stream segments for restoration, recommend structural and non-structural restoration designs, and provide a numerical assessment of alternatives for planning purposes. The SCI is a visual, multi-metric assessment tool using metrics to characterize the hydrologic, geomorphic, water quality, plant habitat and animal habitat of a selected stream reach.

This effort represents a method of assessing ecosystems using multi-attributes across multi-scales, called the “Multi-Scale Watershed Approach” (MSWA) that was first developed and certified through the National Ecosystem Planning Center of Expertise (ECO-PCX) for the Duck River Watershed Plan, located in middle Tennessee. The concept behind the MSWA was to establish a means of utilizing readily available data and surface assessments (i.e., “boots-on-the-ground” observations) to create an overall knowledge base focusing on watershed problems and opportunities. The outcome of MSWA can become the principle component of the decision-making process such that water resource managers have the ability to make scientifically defensible decisions not only at project specific scales, but also beyond the footprint of the project to the entire watershed. From the watershed perspective, the cause and effect relationships between land use, water quality and quantity, in-channel and riparian conditions, and biotic responses culminate at a single outlet from the watershed and are representative of the ecological condition of the watershed. In addition,

assessment at the watershed scale offers advance planning including design, construction, and operation, maintenance, repair, replacement and restoration of aquatic ecosystems.

I am copying in a description of the proposed plans below. Let me know if you have any questions or concerns. I'll send an email out that is similar to this one to the entire team asap.

PROJECT DESCRIPTION.
The current Tentatively Selected Plan (TSP) combines the Locally Preferred Plan (LPP) for flood risk management and the National Ecosystem Restoration (NER) plan. The LPP includes the National Economic Plan with additional features the local sponsor is in favor of retaining. The following is a description of the features proposed in each of the plans.

NED Plan:

A channel enlargement along Horn Lake Creek (HLC) would be constructed downstream of Goodman Rd. in Horn Lake, Mississippi, enlarging the channel bottom from approximately 15-25 feet to approximately 40 feet for approximately 0.8-mile from stream mile 18.6 to Mile 19.41. The creek banks would be constructed for stability at a slope of approximately 3-foot horizontal to 1-foot vertical (3:1). The Horn Lake Creek channel enlargement would require tree clearing of approximately 10 acres along one bank of Horn Lake Creek for access, bank stabilization, and excavation. The enlargement and slope flattening would require approximately 95,000 cubic yards of excavation, all of which would be disposed off-site. Approximately 22,750 tons of riprap would be placed to prevent scour damage. The riprap would be placed in a three-foot deep layer on the bottom and 5 feet up both banks. The riprap would be placed over approximately 6,000 tons of filter material. The upper banks would be protected with 18,780 square yards of turf reinforcing mat. The 0.04 AEP Nonstructural aggregation feature reduces stages during the 0.01 AEP event for 158 structures with an average reduction of 0.75 feet. During the 0.04 AEP event this feature reduces stages for 125 structures with an average reduction of 1 foot.

The Lateral D Detention Basin would be in-line with the stream, a tributary to HLC. The full basin would encompass approximately 22 acres of BLH forested land, while the bottom area of the detention basin is approximately 16 acres. Tree clearing would be required for the full acreage mentioned, and excavation would be required to a depth of approximately 10 with 3-foot horizontal to 1-foot vertical side slopes. A 500-linear foot outlet embankment would be constructed to include a 48-inch reinforced concrete pipe (RCP) outlet with a 100-linear foot overflow spillway armored with approximately 2,000 tons of riprap over approximately 500 tons of filter material on the downstream side. The spillway would operate at elevation 300.0 (the 0.50 annual chance exceedance (ACE) event, or 2-year flood). The maximum storage of 177 acre-feet would require approximately 350,000 CY of excavation. The current design assumes replanting with native vegetation of approximately 10%, or 2.2 acres, of the area that would be cleared.

Locally Preferred Plan:

The comparison of the LPP Plan and the NED Plan is the addition of two detention basins, one Cow

Pen Creek and the other on Rocky Creek. These basins reduce structural damages on each of the tributaries and were retained at the request of the DeSoto County Board of Supervisors (the non-federal sponsor, NFS).

The Rocky Creek in-line detention basin would total approximately 9 acres and would require approximately 7.5 acres of tree clearing and excavation to a depth of approximately 10 feet. The pool bottom area would encompass approximately 6 acres. The dry detention basin would have a single pool elevation of approximately 302.0. Slopes would be constructed at approximately 3H:1V for stability. A downstream embankment would be constructed and extend approximately 500 linear feet. The embankment would include a 48-inch RCP outlet and 100- linear foot overflow spillway armored with approximately 6,000 tons of riprap placed over approximately 1,500 tons of filter material on the downstream side. The current design assumes replanting with native vegetation of approximately 10%, or 0.9 acre, of the area that would be cleared.

The Cow Pen Creek detention basin would total approximately 20 acres in two pools (a 12-acre upstream pool and an 8-acre downstream pool) and would require approximately 8.5 acres of tree clearing (upstream pool only) and excavation to a depth of approximately 10 feet. The upper pool would have a bottom elevation of 262.0 with a bottom area of 10 acres, and slopes would be constructed at 3H:1V back to the existing grade. A 500-linear foot embankment would be constructed on the downstream end of the detention basin and would include a 48-inch RCP outlet and 100-linear foot overflow spillway armored with approximately 2,000 tons of riprap over approximately 500 tons of filter material on the downstream side. The spillway would operate at elevation 272.0, approximately at the 0.50 ACE event. The maximum storage of 108 acre-feet requires approximately 175,000 cubic yards of excavation which would be disposed of off-site within an upland disposal area, no impacts are anticipated. The current design assumes replanting with native vegetation of approximately 10%, or 1.2 acres, of the area that would be cleared.

The downstream Cow Pen detention basin would be offline and encompass approximately 8 acres. The basin would have a bottom elevation of 258.0 with a bottom area of approximately 6 acres. Slopes would be constructed up to the existing grade at 3H:1V. A 500-linear foot embankment would be constructed on the downstream end of the detention basin and would include a 48-inch RCP outlet and 100-linear foot overflow spillway armored with approximately 2,000 tons of riprap over approximately 680 tons of filter material. An inlet sill would require an additional 800 tons of riprap. The 100-foot wide spillway would operate at elevation 268.0, approximately at the 0.50 ACE event. The maximum storage of 68 acre-feet requires approximately 115,000 cubic yards of excavation which would be disposed of off-site. The current design assumes replanting with native vegetation of approximately 10%, or 1.2 acres, of the area that would be cleared.

Active Restoration is the recommended compensatory mitigation plan. A total of approximately 42.5 acres of agricultural land would be reforested by planting native trees, other activities as described below may also be included, as determined necessary by the IAT. A planting plan would be created in coordination with the IAT and included in the release of the final Environmental Impact Statement and Conceptual Mitigation Plan. A site- specific mitigation plan would be developed during PED, further detailing a planting plan. Grade control structures or low-water weirs, strategic placement of coarse woody debris, construction of in-stream habitat, and bench cuts may also be considered for

compensatory mitigation; however, no sites have been identified and detailed analyses have not been conducted.

NER Plan:

The ecosystem restoration goal is to stabilize channels and connect/improve riparian habitat, which would minimize channel degradation and erosion and support aquatic ecosystem form and function along main stem channels and tributaries in the DeSoto County watersheds. Currently, the erosion, head-cutting and stream bed degradation leads to bank failures, sedimentation, and prevents stable habitat from forming. Riparian and potentially reforestable acreages were determined using National Land Cover Data mapping within 328 feet of each stream. Categories assumed to be reforestable include cultivated crops, barren land, hay/pasture, herbaceous, and shrub/scrub. This plan consists of eleven streams that would have a system of grade control structures (GCS) placed in each of the creeks (See Table below). The plan also included a riparian reforestation feature of 25% of the reforestable lands within 100 meters of each stream. Grade control structures were identified as systems of structures paired with various stabilization techniques such as stone toes, channel training structures, and pool and riffle components.

Stream	Alt. ID	# GCS	Riparian Reforestation (acres)	# Average Annual Habitat Units
Camp	CP-5	7	98	98
Cane	CN-5	9	66	54
Hurricane	HN-5	5	160	140
Lick	LC-5	2	36	24
Nonconnah	NO-5	6	107	65
Mussacuna	MC-5	2	57	40
Horn Lake	HL-5	14	64	101
Nolehoe	NL-5	11	32	54
Johnson	JC-5	11	122	113
Red Banks	RB-5	5	48	46
Short Fork	SF-5	9	106	84

Again, please feel free to call me at any time with any questions or concerns.

Thank you,
Andrea L. Carpenter
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Fax: 901-544-3955

From:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
To:	Morris, Kelly M; Davis, Chantel - NRCS, Senatobia, MS; FBass@mdeq.ms.gov; Long, Larry; Dennis Riecke
Cc:	Lieb, Pamela D CIV USARMY CEMVM (USA); Hiltonsmith, Jennifer L CIV CPMS (USA)
Subject:	North DeSoto, Mississippi Feasibility Study
Date:	Thursday, February 17, 2022 4:37:00 PM
Attachments:	DeSoto_proposed Levee_Floodwall alternative.pdf

Hello All,
Hope this finds you well. We haven't had any updates for you regarding the North DeSoto Feasibility Study, recently, due to a re-analysis of our proposed flood-risk management features; however, we have developed some fairly significant changes which are described below. Bottom line up front (described in more detail below), the detention basins and channel enlargement are no longer being considered as a viable option for construction. The PDT is proposing a floodwall/levee combination to prevent the overflow of Horn Lake Creek during flood events from impacting the Bullfrog Corner area of Horn Lake, Mississippi. Essentially all tree clearing impacts have been eliminated from consideration and no wetlands would be impacted; therefore, no compensatory mitigation is being proposed. I am attaching an aerial pdf for your convenience.
I would like to have a webex meeting to discuss all of this prior to our scheduled Tentatively Selected Plan meeting on 9 March 2022. How is everyone's availability on 2 March 2022?

The Memphis Metropolitan Stormwater - North DeSoto County, Mississippi Feasibility Study (Study), initiated in 2018, authorized the US Army Corps of Engineers (USACE) to investigate flood damages from stormwater, restore environmental resources, and to improve the quality of water entering the Mississippi River and its tributaries. On February 26, 2021 a tentatively selected plan (TSP) for flood risk management (FRM) and ecosystem restoration (ER) was identified, with the release of the draft Memphis Metropolitan Stormwater – North DeSoto County, Mississippi Integrated Feasibility Report and Environmental Impact Statement being released in June 2021. The ER component of the study included grade control and reforestation along 11 streams in DeSoto County, while the FRM component included four detention basins totaling approximately 38 acres of tree clearing; a 0.8 mile channel enlargement with full riprap bottom totaling approximately 10 acres of tree clearing along Horn Lake Creek, and non-structural features such as voluntary flood-proofing gates and residential raises. Since that time, additional data indicated that the proposed FRM features did not adequately address the flood damages. These updates required a re-evaluation of the TSP benefits, which showed that none of the FRM structural features were justified (channel enlargement and detention basins).

During re-evaluation, the team determined that a small levee and floodwall would provide the most effective FRM benefits. The proposed floodwall would extend approximately 525 feet beginning just south of Goodman Road, and the levee would extend south for approximately 2,475 feet and would tie into high-ground immediately north of a residential area. The proposed levee width is approximately 12 feet with 3-foot horizontal to 1-foot vertical side-slopes. Approximately 14,000 cubic yards of earthen material would be used to construct the levee along with approximately 300 cubic yards of reinforced concrete for the floodwall. The levee footprint would require approximately 8 acres of land and the demolition of an unused building. The adjacent riverside area may also be used to supply the earthen material, and/or area for reforestation or other environmental features. Please reference the attached map for the locations of the floodwall, levee and potential borrow/reforestation area. The newly proposed levee and floodwall would not require significant tree clearing.

Acreages proposed in the ER TSP are being reduced due to a USACE policy regarding ecosystem restoration and real estate acquisition cost. The MVM team is working to determine the most appropriate plan through the Corps of Engineers Incremental Cost Analysis tool. A best-buy plan will be proposed once the modeling is complete. The USACE team expects to select a new TSP in early March with the release of an updated draft Integrated Feasibility Report and Environmental Assessment in early May of 2022.

If you have any questions, please contact Andrea Carpenter, Environmental Manager, at (901-544-00817 or Andrea.L.Carpenter@usace.army.mil.

Thank you and please don't hesitate to contact me.

Thank you,
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Aerial image showing the newly proposed Floodwall/Levee Combination for the North DeSoto, Mississippi Feasibility Study.

From:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
To:	Morris, Kelly M; Davis, Chantel - NRCS, Senatobia, MS; FBass@mdeq.ms.gov; Long, Larry; Dennis Riecke; Lieb, Pamela D CIV USARMY CEMVM (USA); Roberts, Jennifer C CIV USARMY CEMVN (USA); Lambert, Edward P CIV USARMY CEMVN (USA); Perez, Andrew R CIV USARMY CEMVN (USA); Milazzo, John W (Jack) III CIV USARMY CEMVN (USA); Musso, Joseph R CIV USARMY CEMVN (USA); Simmerman, William A CIV USARMY CEMVM (USA)
Subject:	DeSoto Flood Risk Management and Ecosystem Restoration Feasibility Study
Start:	Thursday, March 3, 2022 10:00:00 AM
End:	Thursday, March 3, 2022 11:00:00 AM
Location:	WebEx
Attachments:	North DeSoto Mississippi Feasibility Study.msg

DeSoto Flood Risk Management and Ecosystem Restoration Feasibility Study

Hosted by Andrea L Carpenter Crowther

Hello All,

I am including the email I sent on 17 February 2022 to open the discussion on the newly proposed alternative (Levee/Floodwall). One likely change is that we have tentatively decided to stay with EIS rather than EA.

Due to a re-analysis of our proposed flood-risk management features. Bottom line up front, the detention basins and channel enlargement are no longer being considered as a viable option for construction. The PDT is proposing a floodwall/levee combination to prevent the overflow of Horn Lake Creek during flood events from impacting the Bullfrog Corner area of Horn Lake, Mississippi. Essentially all tree clearing impacts have been eliminated from consideration and no wetlands would be impacted; therefore, no compensatory mitigation is being proposed.

The USACE team expects to select a new TSP in early March with the release of an updated draft Integrated Feasibility Report and Environmental Impact Statement in early May of 2022.

We need to update our coordination (WQC, Prime and Unique Farmlands, EJ, ESA, etc.). If you are not available to attend, please let me know so that we can reschedule/ meet separately.

If you have any questions, please contact Andrea Carpenter, Environmental Manager, at (901-544-00817 or Andrea.L.Carpenter@usace.army.mil <mailto:Andrea.L.Carpenter@usace.army.mil> .

Thank you and please don’t hesitate to contact me.

Thank you,

Andrea L. Carpenter

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MEMPHIS METRO
NORTH DESOTO, MS
PLANNING STUDY

IAT Meeting
March 3, 2022

US Army Corps of Engineers

BUILDING STRONG®

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AGENDA

1. Path that led to revised TSP
2. Authorization & Study Area
3. Flood Risk Mgmt. (FRM) Objectives
4. FRM Alternatives
5. FRM Final Array
6. FRM Tentatively Selected Plan (LPP)
6. Environmental Compliance
7. FRM Risks
8. Ecosystem Restoration (ER) Study Area
9. ER Objectives
10. Model Development
11. ER Alternatives
12. ER Tentatively Selected Plan
13. ER Risks
14. Schedule

MEMPHIS METRO AUTHORIZATION

This study is conducted in response to a March 7, 1996 resolution by the United States House of Representatives Committee on Transportation and Infrastructure:

"The Secretary of the Army reviewed the report of the Chief of Engineers on the Wolf River and Tributaries, Tennessee and Mississippi, published as House Document Numbered 76, Eighty-fifth Congress, and other pertinent reports, to determine whether any modifications of the recommendations contained therein are advisable at this time, with particular reference to the need for improvements for flood control, environmental restoration, water quality, and related purposes associated with storm water runoff and management in the metropolitan Memphis, Tennessee area and tributary basins including Shelby, Tipton, and Fayette Counties, Tennessee, and DeSoto and Marshall Counties, Mississippi. This area includes the Hatchie River, Loosahatchie River, Wolf River, Nonconnah Creek, Horn Lake Creek, and Coldwater River Basins. The review shall evaluate the effectiveness of existing Federal and non-Federal improvements and determine the need for additional improvements to prevent flooding from storm water, to restore environmental resources, and to improve the quality of water entering the Mississippi River and its tributaries."

PATH THAT LED TO A REVISED TSP

BLUF: We have identified an effective, efficient, complete and acceptable Flood Risk Management and Ecosystem Restoration plan

- September 2021 received an Exemption for time to fully evaluate both FRM and NER and reduce risks
- Increased fidelity with 2D hydraulic modeling
- 2D modelling and subsequent economic analysis showed a reduction in damages (~$6M down to ~$3M)

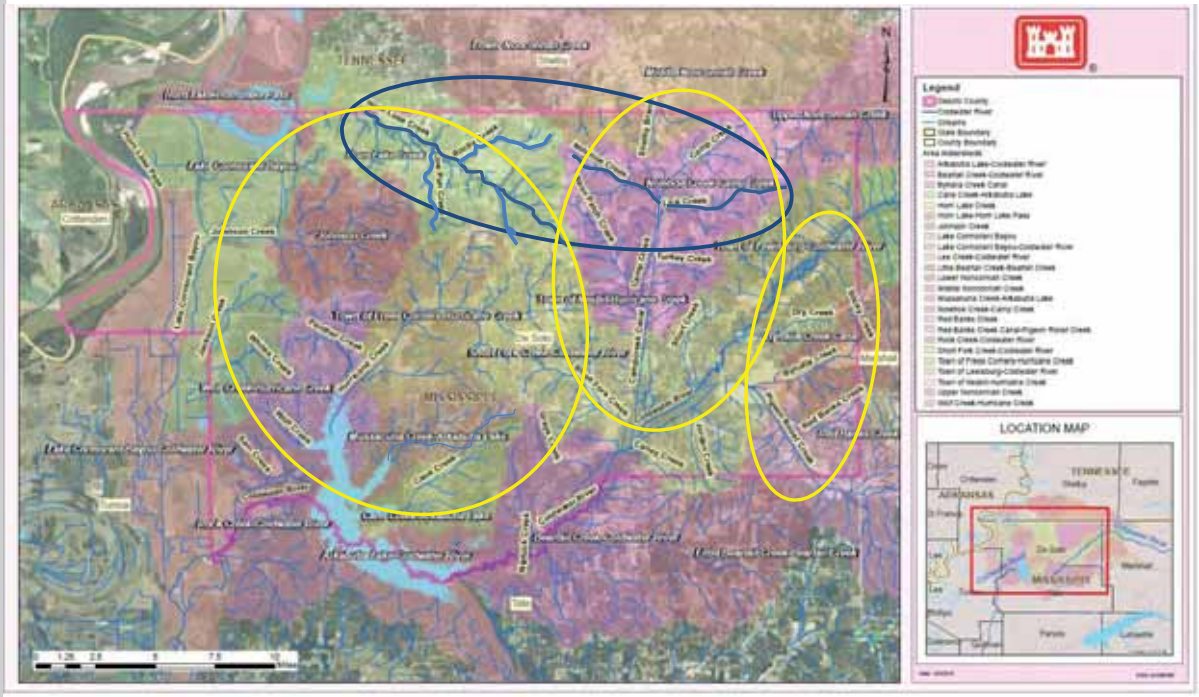
PDT has

- Identified a Levee/Floodwall + Nonstructural (commercial dry floodproofing) plan ($16.2M) that provides benefits to Bullfrog Corner
- Identified stream stabilization and aquatic habitat restoration that provides habitat benefits across the County

Path Forward

- Coordinate with Public, Interagency Team, SHPO, Federally recognized Tribes
- Re-release draft NEPA documentation

STUDY AREA



DeSoto County has the fastest growing population in Mississippi (178,751).

Hurricane, Johnson and Horn Lake Creek, and Coldwater River basins were evaluated for flood damages and ecosystem degradation

While Horn Lake Creek, and Coldwater River basins had flood damages, all basins showed varying degrees of channel instability and aquatic habitat degradation

FLOOD RISK MANAGEMENT OBJECTIVES AND CONSTRAINTS

Objectives

- Reduce flood damages to businesses, residents and infrastructure in DeSoto County.
  - Quantitative Metric: structure damage
- Reduce risks to critical infrastructure.
  - Quantitative Metric: water surface elevation and timing of peak stage.
- Reduce risk to human life from flooding and rainfall events throughout the county.
  - Quantitative Metric: water surface elevation and timing of peak stage

Constraints

- Ensure study is compliant with FAA regulations associated with the Memphis International Airport. For all airports, the FAA recommends a distance of 5 miles between the farthest edge of the airport's airspace and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.
- Maintain consistency with DeSoto County Flood Damage Prevention Ordinance.

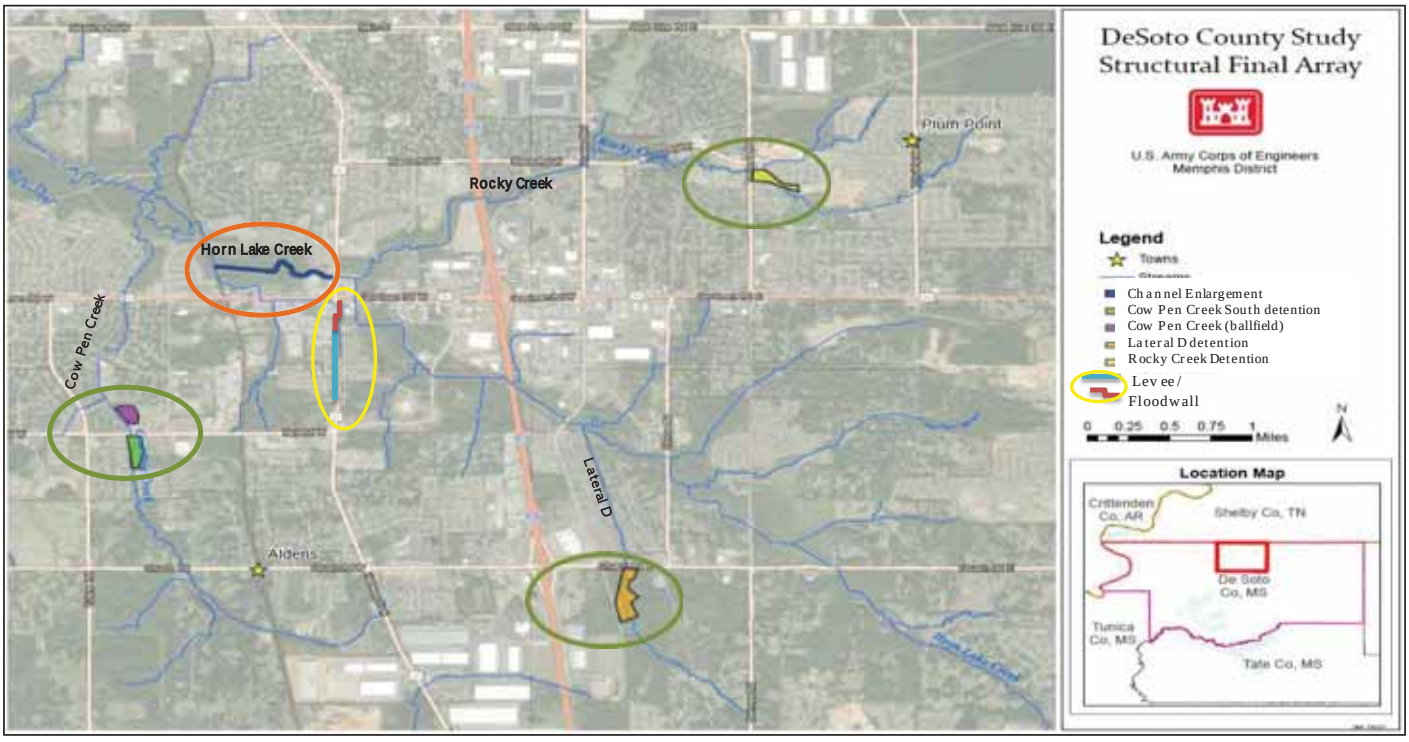
EXISTING CONDITIONS STRUCTURE DAMAGES

50%-60% of the total estimated damages in the existing condition for the whole study area are in Bullfrog corner.

FLOOD RISK FINAL ARRAY

	Nonstructural 1D	Channel Enlargement (2D)	Channel Enlargement+ 4 Detention Basins (2D)	Channel Enlargement+ Lateral D Detention (2D)	Levee-Floodwall + Nonstructural (Commercial dry floodproofing for 29 structures) (2D)
Total Project Costs					
First Cost	$ 63,944,000	$ 5,918,000	$ 49,427,000	$ 17,817,000	$ 16,271,000
Interest During Construction	$ -	$ 134,000	$ 1,115,000	$ 402,000	$ 367,000
Total Investment Cost	$ 63,944,000	$ 6,052,000	$ 50,542,000	$ 18,219,000	$ 16,638,000
Estimated Annual Costs					
Annualized Project Costs	$ 2,143,000	$ 203,000	$ 1,694,000	$ 611,000	$ 558,000
Annual OMRR&R	$ -	$ 362,000	$ 1,337,000	$ 683,000	$ 407,000
Total Annual Costs	$ 2,143,000	$ 565,000	$ 3,031,000	$ 1,294,000	$ 965,000
Average Annual Benefits					
Total Annual Benefits	$ 473,000	$ 504,000	$ 1,131,000	$ 453,000	$ 1,727,000
Net Annual Benefits	$ (1,670,000)	$ (61,000)	$ (1,900,000)	$ (841,000)	$ 762,000
Benefit to Cost Ratio	0.22	0.89	0.37	0.35	**1.79**
Residual Risk	$ 2,857,000	$ 2,353,000	$ 1,726,000	$ 2,404,000	$ 1,130,000

FINAL STRUCTURAL ALTERNATIVES FOR FLOOD RISK MANAGEMENT



NONSTRUCTURAL ALTERNATIVES FOR FRM

NONSTRUCTURAL AGGREGATION

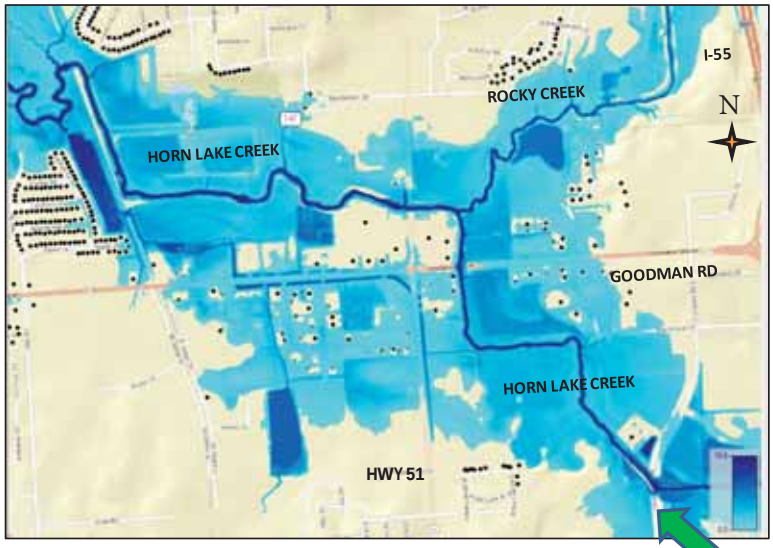
- 29 structures all experience flooding during FWOP condition
- Maximum inducement is 6”
- Nonstandard Estates will be Needed
- Floodproofing Agreement will be Needed
- Right of Entry will be Needed (Language can be provided by Real Estate to become part of the Floodproofing Agreement)
- Implementation Plan will be needed
- Participation is Voluntary

DRY FLOODPROOFING

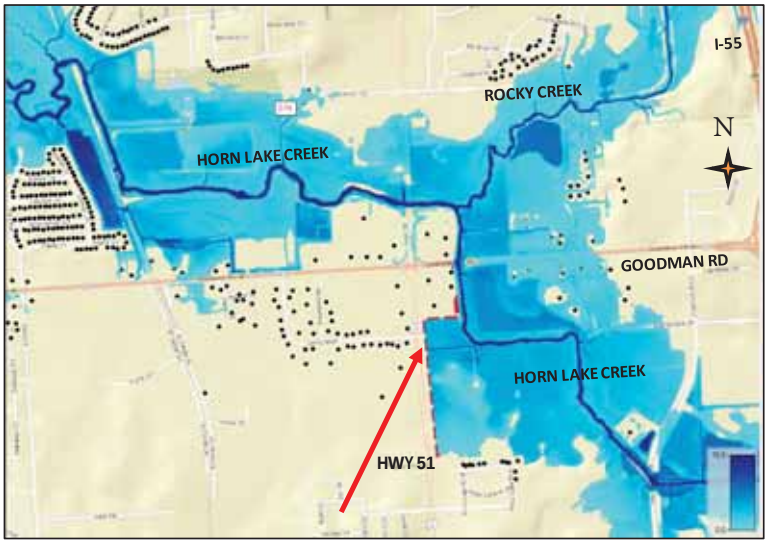
- Examples of dry flood-proofing measures:
  - Backflow prevention valves;
  - Closures on doors, windows, stairwells, and vents (Temporary or permanent);
  - Rearranging or protecting damageable property-e.g., relocate or raise utilities;
  - Sump pumps and sub-drains; and
  - Water resistant material; metal windows, doors and jambs; waterproof adhesives; sealants and floor drains.

Each structure will be evaluated for the most cost-effective nonstructural measure (dry floodproofing, or acquisition)

DEPTH MAP – 100 YR EVENT



Without Project



Levee & Floodwall
(Proposed FRM Project)

Water flows from SE to the NW in Horn Lake Creek through Bullfrog Corner

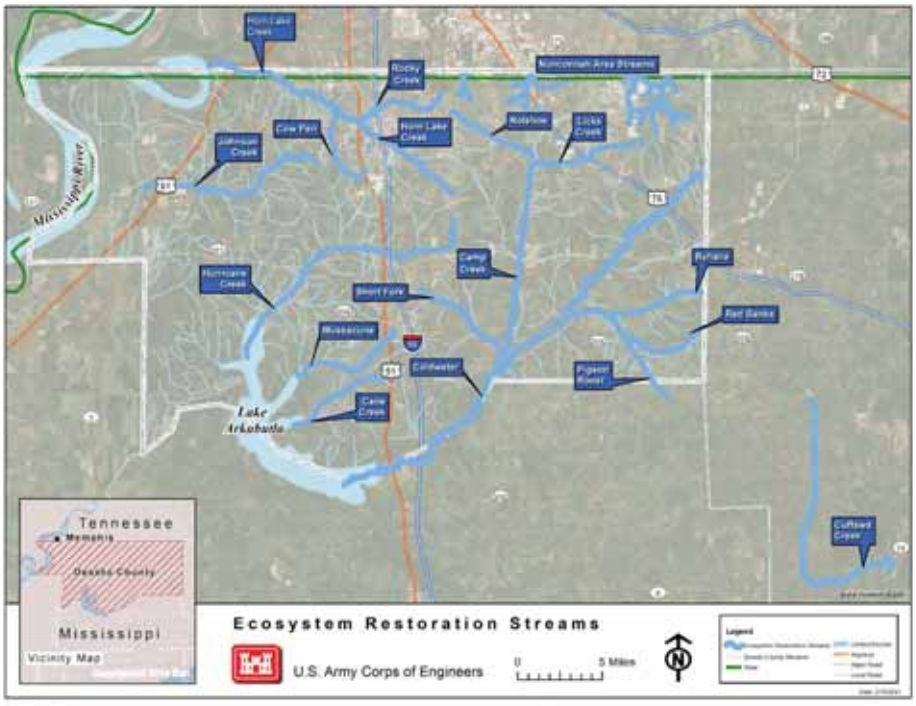
ENVIRONMENTAL COMPLIANCE

Law	Consultation Status
National Environmental Policy Act	9 August 2019 - NOI published in FR. 28 May 2021 - Published Draft EIS May 2022 - (new) Draft NEPA documentation is being prepared to allow new consideration of public, stakeholder, interagency and tribal comments. 3 March 2022 - IAT Meeting
National Historic Preservation Act, Section 106	Section 106 (NHPA) consultation with State and Tribal Historic Preservation Officers (SHPO/THPO) was initiated July 2019 and has been ongoing. Draft PA is complete and coordination for new project features has begun. Consultation meeting is scheduled for 21-23 March 2022.
Endangered Species Act, Section 7	Two threatened species: Wood stork, Northern long-eared bat Not likely to adversely affect (NLAA) concurrence September 22, 2020
Clean Water Act	Updated Coordination with IAT has begun. Section 404(b)(1) analysis was coordinated with initial draft EIS release, no comments received.
Clean Air Act	DeSoto County is currently in attainment for air quality standards.
Fish and Wildlife Coordination Act	USFWS provided a final CAR in July 2021. Minor recommendations were made, however, with the elimination of ecological impacts a request for an updated CAR has been made.
Prime and Unique Farmlands	Coordination with NRCS/USDA is ongoing due to changes in the proposed project footprint.
Hazardous Toxic and Radioactive Waste (HTRW)	No HTRW sites are known within the proposed project footprints.

QUESTIONS ABOUT FRM?

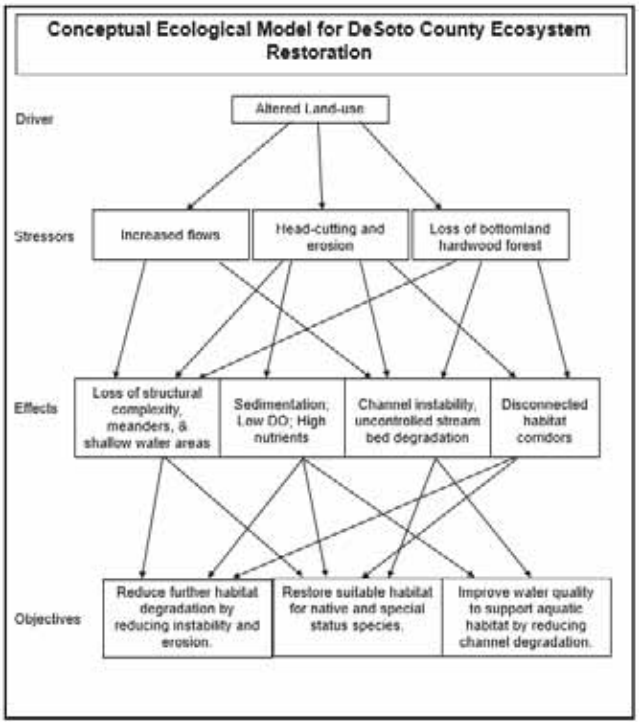
ECOSYSTEM RESTORATION (ER) STUDY AREA

- Ecosystem Restoration has been investigated for the following streams**:
  - Horn Lake Creek
  - (Cow Pen Creek)
  - (Rocky Creek)
  - Nonconnah Creek
  - (Coldwater River)
  - Lick Creek
  - Nolehoe Creek
  - Camp Creek
  - Hurricane Creek
  - Cane Creek
  - Mussacuna Creek
  - Johnson Creek
  - (Cuffawa)
  - Short Fork
  - Red Banks
  - (Pigeon Roost)
  - (Byhalia)



**( ) - Screened

CONCEPTUAL ECOLOGICAL MODEL



Many streams in DeSoto County are in a state of uncontrolled degradation (deepening and widening).

Largely due to heavy loss of riparian/forested habitat, increased flows due to altered land use and head-cutting.

Channels:

- Straight with steep banks and little to no natural floodplain
- Many are non-vegetated/very little beneficial native vegetation,
- Low to no surface protection (cropped/developed to top bank)
- Limited cover/forage potential
- Unbalanced aggradation/degradation in stream

STAGES OF CHANNEL DEGRADATION IN DESOTO COUNTY STREAMS

CEM Stage II. Middle Johnson Creek

CEM Stage III. Nolehoe Creek

CEM Stage I. Middle Johnson Creek (Trib)

CEM Stage IV. Lower Nolehoe Creek

CEM Stage V. Lower Johnson Creek

ER OBJECTIVES AND CONSTRAINTS

Objectives

- Reduce further habitat degradation by reducing channel instability and erosion.
  - *Metric*: channel evolution model, channel alteration, bank stability, bank angle, and surface protection;
- Restore suitable habitat for native and special status species.
  - *Metric*: habitat diversity, fish cover, canopy cover, and riparian zones and surface protection;
- Support aquatic habitat by reducing channel degradation.
  - *Metric*: bank stability, riparian zones, rooting depth, root density, surface protection, and bank angle

Constraints

- Ensure study is compliant with FAA regulations associated with the Memphis International Airport. For all airports, the FAA recommends 5 miles between the farthest edge of the airport's airspace and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.
- Maintain consistency with DeSoto County Flood Damage Prevention Ordinance;

ER MODEL DEVELOPMENT

- PDT worked closely with the USACE Engineering Research and Development Center (ERDC) to develop a multi-scale Watershed Assessment model.
- This Stream Condition Index (SCI) model, was formulated, tested and refined to:
  - Determine existing conditions
  - Identify problems in the watershed
  - Prioritize of stream segments for restoration
  - Recommend for structural and non-structural restoration design
  - Provide numerical assessment of alternatives for planning purposes.
- SCI is a visual, multi-metric assessment tool using metrics to characterize the hydro-geomorphology, water quality, plant habitat and animal habitat of a selected stream reach.
- This model can show ecosystem restoration benefits gained from bank stabilization/ grade control projects.

ER ALTERNATIVE DEVELOPMENT




Measures evaluated include:

- Grade control with various stabilization techniques such as stone toes, channel training structures, and pool and riffle components.

- Riparian buffer strips in varying sizes and locations. Riparian acreages were determined using National Land Cover Data mapping within 100-m of a stream. Categories assumed to be re-forestable include cultivated crops, barren land, hay/pasture, herbaceous, and shrub/scrub.

Johnson Creek

- Grade Control Structures: 11
- Bank Stabilization: ~6,300 ft
- Sediment Retained (over 50 years): 1,911,200 - 2,851,353 CY
- Acres retained (over 50 years): 30-50

- Riparian alternatives acreage:
  - Associated with GC ~ 43
  - 10% of reforestable area ~49

NER Tentatively Selected Plan

Stream Segment	25% Riparian with Grade Control	25% Acreage	10% Riparian with Grade Control	10% Acreage	Riparian Associated with Grade Control	GC Associated Acreage	Grade Control Only
Camp Creek	84	98	48	39	53	47	22
Horn Lake Creek		20	55	20	53	20	41
Johnson Creek		122	52	49	48	43	18
Cane Creek		66	21	26	17.4	20	3
Hurricane Creek	1	160	53	64	22	22	5
Lick Creek	1	36	10	14	8	11	3
Mussacana Creek		57	16	23	9	9	3
Nonconnah Creek		20	12	20	5	5	1
Nolehoe Creek		32	35	13	38	18	26
Short Fork		106	34	92	14	12	5
Red Banks	40	48	21	19	25	24	9
Total	621	765	357	379	292.4	231	136

25% Reforestation was determined to exceed the allowable cost of real estate acquisition per USACE Policy Guidance, optimized to 10% reforestation rather than 25% to reduce costs while conserving the importance of riparian buffer strips/reforestation.

TECHNICAL SIGNIFICANCE

Technical Criteria	Problem	NER Plan Benefit
Scarcity	• Documented severe loss of bottomland hardwood forest (BLH) in the Mississippi Valley Loess Plains (MVLP) ecoregion • Severe degradation of aquatic habitat due to erosion of banklines and riparian habitat	• Project would reforest riparian buffers (native vegetation) once fully implemented. • Project would stabilize and restore ~28 miles/~187 acres of in-stream habitat within the MVLP ecoregion.
Representativeness	• Streams in DeSoto County are representative of MVLP streams and are continuing to degrade.	• Implementation of the project would restore many of the streams in DeSoto County to a stable and representative condition of the MVLP.
Status and Trends	• Streams in the MVLP are continuing to degrade.	• This project would arrest stream bed degradation and allow for the improvement of foraging, cover, and reproductive habitats in the area.
Connectivity	• Habitat fragmentation in the MVLP region has impacted the potential for movement and dispersal of species. • Fish passage is highly impacted in all streams included in the NER plan.	• Project would reconnect ~90 stream miles in DeSoto County • Project would provide riparian corridors that could connect streams to larger forested blocks and wetlands • Reconnect isolated stands of habitat to allow movement and dispersal of species throughout the project area • Design of structures will allow for the improvement of fish passage in the streams.

TECHNICAL SIGNIFICANCE (CONT.)

Technical Criteria	Problem	NER Plan Benefit
Limiting Habitat	• Limited/non-existent primary productivity in many stream reaches • Lack of structure and organic materials limit colonization by macroinvertebrates. • Limited BLH/riparian	• Stream stabilization would promote re-colonization of hydrophytic and riparian vegetation contributing to healthy and diverse ecotones. • Grade control and bank stabilization structures along with riparian habitats will provide structure and restore function for/with macroinvertebrates. • Reforestation provides foraging habitat, as well as introducing important coarse woody debris and organic materials into the streams.
Biodiversity	• Aquatic species endemic to the area are threatened by systemic degradation of streams. • Suitable habitats of Federally threatened species are scarce within the project area. • Bottomland hardwood loss within the Mississippi Flyway	• Endemic and/or species in need of conservation, include the Yazoo darter and Yazoo shiner, Southern red-bellied dace, and Piebald madtom (currently petitioned for listing under the ESA). • Northern long-eared bat (NLEB) would benefit from reforestation (roosting). • NLEB and wood stork would benefit from grade control and bank stabilization techniques: aquatic insect habitat and pooling habitat. • Reforestation of acreage within the Mississippi Flyway is beneficial to neo-tropical migratory birds and will promote forage and resting habitat.

PATH FORWARD

Exemption Request: An exemption request will be submitted for time and cost due to reformulation of FRM plan.

H&H: Work with economics to provide hydraulic runs for Life Sim analysis, draft report and appendices

Economics: Run optimized ER plans through CEICA, Evaluate Regional Economic Development utilizing ECAM and RECONS, Evaluate Other Social Effects utilizing Life Sim, optimize nonstructural aggregation.

Environmental: Public Meeting, Upload Revised Draft report to federal register, IAT Meeting, Address Public Comments

Cultural: Section 106 Consultation Meetings

Planning: Coordinate Draft Feasibility Report/SEA Public Release, Coordinate Concurrent Reviews

Civil: Work with Cost Engineering to and H&H to Optimize Levee

Cost: Detailed costs for nonstructural, Cost Risk Analysis based on PFMA risk reduction strategies

SCHEDULE

Milestone	Date
Feasibility Cost Sharing Agreement Signed	21 SEP 2018 (A)
Alternatives Milestone	18 JAN 2019 (A)
Notice of Intent	09 AUG 2019 (A)
Tentatively Selected Plan Milestone	09 MAR 2022 (S)
Draft Report Released – Start of Public/Concurrent Review	06 MAY 2022*
Agency Decision Milestone	18 JUL 2022*
District Engineer's Transmittal of Final Report Package	02 SEP 2022*
State and Agency Review	05 OCT 2022*
Chief of Engineer's Report Signed	16 DEC 2022*

Requests for IAT

USFWS – Update CAR, ESA Coordination

USEPA – General NEPA consideration, WQ, HTRW

MDEQ – WQC, HTRW, 303(d) list/TMDLs, ‘concurrence’ without permit request

NRCS – Prime and Unique Farmlands, WRP easements

MDFWP – Recommendations for planting schemes for riparian reforestation

General NEPA Compliance

General comments, questions, and concerns

QUESTIONS

Section 2. Updated Coordination with U.S. Fish and Wildlife Service (USFWS)

This section contains information that has been coordinated with or by the USFWS since the release of the initial draft Integrated Feasibility Report and Environmental Impact Statement (IFR-EIS) in May 2021. The draft Coordination Act Report (CAR) that was provided in July 2021 by the USFWS is included; however, this document does not apply to the Tentatively Selected Plan that is proposed in this revised draft. Coordination is on-going with the USFWS (included in this section). An updated letter of support for the revised TSP has been received and is included in this section. Finally, pursuant to the Endangered Species Act of 1973, the USACE has updated the Threatened and Endangered Species List (included in this section). Pursuant to Section 7 of the Endangered Species Act, as amended, the USACE has determined that the proposed project features may affect but are not likely to adversely affect the northern long-eared bat. The USACE requested concurrence with this determination on 28 April 2022 (included in this section).

Fish and Wildlife Coordination Act Report

Memphis Metropolitan Stormwater – North DeSoto County Flood Control Project

Prepared by: Kelly Morris

U.S. Fish and Wildlife Service

Interior Region 4 – Mississippi Basin

Mississippi Ecological Services Field Office

Jackson, Mississippi

July 2021

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mississippi Ecological Services Field Office
6578 Dogwood View Parkway, Suite A
Jackson, Mississippi 39213
Phone: (601)965-4900 Fax: (601)965-4340

July 30, 2021

Colonel Zachary L. Miller
Memphis District Commander
U.S. Army Corps of Engineers
167 North Main Street
Memphis, Tennessee 38103-1894

Dear Colonel Miller:

Enclosed is our draft Fish and Wildlife Coordination Act (FWCA) report for the Memphis Metropolitan Stormwater – North DeSoto County Flood Control Project, located in DeSoto County, Mississippi. The project is designed to reduce the level of damages associated with flooding within the Horn Lake and Coldwater River Basins, particularly within the city limits of Horn Lake, Southaven, Olive Branch and Hernando. Our report concludes that construction of the proposed project will provide moderate additional flood control benefits, however, we believe there will be some adverse impacts to fish and wildlife resources. If the project is constructed, our recommendations should be incorporated to reduce some of the adverse impacts to natural resources. In accordance with provisions of the FWCA, this report should be attached to and made an integral part of your final Detailed Project Report.

Thank you for the opportunity to comment on this project.

Sincerely,

for Stephen M. Ricks
Field Supervisor
Mississippi Field Office

1 EXECUTIVE SUMMARY

This Fish and Wildlife Coordination Act (FWCA) Report documents an analysis of the potential impacts to fish and wildlife resources of the proposed Memphis Metropolitan Stormwater – North DeSoto County Flood Control Project. The purpose of the proposed project is to reduce the flooding risks to the public and commercial, residential, and critical infrastructure within the Horn Lake and Coldwater River Basins, particularly within the city limits of Horn Lake, Southaven, Olive Branch and Hernando in DeSoto County, Mississippi. The Memphis Metropolitan Stormwater – North DeSoto County Feasibility Study with Integrated Environmental Impact Statement was conducted in response to the United States House of Representatives Committee on Transportation and Infrastructure resolution on March 7, 1996, regarding the Memphis Metro Area.

The draft Feasibility Study and Integrated Environmental Impact Statement provides an overview of the Tentatively Selected Plan and associated alternatives that were developed to reduce flood damages to businesses, residents, and infrastructure in DeSoto County. In addition, measures and alternatives were evaluated based on their ability to reduce risks to human life from flooding and rainfall events, and risks to critical infrastructure. Alternative plans were developed for Flood Risk Management and Ecosystem Restoration individually. In developing the alternatives for the Flood Risk Management Plan, the project development team assembled eight nonstructural, eight structural, and two combined nonstructural/structural alternatives. The 18 alternatives were further evaluated based on planning objectives, constraints, as well as the opportunities and problems to develop the final array of alternatives. The final array of Flood Risk Management Alternatives are as follows:

No Action Alternative

Plan 4A - Nonstructural Alternative Plan

Plan 5A - Extended Channel Enlargement

Plan 5B – Plan 5A with 4A

Plan 6A – Plan 5A with Lateral D Detention Basin

Plan 6B – Plan 5B with 6A

Plan 7A – Plan 6B with Rocky Creek and Cow Pen Creek Detention Basins

To develop the Ecosystem Restoration Alternatives, the U.S. Army Corps of Engineers evaluated 11 streams for restoration using five Ecosystem Restoration Measures. These streams include: Horn Lake Creek, Nonconnah Creek, Camp Creek, Lick Creek, Nolehoe Creek, Hurricane Creek, Cane Creek, Mussacuna Creek, Johnson Creek, Red Banks, and Short Fork. The final array of Ecosystem Restoration Alternatives is as follows:

No Action Alternative

Alternative 1 – System of Grade Control Structures

Alternative 4 – Alternative 1 with Associated Riparian Plantings

Alternative 5 – Alternative 1 with Restoration of 25 Percent of Reforestable Riparian Acreage

The U.S. Army Corps of Engineers evaluated the Flood Risk Management and Ecosystem Restoration Alternatives and developed a Tentatively Selected Plan that includes Flood Risk Management Plan 7A and Ecosystem Restoration Alternative 5. Measures include a channel enlargement along Horn Lake Creek, three detention basins, grade control and riparian restoration on 11 streams and nonstructural aggregation in the Horn Lake Creek and Upper Coldwater Basins (Corps 2021).

The long-term impact of the project to fish and wildlife resources is adverse, although existing resources are limited due to ongoing channel and water quality degradation. However, if Service recommendations are incorporated into the project plans, future adverse impacts to wildlife resources should be limited and existing resources improved. We recommend the following:

1. Preserve existing vegetative buffers along the top bank of Horn Lake Creek.
2. Restore the Horn Lake Creek floodplain by increasing the riparian zone along either side of the creek channel wherever possible. Restoration should be vegetative and hydrological and native plant species should be incorporated to the greatest extent possible.
3. Place restrictive easements or covenants on all preserved and restored riparian areas.
4. Adopt and enforce more restrictive floodplain regulations.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

2 Introduction

The U.S. Army Corps of Engineers (Corps) issued a draft Feasibility Study (FS) with integrated Environmental Impact Statement (EIS) documenting the analysis of proposed actions related to the feasibility of flood risk reduction and ecosystem restoration alternatives for the Memphis Metropolitan Stormwater – North DeSoto County Flood Control Project, located in DeSoto County, Mississippi. The purpose of the proposed project is to reduce the level of damages associated with flooding within the Horn Lake and Coldwater River Basins, particularly within the city limits of Horn Lake, Southaven, Olive Branch and Hernando in DeSoto County. This Fish and Wildlife Coordination Act (FWCA) Report provides project planning input and recommendations in order to reduce potential impacts to fish and wildlife resources from the Tentatively Selected Plan (TSP) outlined in the draft FS and EIS, Flood Risk Management Plan 7A and Ecosystem Restoration Alternative 5.

2.1 Project Purpose, Scope and Authority

The purpose of the proposed project is to reduce flooding risks to the public and commercial, residential, and critical infrastructures within the Horn Lake and Coldwater River Basins, located within the boundaries of DeSoto County, Mississippi. Items contained in the study scope were determined based on the Study Authority, and specifically include the need for improvements for flood control, environmental restoration, water quality, and related purposes associated with storm water runoff and management (Corps 2021).

This study was conducted in response to the United States House of Representatives Committee on Transportation and Infrastructure resolution on March 7, 1996, regarding the Memphis Metro Area, as follows:

> *The Secretary of the Army reviewed the report of the Chief of Engineers on the Wolf River and Tributaries, Tennessee and Mississippi, published as House Document Numbered 76, Eighty-fifth Congress, and other pertinent reports, to determine whether any modifications of the recommendations contained therein are advisable at this time, with particular reference to the need for improvements for flood control, environmental restoration, water quality, and related purposes associated with storm water runoff and management in the metropolitan Memphis, Tennessee area and tributary basins including Shelby, Tipton, and Fayette Counties, Tennessee, and DeSoto and Marshall Counties, Mississippi. This area includes the Hatchie River, Loosahatchie River, Wolf River, Nonconnah Creek, Horn Lake Creek, and Coldwater River Basins. The review shall evaluate the effectiveness of existing Federal and non-Federal improvements and determine the need for additional improvements to prevent flooding from storm water, to restore environmental resources, and to improve the quality of water entering the Mississippi River and its tributaries.*

2.2 Relevant Prior Studies, Reports, and Previous Consultation

1981- Memphis Metropolitan Area Urban Study

1986- Horn Lake Creek and Tributaries, Phase I General Design Memorandum (GDM)

1988- The Horn Lake Creek and Tributaries Including Cow Pen Creek, General Design Memorandum Re-evaluation

1999- The Memphis Metro Area, Tennessee, and Mississippi Reconnaissance Report

2005- Horn Lake Creek and Tributaries Tennessee and Mississippi, General Reevaluation Report

2018- Big Sunflower River Watershed (Quiver River), Mississippi Final Feasibility Report with Integrated Environmental Assessment

2015- Johns Creek Continuing Authorization Project (CAP 205, flood control project)

2.3 Project Objectives

1. Reduce flood damages to residential and commercial infrastructure in DeSoto County.
2. Reduce risks to critical infrastructure.
3. Reduce risk to human life from flooding and rainfall events throughout DeSoto County.
4. Restore and protect aquatic and riparian ecosystems by decreasing channel slopes and stabilizing bank lines to improve transport of stream flows and sediment over a 50-year period of analysis.
5. Improve species richness through channel stabilization and habitat restoration.
6. Improve water quality to support aquatic resources.

3 Project Study Area

The study area is located in the Horn Lake Creek-Nonconnah and Coldwater River Basins in DeSoto County, Mississippi (Figure 1). This includes Horn Lake Creek and its tributaries, Nonconnah River, Camp Creek and its tributaries, Hurricane Creek, Johnson Creek, and numerous tributaries of the Coldwater River. Predominant cities within the study area include Horn Lake, Southaven, Olive Branch, Walls, and Hernando.

The study area lies within the Mississippi Valley Loess Plains (MVLP) Ecoregion, where the topography of the area is characterized by irregular plains; some gently rolling hills; wide, flat floodplains; and bluffs near the Mississippi River. Thick loess, fine sediment that accumulated from wind-blown dust, is one of the most distinguishing characteristics of this ecoregion. Soils in the MVLP are deep, fine-textured, and easily erodible. Natural vegetation in the eastern portion of the MVLP is upland forests dominated by oak, hickory, and pine.

Historically, the Horn Lake Creek-Nonconnah and Coldwater River Basins contained large tracts of wooded wetlands in the floodplain, where out-of-bank flooding was a regular occurrence. The floodplain remained mostly unaltered until the 1970s when expansion of major roadways brought development to the area (Corps 1981). Currently, the primary landcover is agricultural and forested lands.

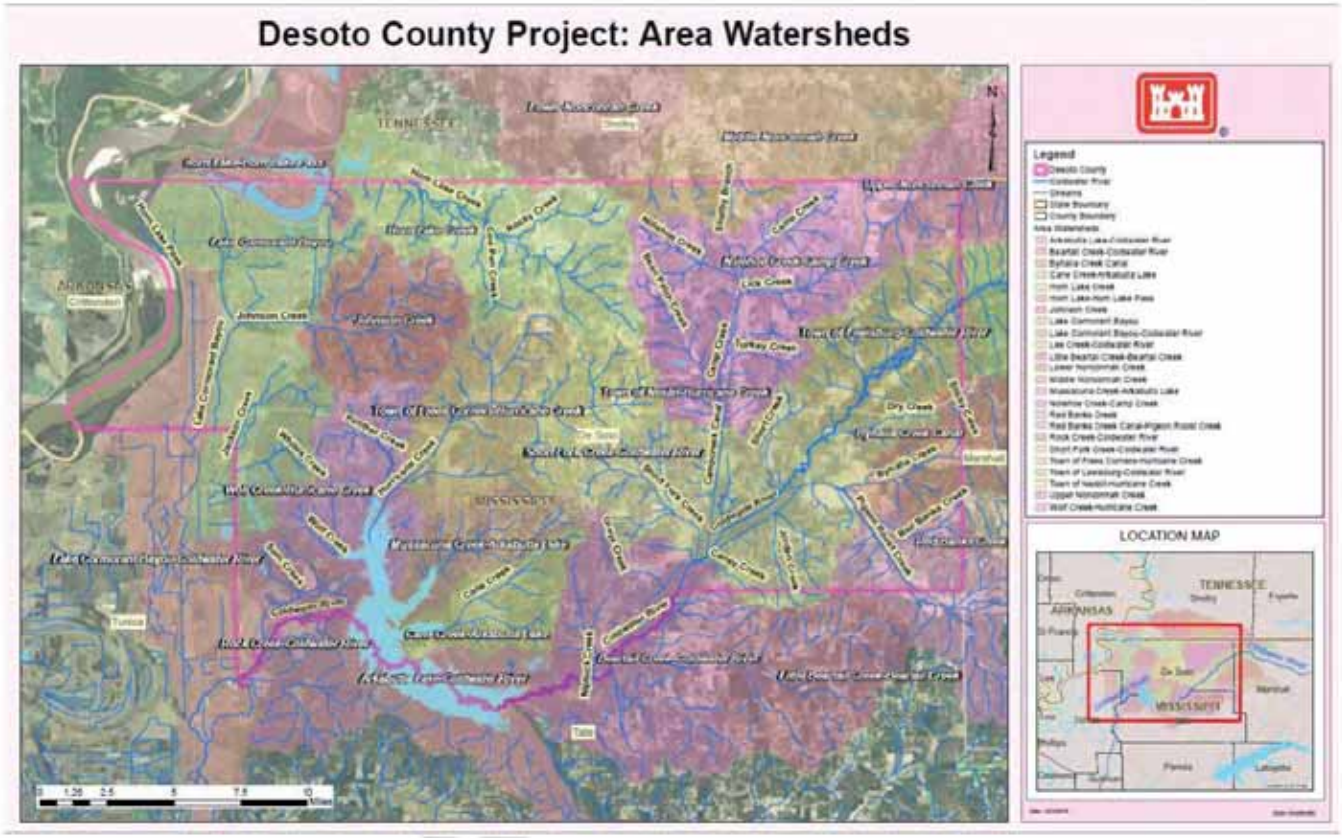


Figure 1. Memphis Metropolitan Stormwater- North DeSoto Flood Control Project Study Area, DeSoto County, Mississippi.

4 Proposed Action

The U.S. Army Corps of Engineers Project Delivery Team evaluated Flood Risk Management and Ecosystem Restoration Alternatives and developed a TSP that includes Flood Risk Management Plan 7A and Ecosystem Restoration Alternative 5. Measures include a channel enlargement along Horn Lake Creek, three detention basins, grade control and riparian restoration on 11 streams and nonstructural aggregation in the Horn Lake Creek and Upper Coldwater Basins (Corps 2021).

4.1 Flood Risk Management Plan 7A

The Flood Risk Management portion (Plan 7A) of the TSP includes the following structural features:

- Horn Lake Creek Extended Channel Enlargement- the Horn Lake Creek channel enlargement will increase the bottom width to 40 feet for approximately 4,300 linear feet from Mile 18.6 to Mile 19.41, downstream of Goodman Road in Horn Lake, Mississippi
- Cow Pen Creek Detention South- A 12-acre inline detention basin located on Cow Pen Creek south of Nail Road in Horn Lake, Mississippi
- Cow Pen Creek Detention North- An 8-acre offline detention basin located adjacent to Cow Pen Creek north of Nail Road in Horn Lake, Mississippi
- Lateral D Detention-A 22-acre inline detention basin located on Lateral D south of Church Road in Southaven, Mississippi
- Rocky Creek Detention-A 9-acre inline detention basin located on Rocky Creek east of Swinnea Road in Southaven, Mississippi

The proposed channel enlargement along Horn Lake Creek will be constructed downstream of Goodman Road in Horn Lake, Mississippi. The channel bottom will be enlarged from stream mile 18.6 to mile 19.41 from the current width of 15-25 feet to 40 feet. The creek banks will be constructed at a slope of approximately 3-foot horizontal to 1-foot vertical (3H:1V). Channel enlargement construction requires approximately 10 acres of tree clearing for access, bank stabilization, and excavation. Approximately 95,000 cubic yards of excavation is required, all of which will be disposed of off-site. Approximately 22,750 tons of riprap will be placed over approximately 6,000 tons of filter material. Finally, the upper banks will be protected with 18,780 square yards of turf reinforcing mat.

The Lateral D inline detention basin will encompass a footprint of 22 acres (16 acre pool bottom), requiring approximately 22 acres of bottomland hardwood (BLH) tree clearing. The basin will be excavated to a depth of 10 feet with 3H:1V side slopes. A 500-linear foot outlet embankment will be constructed to include a 48-inch reinforced concrete pipe (RCP) outlet with a 100-linear foot overflow spillway. The spillway will be armored with approximately 2,000 tons of riprap over 500 tons of filter material. Approximately 350,000 cubic yards will be excavated and disposed of offsite, creating a maximum storage of 177-acre-feet. Of the area that will be cleared, the current design proposes replanting approximately 10 percent (0.9 acres) with native vegetation.

The Rocky Creek inline detention basin will total approximately 9 acres (6 acre pool bottom) and require an estimated 7.5 acres of tree clearing, and will be excavated to a depth of 10 feet. Slopes will be constructed at approximately 3H:1V for stability. A downstream embankment of 500 linear feet will be constructed, including a 48-inch RCP outlet and 100- linear foot overflow spillway. The spillway will be armored with 6,000 tons of riprap placed over 1,500 tons of filter material on the downstream side. Of the area that will be cleared, the current design proposes replanting approximately 10 percent (0.9 acres) with native vegetation.

The Cow Pen Creek offline detention basin will encompass approximately 20 acres in two pools (12-acre upstream and 8-acre downstream) and requiring an estimated 8.5 acres of tree clearing (upstream pool only) and excavated to a depth of 10 feet. The upper pool will have bottom area of 10 acres, and slopes will be constructed at 3H:1V. A 500-linear feet embankment will be constructed on the downstream end of the detention basin, including a 48-inch RCP outlet and 100-linear feet overflow spillway. The spillway will be armored with 2,000 tons of riprap over 500 tons of filter material. Approximately 175,000 cubic yards will be excavated and disposed of offsite, creating a maximum storage of 108-acre-feet. Of the area that will be cleared, the current design proposes replanting approximately 10 percent (1.2 acres) with native vegetation.

The downstream Cow Pen offline detention basin will total approximately 8 acres (6 acre bottom). Slopes will be constructed up to the existing grade at 3H:1V. A 500-linear foot embankment will be constructed and includes a 48-inch RCP outlet and 100-linear foot overflow spillway. The spillway will be armored with 2,000 tons of riprap over 680 tons of filter material. An inlet sill will require an additional 800 tons of riprap. The proposed maximum storage of 68 acre-feet requires approximately 115,000 cubic yards of excavation that will be disposed of off-site. Of the area that will be cleared, the current design proposes replanting approximately 10 percent (1.2 acres) with native vegetation.

4.2 Ecosystem Restoration Alternative 5

The Ecosystem Restoration portion (Alternative 5) of the TSP includes the following features:

- Improvements to 11 streams within the project area include grade control, bank armoring, riser pipes, and riparian buffers (nonstructural)
    a. Grade Control Structures (Table 1) - Up to 88 grade control structures are proposed to stabilize the streambed and reduce future head cutting. Structures would typically be 3.5 feet high off the channel bottom. Larger 600 pound stone would face upstream, with smaller 200 pound stone protecting the downstream side. Side slope armoring and keys would reduce the risk of flanking or undercutting the structure.
    b. Riparian Buffers (Table 1) - Land adjacent to the waterway would be converted to forest to provide a buffer from development and agriculture. There are no structural improvements associated with this measure; however, this could be paired with other measures to mitigate anticipated impacts. For instance, a parcel prone to flooding may be converted to riparian buffer, reducing the risk of damage to private property.

Table 1. Proposed grade control structures, riparian reforestation acreage and annual average habitat units for the Memphis Metropolitan Stormwater – North DeSoto County Flood Control Project, DeSoto County, Mississippi.

Stream	Number of Grade Control Structures	Riparian Reforestation (acres)	Annual Average Habitat Units
Camp	7	98	98
Cane	9	66	54
Hurricane	5	160	140
Lick	2	36	24
Nonconnah	6	107	75
Mussacuna	2	57	40
Horn Lake	14	64	101
Nolehoe	11	32	54
Johnson	11	122	113
Red Banks	5	48	46
Short Fork	9	106	84

5 Fish and Wildlife Concerns and Planning Objectives

The primary concern of the Service for this study is the identification of fish and wildlife habitats with preservation and restoration opportunities for the impacted study area. Specifically, the Service has identified the following needs of the study area:

1. Preservation of vegetated wetlands and associated fish and wildlife resources found within the existing floodplain.
2. Restoration of the hydrology and vegetation found within the degraded portions of the floodplain.
3. Establishment and enforcement of stricter land use zoning within the floodplain.

5.1 Fish and Wildlife Resources

Natural floodplain forests within the Mississippi alluvial valley provide year-round habitats for many fish and wildlife species due to topographic diversity and complex vegetational

stratification. When flooded, bottomland hardwood forests are capable of seasonally supporting an extensive and diverse faunal group. Riparian vegetation functionally mediates stream temperature, stabilizes streambanks, and provides a biofiltering buffer zone between potentially degrading upland runoff and the adjacent waterbody. However, construction activities can increase erosion and sedimentation from denuded areas.

5.1.1 Habitats

The predominant habitat type in the study area is riparian, although there are small blocks of bottomland hardwood forests interspersed among agricultural land. Within the creek channel and the associated floodplain, riparian habitat consists of an overstory of mid-age elm-ash-cottonwood trees and a midstory of young willow trees. The understory includes areas of grasses, swamp privet, smartweed, and vines.

Many riparian areas within the study area are extremely degraded and have lost their natural hydrologic regime. Most natural meander patterns have been removed, and pool and riffle complexes have been altered. Currently, pools generally occur above bridge structures while riffles and runs occur below the bridges, thus severely impacting aquatic organism passage and biodiversity. Table 2 identifies the Mississippi Department of Environmental Quality (MDEQ) water quality status for streams in the study area (MDEQ 2004). The most prevalent water quality concerns as noted from the MDEQ reports are excessive nutrients, organic enrichment/low dissolved oxygen, and sedimentation. In addition, Red Banks Creek is listed as biologically impaired due to toxicity.

Within the study area bottomland hardwood forests occur mainly within the riparian corridor of streams. Bottomland hardwood forests experience periodic inundation from rivers during high rainfall events. The water table in this system is elevated during the winter and spring seasons and soils remain moist through much of the growing season. These seasonal, periodic inundations provide suitable habitat for a multitude of fish and wildlife species throughout the year. These forest lands are also critical for various species utilizing the Mississippi River Flyway, as well as providing the required foraging, rest, and reproduction for species within the area.

Approximately 1,781 acres of bottomland hardwood forests and other forested wetlands exist within 328 feet of the streams included in the study (Table 2; Corps 2021). Urbanization and agricultural production in the project area have contributed significantly to bottomland hardwood forest loss, in turn leading to the systematic degradation of streams. Incision of streams in the project area has caused a lowering of the water table, resulting in bottomland hardwood wetlands becoming drier over time.

Additionally, upland forested habitats within DeSoto County have been heavily impacted due to the ease of clearing for agricultural, residential, and commercial uses. The upland forested habitats within DeSoto County have been heavily impacted with approximately 868 acres of upland forested lands remaining within 328 feet of the streams included in the study (Corps 2021).

Table 2. Bottomland hardwood acreage estimates and Mississippi Department of Environmental Quality water quality status for streams in the study area, DeSoto County, Mississippi.

Stream	Bottomland Hardwood Forest-Wet acreage*	Bottomland Hardwood Forest acreage*	Water quality status (MDEQ data)
Horn Lake Creek	349	142	Biological Impairment: Organic Enrichment/Low DO and Nutrients Sedimentation
Nonconnah headwaters	213	171	N/A
Camp Creek	308	75	Biological Impairment: Organic Enrichment/Low DO and Nutrients Sedimentation
Nolehoe Creek	19	29	N/A
Licks Creek	111	77	N/A
Johnson Creek	189	129	Biological Impairment: Organic Enrichment/Low DO and Nutrients Sedimentation
Hurricane Creek	233	77	Biological Impairment: Organic Enrichment/Low DO and Nutrients
Cane Creek	32	35	Biological Impairment: Organic Enrichment/Low DO and Nutrients Sedimentation Pesticides
Mussacuna Creek	91	50	Biological Impairment: Organic Enrichment/Low DO and Nutrients Sedimentation
Red Banks Creek	165	7	Biologically Impaired; No TMDL
Short Fork Creek	71	76	Biological Impairment:Sedimentation
Cow Pen Creek			N/A
Rocky Creek			N/A
Total	1781	868	

*Acreage estimates are based on a 328 ft. buffer on both sides of the stream from National Land Cover Classification Data.

5.1.2 Wildlife Resources

Wildlife habitat in the project area is minimal. Fragmentation of wooded upland and riparian zones has reduced the quantity and quality of habitats that are suitable for many forest dwelling

wildlife species such as white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyan lotor*), gray fox (*Urocyon cinereoargenteus*), river otter (*Lutra canadensis*), and many species of neotropical migrant songbirds (Service 1981). However, there is evidence of some urban dwelling wildlife species including gray squirrels (*Sciurus carolinensis*), eastern cottontail rabbits (*Sylvilagus floridanus*), and various species of rodents. Bird species such as the mocking bird (*Mimus polyglottos*), northern cardinal (*Cardinalis cardinalis*), dickcissel (*Spiza americana*), and house finch (*Carpodacus mexicanus*) are likely inhabitants of the area. Additionally, priority avian species including warblers, herons, waterfowl, raptors, utilize the Mississippi Flyway as a migration corridor, winter resting area and for forage and reproductive purposes.

5.1.3 Aquatic Resources

Many sections of the creeks and tributaries in the study area have been substantially altered by pollution, channel alterations, floodplain encroachment, and groundwater withdrawal. Stream channel paving, channelization, and instream and shoreline clearing and snagging have removed or degraded vital aquatic habitats. Sedimentation has increased over time due to high stream flows resulting in erosion and bank failures during flood events, which are exacerbated by heavy agricultural practices, and commercial and residential development. As a result of habitat degradation, the aquatic community is composed of those species tolerant of low water quality. An abundance of sport or commercial fisheries is unlikely, although there is evidence of amphibian and reptile populations within the riparian areas and remaining vegetated floodplain.

Aquatic species endemic to the area, including the Yazoo shiner (*Notropis rafinesquei*) and piebald madtom (*Noturus gladiator*) are threatened by systemic habitat degradation in north Mississippi (Corps 2021). Fish passage in the study streams is limited by barriers including perched culverts or bridge stabilization, stream blockages, and sedimentation.

5.1.4 Threatened and Endangered Species

Below is a list of the federally listed species within the project area and their designations:

Northern long-eared bat (*Myotis septentrionalis*; NLEB) - Threatened
Wood stork (*Mycteria americana*) - Threatened

The NLEB is widespread in the eastern United States, although it is patchy in distribution and rarely found in large numbers (Barbour and Davis 1969). Due to declining population numbers, primarily caused by White Nose Syndrome (WNS), this species was federally listed under the ESA as threatened in May 2015. At roost sites in states where WNS has been detected, many populations of NLEB have declined by 99% (USFWS 2015). Although Mississippi has not been affected by WNS, the NLEB has a state rank of SH, indicating it is possibly extirpated in the state (MNHP 2018). Despite this designation, this species was recently detected in Wilkinson County in 2019 (K. Cross, personal communication). The NLEB has been documented in Tishomingo, Sharkey, and Wilkinson Counties, Mississippi (MNHP 2021).

The NLEB commonly inhabits caves and abandoned mines in the winter, which can vary substantially in size and shape. Winter roost sites, or hibernacula, typically have relatively constant cooler temperatures with little airflow and high humidity (Fitch and Shump 1979; Caceres and Pybus 1997; Brack 2007). In the summer, this species commonly roosts under the bark or inside cavities of live or dead trees.

Range-wide primary threats to this species include WNS, the destruction or modification of habitat (which includes modification of hibernacula, including mine or cave entrance closures or gating which could affect air flow and temperatures, disturbance at hibernacula, conversion of forests for agricultural, urban or mineral development purposes, and forest management including timber harvest), wind energy development, and contaminants.

A final 4(d) rule for the NLEB was published in 2016 exempting incidental take of otherwise legal actions related to tree clearing, except when tree removal occurs within a hibernacula site or when tree removal activities: 1) occur within a quarter-mile of a known hibernacula; or 2) cut or destroy known occupied maternity roost trees, or any other trees within 150 feet of that maternity roost tree during the pup-rearing season (June 1–July 31) (USFWS 2015). Currently, there are no known maternity roost trees in the state of Mississippi and one known hibernaculum located in Tishomingo County near Pickwick Lake.

Wood storks are large, long-legged wading birds, about 50 inches tall, with a wingspan of 60 – 65 inches. The plumage is white except for black primaries and secondaries, and a short black tail. The head and neck are largely unfeathered and dark gray in color. Two distinct populations of wood storks occur in the United States (USFWS 1996). One population breeds in Florida, Georgia, and South Carolina, and is federally protected (threatened). The other population breeds from Mexico to northern Argentina and is not federally protected. Wood storks from each of these populations occur seasonally in Mississippi during the non-breeding season (May – October) and are not distinguishable from one another. The major threat to this species is a reduction in food base (primarily small fish) due to habitat loss, modification, and fragmentation. Typical foraging sites include freshwater marshes, swales, ponds, hardwood and cypress swamps, narrow tidal creeks or shallow tidal pools, and artificial wetlands (such as stock ponds; shallow, seasonally flooded roadside or agricultural ditches; and impoundments).

Although the bald eagle was officially removed from the List of Endangered and Threatened Species as of August 8, 2007, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). Bald eagles nest in Mississippi from December through mid-May in mature trees (e.g., bald cypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water. Nest sites typically include at least one perch with a clear view of the water or area where the eagles usually forage. Bald eagles are vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding. Nesting bald eagles are known to occur within the project area.

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may

constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf.

5.1.5 Species of Concern

The piebald madtom is a small species of fish in the catfish family. It is considered an "at-risk" species by the U.S. Fish and Wildlife Service, and is petitioned for listing under the Endangered Species Act. This species is also state listed as endangered by the Mississippi Natural Heritage Program (MNHP 2018). The piebald madtom is endemic to the very sinuous section of the mainstem Coldwater River in the Yazoo River portion of their range. While this species has not been detected in the project area, there is still concern pertaining to their potential occurrence in several creeks within the project area, as these areas have not been surveyed for this species. These areas include Licks Creek, Camp Creek, and Red Banks Creek.

The main concern is that if grade control structures are placed into these creeks, there could be major sediment issues, and they could act as barriers to fish movement. Piebald madtoms need course woody debris and flow. These grade control structures may cause the creek(s) to become a series of pools rather than a riffle/run/pool complex. It is strongly encouraged that fish surveys be completed on Licks, Camp, and Red Banks Creek for presence/absence of piebald madtoms.

6 Biological Effects of the Proposed Project on Fish and Wildlife Resources

The TSP has the largest proposed construction footprint, most tree removal, and the most in-stream manipulation of all proposed Alternatives. As a result, the proposed plan would have the greatest impacts to fish and wildlife resources. However, these resources, without the project, would continue to be negatively impacted by urban encroachment within the floodplain. While initial impacts to resources would be detrimental, long term benefits of restoration and preservation of the floodplain will likely improve overall fish and wildlife habitats within the basin.

The TSP would impact 4,300 linear feet of Horn Lake Creek from Mile 18.6 to Mile 19.41, downstream of Goodman Road in Horn Lake, Mississippi. In addition, up to 88 GCS are proposed for 11 streams in the project area. In-stream construction projects present potential impacts related to habitat destruction including increased sedimentation, turbidity, exhaust runoff from roads, herbicide and pesticide load, and the introduction of other pollutants. The channel enlargement along Horn Lake Creek would also have a significant effect on flow velocities, where stream flow would be little to none during dry periods and extreme during storm events. These alterations in stream flow velocities will result in adverse impacts to fish and wildlife resources in the area. Additionally, stream temperatures would permanently increase due to reduction of shading and armoring of the channel. Subsequently, there would be a decrease in the water's dissolved oxygen. These factors may negatively impact habitat conditions by

detrimentally affecting respiration, feeding, and reproduction of amphibians, bats, birds, crayfishes, fishes, insects, turtles, and vegetation.

The Service has determined that loss of instream flora could have a long-term negative effect on fisheries, amphibians, wading birds, and migratory songbird populations by reducing the amount of shallowly flooded herbaceous vegetation. Although there would be times when shallow water areas exist in the channel, the quality of vegetation used by wildlife species in these areas would be reduced or eliminated. Also, spring flooding events with swiftly moving waters would disrupt opportunities for spawning or reproduction.

As a result of reduced flooding in the area, the project could result in further wetland disturbance and elimination caused by increased development in areas where the risk of flooding is decreased. Threats to wildlife are on-going and are directly related to development and associated pollution, agriculture, and human disturbance and modification of natural systems such as channelization, construction of levees and reservoirs, and other flood control projects. Therefore, in addition to the reforestation of riparian buffers and other stream restoration measures, efforts should be taken to place restrictive easements or covenants on all preserved and restored riparian areas, and more restrictive floodplain regulations should be adopted to limit development in these areas.

While the development of grade control structures can have a detrimental impact on aquatic resources and biological communities, grade control structures for this project will be developed with Engineering with Nature- Natural and Nature Based Features (EWN-NNBF). NNBF are a natural part of the grade control structures function and are designed to reintroduce the natural channel morphology (Corp 2021). A major concern with the construction of grade control structures is the development of barriers to natural fish migrations. However, grade control structures for this project are designed to facilitate fish passage with a 5-percent design slope. EWN-NNBF also reintroduce pool and riffle sequences, and provide new channel margins for the recruitment of woody species riparian corridors to re-establish providing stable terrestrial and aquatic margin habitat. Utilizing this design structure allows for both structural, ecological and biological enhancements. Given potential suitable habitat for the piebald madtom is present in the project area, the Service recommends incorporating features beneficial to this species in project design development.

While this species has not been detected in the project area, there is still concern pertaining to their potential occurrence in Licks Creek, Camp Creek, and Red Banks Creek, as these areas have not been surveyed for this species. The Service recommends surveys of these creeks be conducted, and if present, we recommend constructing grade control structures in these areas to facilitate suitable habitat conditions for this species. Specifically, the piebald madtom prefers patches with increasing flows and depths, but other variables such as substrate type (i.e. gravel) and cover type (i.e. woody debris and leaf packs) are also important to patch selection (Blanton Johansen et al. 2017). Blanton Johansen et al. found piebald madtoms were located in areas where mean flow was 0.30 m/s (range = 0.13 – 0.98). It is strongly encouraged that fish surveys be completed on Licks, Camp, and Red Banks Creek for presence/absence of piebald madtoms.

The Service has additional concerns with the proposed locations of the Lateral D and Rocky Creek detention basins. The proposed location of the Lateral D detention basin would clear approximately 22 acres of mature bottomland hardwood forest. Additionally, the proposed location for the Rocky Creek detention basin removes one of the few remaining riparian buffers along this creek. Urbanization and agricultural production in the project area have contributed significantly to bottomland hardwood forest loss and stream degradation, therefore, maintaining these habitats is vital for fish and wildlife resources and the proper function of biological communities in the area. The Service recommends relocating these detention basins to developed areas in order to preserve bottomland hardwood forest and riparian habitats.

Conservation and restoration of remaining habitat along with invasive species control is recognized as a priority conservation action by the Mississippi Department of Wildlife, Fisheries, and Parks. Beneficial management actions may include items such as protection of large diameter trees and snags, restoration of channel depth and flow, reintroduction of stream sinuosity and microtopography, and floodplain reconnection (MMNS 2015).

The Service has determined the proposed project will adversely impact fish and wildlife resources. However, the proposed restoration of riparian vegetation along the topbank creeks in combination with stream restoration and preservation measures proposed within the floodplain would increase overall fish and wildlife resources and improve water quality within the Horn Lake Creek-Nonconnah and Coldwater River Basins.

7 Summary and Recommendations

The Service has determined that construction of the Memphis Metropolitan Stormwater – North DeSoto County Flood Control Project would have adverse impacts to existing fish and wildlife resources. We believe that the selected alternative would be detrimental to any aquatic resources remaining in Horn Lake Creek within the project area. However, these resources, without the project, would continue to be impacted by urban encroachment within the floodplain. Restoration of riparian habitat along Horn Lake Creek and restoration/preservation of floodplain wetlands within Horn Lake Creek could improve overall fish and wildlife habitats within the basin.

The Service makes the following recommendations to minimize the adverse impacts to fish and wildlife resources:

1. Use an adaptive management approach to manage the sediment and habitat resources to ensure the project area will be viable for fish and wildlife in the future. Continue to coordinate with the Service in the future when making decisions regarding the adaptive management plan.
2. Pre-project and post-project sampling should take place in order to determine the effects on the fish community in areas where in-stream restoration (grade control structures) and channel enlargement is proposed. It is strongly encouraged that fish surveys be completed on Licks, Camp, and Red Banks Creek for presence/absence of piebald madtoms. All sampling data may assist in making decisions relative to the above-referenced adaptive management plan and future stream restoration projects.

3. Avoid impacts (disturbances) to nesting bald eagles.
4. Preserve, where possible, existing vegetative buffers along the top bank of Horn Lake Creek.
5. Provide riparian corridors that could connect streams to larger forested and wetland habitats.
6. Reconnect isolated forest stands to allow transportation corridors for wildlife species throughout the project area.
7. Design grade control structures that promote fish passage in the streams.
8. Deposit all spoil material in an upland area outside the floodplain.
9. Incorporate sediment control measures during construction including timely revegetation of disturbed areas using native plant species to the greatest extent possible.
10. Restore the Horn Lake Creek floodplain by increasing the riparian zone along either side of the creek channel wherever possible. Restoration should be vegetative and hydrological and native plant species should be incorporated to the greatest extent possible.
11. Place restrictive easements or covenants on all preserved and restored riparian areas.
12. Adopt and enforce more restrictive floodplain regulations.

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From:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
To:	Morris, Kelly M; Seagroves, Lauren A
Cc:	Lambert, Edward P CIV USARMY CEMVN (USA); Williams, Eric M CIV USARMY CEMVN (USA)
Subject:	Updated Coordination for the North DeSoto County Feasibility Study
Date:	Wednesday, April 20, 2022 1:47:00 PM

Hello Kelly and Lauren,

As previously discussed, the USACE is preparing to release a revised draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater-North DeSoto, DeSoto County, Mississippi Feasibility Study.

Per our coordination and recent interagency team meeting on 3 March 2022, the USACE requested an update to the draft CAR that the USFWS provided in July 2021 with the initial release of the subject study. However, as the reduced footprint and minimal impacts do not rise to the level of adverse impacts, the USFWS and USACE agreed that the USFWS is not required to provide an updated draft CAR. During the Public and Agency comment period (~6 May – 20 June 2022), the USFWS would provide a letter in support of the project describing the changes to the project (since the initial draft was released), and that there are no concerns regarding fish and wildlife resources.

Updated compliance language regarding the FWCA in the (currently unreleased) draft reads:

> "The Fish and Wildlife Coordination Act (FWCA) provides the basic authority for USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It requires Federal agencies that construct, license, or permit water resource development projects to consult with the USFWS (and the National Marine Fisheries Service in some instances) and state fish and wildlife agencies regarding anticipated impacts on fish and wildlife resources and measures to mitigate these impacts."
>
> It was determined on 19 April 2022 that, due to the minimal and temporary nature of the impacts, that this proposed action does not rise to the level of a formal Coordination Act Report. The USFWS is in support of the proposed action and the requirements of the Fish and Wildlife Coordination Act of 1943 have been met. Coordination with the USFWS, as well as a letter of support is included in Appendix ** of this report.

In addition, it was determined that the impacts have been reduced to a level that a no effect determination has been made for the northern long-eared bat. Previously our coordination included the wood stork; however, a new species list was requested on 19 April 2022, and the wood stork was no longer listed. Therefore the wood stork has been removed from the report language. A no effect determination would have been appropriate for this species, as well, as no impacts to wood stork habitat are anticipated.

Updated compliance language regarding the ESA in the (currently unreleased) draft reads:

> "The purpose of the Endangered Species Act of 1973 (ESA) is to protect and recover imperiled species of fish, wildlife, and plants and the ecosystems upon which they depend. It

is administered by the USFWS. The USFWS has primary responsibility for terrestrial and freshwater organisms.
Under the ESA, species may be listed as either endangered or threatened. A listing of endangered means a species is in danger of extinction throughout all or a significant portion of its range. A listing of threatened means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments.

An official (updated) species list was requested on 19 April 2022 from the USFWS Information Planning and Consultation website. In response, the threatened NLEB (Myotis septentrionalis) was listed as potentially occurring within the proposed project area.

Pursuant to Section 7 of the Endangered Species Act, as amended, the USACE has determined that implementation of the proposed action is expected to have no effect on the northern long-eared bat, as the project would not directly impact suitable habitat. A no effect determination was agreed upon in an interagency team meeting on 3 March 2022. Habitat for the northern long-eared bat is expected to improve with the implementation of the NER Plan. No plants were identified as being threatened or endangered in the project area.

If you have any questions or comments, please let us know. The last date that I can make any changes to the report before draft release is 28 April 2022.

Thanks for your help with this study,
Andrea

Thank you,
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mississippi Ecological Services Field Office
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http://www.fws.gov/mississippiES/endsp.html

In Reply Refer To: April 19, 2022
Project Code: 2022-0033646
Project Name: North DeSoto County Feasibility Study_Flood Risk Management_Updated

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

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

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

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

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

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/birds/policies-and-regulations.php.

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/birds/bird-enthusiasts/threats-to-birds.php.

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/birds/policies-and-regulations/executive-orders/e0-13186.php.

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
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

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

This species list is provided by:

Mississippi Ecological Services Field Office
6578 Dogwood View Parkway, Suite A
Jackson, MS 39213-7856
(601) 965-4900

Project Summary

Project Code: 2022-0033646
Event Code: None
Project Name: North DeSoto County Feasibility Study_Flood Risk Management_Updated
Project Type: Flooding
Project Description: Pursuant to the National Environmental Policy Act (NEPA), the U.S. Army Corps of Engineers (USACE), Memphis District, as the lead agency intends to prepare a Draft Integrated Feasibility Report and Environmental Impact Statement (DIFR-EIS) for the Memphis Metropolitan Stormwater Management Project: North DeSoto County, Mississippi Feasibility Study. The DIFR-EIS seeks to evaluate the effectiveness of existing Federal and non-Federal improvements; to determine the need for additional improvements to reduce the risk of flooding from storm water, restore environmental resources, and improve the quality of water entering the Mississippi River and its tributaries; and to determine if such improvements are technically feasible, environmentally acceptable, and economically justified.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.94589718784735,-89.95980330334129,14z

Counties: DeSoto County, Mississippi

Endangered Species Act Species

There is a total of 2 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	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.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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

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

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

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

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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

NAME	BREEDING SEASON
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

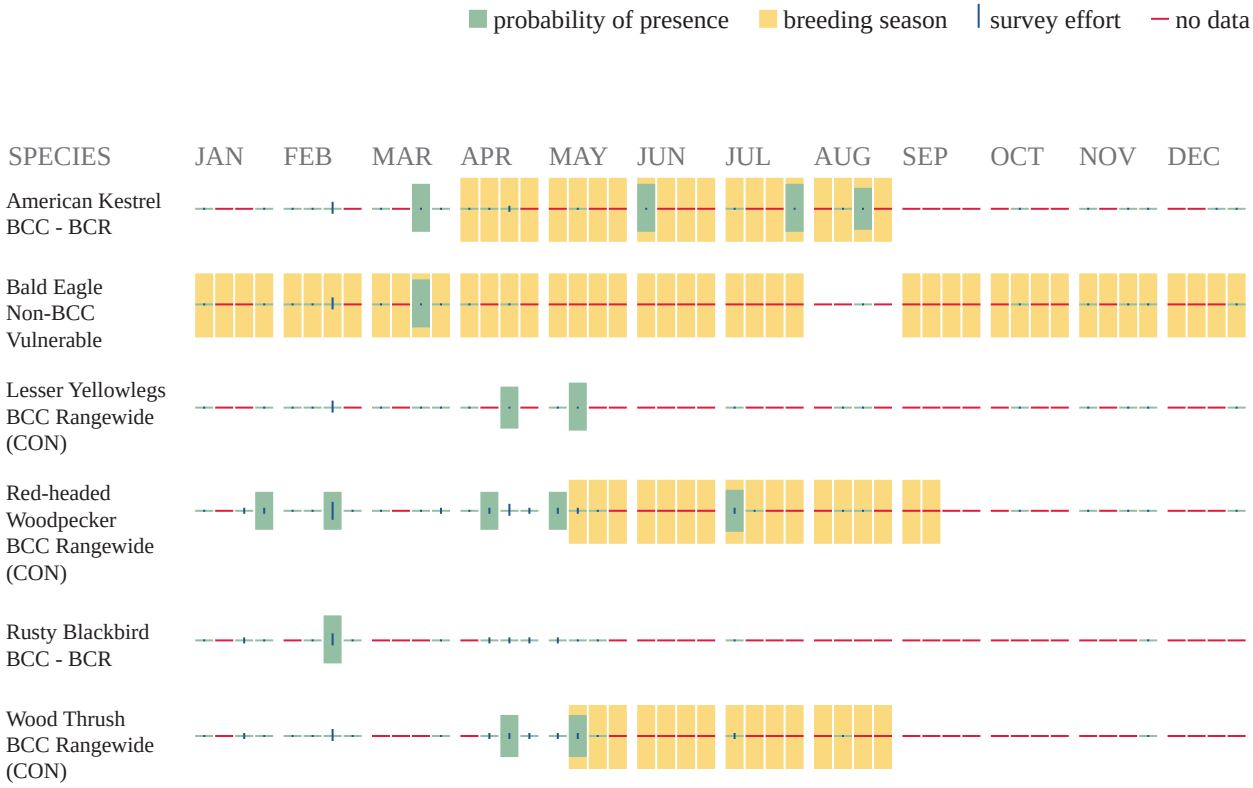
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

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

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

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

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

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

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

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

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

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and

how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Wetlands

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

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

Due to your project's size, the list below may be incomplete, or the acreages reported may be inaccurate. For a full list, please contact the local U.S. Fish and Wildlife office or visit https://www.fws.gov/wetlands/data/mapper.HTML

LAKE

- L1UBHh

FRESHWATER EMERGENT WETLAND

- PEM1A
- PEM1Ad
- PEM1Ah
- PEM1Ax

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1A
- PFO1Ad
- PFO1Ah
- PFO1Ax
- PFO1C
- PSS1A
- PSS1Ax
- PSS1C
- PSS1Cb

FRESHWATER POND

- PUBF
- PUBH
- PUBHh
- PUBHx
- PUBKx
- PUSAh

RIVERINE

- R2UBH
- R2UBHx
- R4SBC
- R4SBCx
- R5UBH

IPaC User Contact Information

Agency: Army Corps of Engineers
Name: Andrea Carpenter
Address: 167 North Main Street
City: Memphis
State: TN
Zip: 38023
Email andrea.l.carpenter@usace.army.mil
Phone: 9015440817

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mississippi Ecological Services Field Office
6578 Dogwood View Parkway, Suite A
Jackson, Mississippi 39213
Phone: (601)965-4900 Fax: (601)965-4340

April 27, 2022

IN REPLY REFER TO:
2020-I-1406(A)

Mr. Edward P. Lambert
Department of the Army
Memphis District Corps of Engineers
167 North Main Street B-202
Memphis, Tennessee 38103

Dear Mr. Lambert:

The Fish and Wildlife Service (Service) has reviewed your correspondence regarding the revised draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater-North DeSoto, DeSoto County, Mississippi Feasibility Study. Our comments are submitted in accordance with the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Following the coordination and recent interagency team meeting on March 3, 2022, the U.S. Army Corps of Engineers (Corps) requested an update to the Draft Fish and Wildlife Coordination Act Report (CAR) that the Service provided in July 2021 following the release of the initial draft IFR-EIS. After reviewing the updated proposed actions, the Service has determined that due to the minimal and temporary nature of the impacts to fish and wildlife resources, the proposed action does not rise to the level of a formal CAR. The Service is in full support of the proposed action and have determined the requirements of the FWCA have been met.

In addition, the proposed project falls within the range of the northern long-eared bat (Myotis septentionalis; NLEB). If tree clearing is not proposed then the Service has no additional comments or concerns with regards to this species as it relates to the ESA. If tree clearing is proposed, then this project “may affect” the NLEB. We encourage the lead federal agency to rely upon the findings of the 2016 programmatic biological opinion for the final 4(d) rule to fulfill their project-specific Section 7 responsibilities. To evaluate the impacts of the proposed project on NLEB you may submit this project online using the Information for Planning and Consultation (IPaC) website (https://ecos.fws.gov/ipac/). Here you will be able to navigate the NLEB effects determination key and receive an automated verification letter for your records.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the NLEB as endangered under the ESA. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The NLEB, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to be addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

If you have any questions, please contact Kelly Morris in our office, telephone: (601) 321-1120, or visit our website at http://www.fws.gov/mississippiES/.

Sincerely,

_____

for James A. Austin
Acting Field Supervisor
Mississippi Field Office

From:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
To:	Morris, Kelly M; Seagroves, Lauren A
Cc:	Lambert, Edward P CIV USARMY CEMVN (USA); Williams, Eric M CIV USARMY CEMVN (USA)
Subject:	RE: [EXTERNAL] Updated Coordination for the North DeSoto County Feasibility Study
Date:	Thursday, April 28, 2022 5:12:00 PM

Hi Kelly,

Thank you for the correspondence. We will include this correspondence in the Interagency Team Coordination Appendix and update coordination in the Environmental Compliance Section prior to release. I didn't realize the NLEB was proposed for potential endangered listing, so thank you letting me know.

As there will be some very minor clearing for the levee floodwall, we will go ahead and make a NLAA determination. There will also likely be some clearing for the grade control on those ER streams, although it is likely that any trees cleared would be lost due to bank failure and head-cutting in the future without project condition. We don't know exactly where the clearing will be, yet, as the system is so dynamic and some structure locations may be adjusted. With a NLAA determination, we can leave it open to surveys later when/if we get construction authorization and funding. We should be able to do winter tree clearing, when the time comes.

Due to the potential for minor tree clearing and the recent proposal by the USFWS (on March 23, 2022) to reclassify the northern long-eared bat as endangered rather than threatened under the ESA, the USACE has determined that the proposed Levee/Floodwall and Grade Control Structure project features may affect but are not likely to adversely affect the northern long-eared bat. The USACE is committed to avoiding and minimizing impacts to habitat for the NLEB. Coordination, and potentially formal consultation will continue, as necessary, as the project progresses.

Thanks so much for your up-front and timely responses and coordination. The revised draft report is expected to be released on 6 May 2022. I will send a notice out at the appropriate time.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

Thank you,

From: Morris, Kelly M <kelly_morris@fws.gov>

Sent: Thursday, April 28, 2022 3:27 PM
To: Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA) <Andrea.L.Carpenter@usace.army.mil>; Seagroves, Lauren A <lauren_seagroves@fws.gov>
Cc: Lambert, Edward P CIV USARMY CEMVN (USA) <Edward.P.Lambert@usace.army.mil>; Williams, Eric M CIV USARMY CEMVN (USA) <Eric.M.Williams@usace.army.mil>
Subject: [Non-DoD Source] Re: [EXTERNAL] Updated Coordination for the North DeSoto County Feasibility Study

Hi Andrea,

Attached is our formal compliance letter for the North DeSoto project. I did include some new language for the northern long-eared bat as it is now proposed for listing as endangered and expected to be finalized December of this year. However, if no tree clearing is required there will be no adverse impacts for the species. Thank you again for your tremendous coordination on this project, it sure has come a long way!

Sincerely,

Kelly Morris

Fish and Wildlife Biologist

Mississippi Field Office

U.S. Fish and Wildlife Service

6578 Dogwood View Parkway
Jackson, MS 39213

601-321-1120 (office)

kelly_morris@fws.gov

(She/Her/Hers)

From: Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA) <Andrea.L.Carpenter@usace.army.mil>
Sent: Wednesday, April 20, 2022 1:47 PM
To: Morris, Kelly M <kelly_morris@fws.gov>; Seagroves, Lauren A <lauren_seagroves@fws.gov>
Cc: Lambert, Edward P CIV USARMY CEMVN (USA) <Edward.P.Lambert@usace.army.mil>; Williams,

Eric M CIV USARMY CEMVN (USA) <Eric.M.Williams@usace.army.mil>
Subject: [EXTERNAL] Updated Coordination for the North DeSoto County Feasibility Study

Hello Kelly and Lauren,

As previously discussed, the USACE is preparing to release a revised draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater-North DeSoto, DeSoto County, Mississippi Feasibility Study.

Per our coordination and recent interagency team meeting on 3 March 2022, the USACE requested an update to the draft CAR that the USFWS provided in July 2021 with the initial release of the subject study. However, as the reduced footprint and minimal impacts do not rise to the level of adverse impacts, the USFWS and USACE agreed that the USFWS is not required to provide an updated draft CAR. During the Public and Agency comment period (~6 May – 20 June 2022), the USFWS would provide a letter in support of the project describing the changes to the project (since the initial draft was released), and that there are no concerns regarding fish and wildlife resources.

Updated compliance language regarding the FWCA in the (currently unreleased) draft reads:

> "The Fish and Wildlife Coordination Act (FWCA) provides the basic authority for USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It requires Federal agencies that construct, license, or permit water resource development projects to consult with the USFWS (and the National Marine Fisheries Service in some instances) and state fish and wildlife agencies regarding anticipated impacts on fish and wildlife resources and measures to mitigate these impacts."
>
> It was determined on 19 April 2022 that, due to the minimal and temporary nature of the impacts, that this proposed action does not rise to the level of a formal Coordination Act Report. The USFWS is in support of the proposed action and the requirements of the Fish and Wildlife Coordination Act of 1943 have been met. Coordination with the USFWS, as well as a letter of support is included in Appendix ** of this report.

In addition, it was determined that the impacts have been reduced to a level that a no effect determination has been made for the northern long-eared bat. Previously our coordination included the wood stork; however, a new species list was requested on 19 April 2022, and the wood stork was no longer listed. Therefore the wood stork has been removed from the report language. A no effect determination would have been appropriate for this species, as well, as no impacts to wood stork habitat are anticipated.

Updated compliance language regarding the ESA in the (currently unreleased) draft reads:

> "The purpose of the Endangered Species Act of 1973 (ESA) is to protect and recover imperiled species of fish, wildlife, and plants and the ecosystems upon which they depend. It is administered by the USFWS. The USFWS has primary responsibility for terrestrial and freshwater organisms.
> Under the ESA, species may be listed as either endangered or threatened. A listing of endangered means a species is in danger of extinction throughout all or a significant portion of its range. A listing of threatened means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments.
>
> An official (updated) species list was requested on 19 April 2022 from the USFWS Information Planning and Consultation website. In response, the threatened NLEB (Myotis septentrionalis) was listed as potentially occurring within the proposed project area.
>
> Pursuant to Section 7 of the Endangered Species Act, as amended, the USACE has determined that implementation of the proposed action is expected to have no effect on the northern long-eared bat, as the project would not directly impact suitable habitat. A no effect determination was agreed upon in an interagency team meeting on 3 March 2022. Habitat for the northern long-eared bat is expected to improve with the implementation of the NER Plan. No plants were identified as being threatened or endangered in the project area.

If you have any questions or comments, please let us know. The last date that I can make any changes to the report before draft release is 28 April 2022.

Thanks for your help with this study,
Andrea

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

Section 3. Updated Coordination with U.S. Environmental Protection Agency (USEPA)

This section contains information that has been coordinated with or by the USEPA since the release of the initial draft Integrated Feasibility Report and Environmental Impact Statement (IFR-EIS) in May 2021. The comments that were provided in July 2021 by the USEPA are included; however, these comments do not apply to the Tentatively Selected Plan that is proposed in this revised draft IFR-EIS. Coordination is on-going with the USEPA and updated comments for the revised TSP are expected to be provided during the Agency Review and Public Comment Period that opens on 6 May and closes on 20 June 2022.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

July 8, 2021

Ms. Andrea L. Carpenter
U.S. Army Corps of Engineers
Environmental Compliance Branch
167 North Main Street
Memphis, TN 38023

Re: EPA Comments on the Memphis Metropolitan Stormwater – North DeSoto County Feasibility Study, DeSoto County, Mississippi Draft Feasibility Report with Integrated Environmental Impact Statement; CEQ No. 20210060

Dear Ms. Carpenter:

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Army Corps of Engineers (USACE) Memphis District's Memphis Metropolitan Stormwater-North DeSoto County Draft Feasibility Study and Integrated Environmental Impact Statement (draft IFR-EIS). The study area for the draft IFR-EIS lies within the Horn Lake Creek-Nonconnah and Coldwater River Basins in DeSoto County, Mississippi. The purpose of the study is to evaluate opportunities to provide flood risk management (FRM) alternatives to reduce the risks of flooding on public and commercial, residential, and critical infrastructure. The study also examines ways to enhance recreational opportunities, improve stream and wetland habitats, reduce road closures, increase access to critical infrastructure, and decrease safety concerns caused by flooding.

The USACE evaluated the No Action Alternative along with twenty-one FRM measures. The final array of FRM measures carried forward for consideration included the No Action Alternative and six action alternatives (4A, 5A, 5B, 6A, 6B, 7A). The action alternatives involved large regional scale (i.e. across the study area) alternatives to smaller localized scale (i.e. at the community level) alternatives. A nonstructural assessment was also completed that investigated the effectiveness of implementing measures such as structure elevations or flood-proofing, as well as management measures such as flood warning systems. The IFR-EIS indicates that Alternative 7A is the Locally Preferred Plan and Tentatively Selected Plan (LPP/TSP). Alternative 7A includes channel enlargement along Horn Lake Creek downstream of Goodman Road, three detention basins along tributaries of Horn Lake Creek, and a nonstructural aggregation to address residual flooding.

The EPA appreciates the collaborative approach the USACE implemented throughout the NEPA process. Coordination with the interagency team began in December 2018. The EPA accepted an invitation to become a cooperating agency on September 26, 2019. The USACE held an interagency meeting on December 19, 2019, as well as public and interagency meetings in June 2021.

Based on our review of the draft IFR-EIS, we have enclosed technical comments and recommendations for your consideration (see Enclosure). We request that the technical comments provided in this letter be addressed in the final IFR -EIS.

The EPA appreciates the opportunity to review the draft IFR-EIS. If you have any questions regarding our comments, please contact Mr. Larry Long of the NEPA Section at (404) 562-9460, or by e-mail at long.larry@epa.gov.

Sincerely,

Mark J. Fite
Director
Strategic Programs Office

Enclosure: Technical Comments

ENCLOSURE

EPA Technical Comments on the Draft Feasibility Report with Integrated Environmental Impact Statement for the Memphis Metropolitan Stormwater – North DeSoto County Feasibility Study, DeSoto County, Mississippi. CEQ No. 20210060

(1) **Green Space:** The proposed channel enlargement could potentially degrade this existing stream system and require compensatory mitigation. Incorporation of green space design will minimize impacts and provide greater ecological benefits. The EPA recommends that the USACE consider incorporating a floodplain reconnection in the location of the Horn Lake Creek detention area.

(2) **Riparian Buffers:** According to the draft IFR-EIS, approximately 895 acres of riparian buffers would be reforested with native vegetation, once fully implemented. Land adjacent to the waterway would be converted to forest to provide a buffer from development and agriculture. The EPA recommends maximizing the horizontal and longitudinal extent of the riparian buffers.

(3) **Sediment Flow:** With the enlargement of the channel at Horn Lake, channel aggradation problems are likely to occur over time. The stream would become dependent on stormflows to clear the sediment in the channel that accumulates under less severe flows. The EPA recommends that the USACE consider incorporating horizontally stepped channels with a low flow channel, and then progressive benches for the higher flows at higher elevations. It appears that this would help maintain sediment flow through the system and may provide more opportunity for riparian plantings and the incorporation of large woody debris in the channel for habitat purposes.

(4) **Natural Channel Design:** The EPA recommends the USACE consider more natural channel designs with appropriate flood storage on floodplains that will accomplish the goal of the flood risk reduction measures. More natural channel designs would likely be better from an ecosystem restoration standpoint, because reconnection will take advantage of existing vegetation and soils, which can provide useful ecosystem services as well as space for water to be stored during floods.

(5) **Hazardous, Toxic and Radioactive Waste:** The USACE preliminary Phase I environmental site assessment (ESA) identified several potential Hazardous, Toxic and Radioactive Waste (HTRW) issues. The preliminary ESA also identified the presence of several active, inactive and plugged and abandoned oil/gas wells, several injection wells, and several oil and gas pipelines within the study area. Several industrial facilities such as chemical plants and refineries were also noted in the study area. The Draft IFR-EIS states that there is a low probability of encountering HTRW from the wells, pipelines, and industrial facilities during construction of the project. A full Phase I ESA will be conducted on the TSP and will be included in the final IFR-EIS. The USACE is currently working with state regulatory agencies to determine the history of these sites. The EPA recommends that additional sampling of these sites be conducted, and that the results be included in the final IFR-EIS.

(6) **Climate Change and Environmental Justice**: The EPA appreciates your efforts to evaluate potential climate change and environmental justice impacts associated with the proposed flood control project.

Section 4. Updated Coordination with Mississippi Division of Fisheries, Wildlife and Parks (MDFWP)

This section contains information that has been coordinated with or by the MDFWP since the release of the initial draft Integrated Feasibility Report and Environmental Impact Statement (IFR-EIS) in May 2021. The comments that were provided in July 2021 by the MDFWP are included; however, these comments do not apply to the Tentatively Selected Plan that is proposed in this revised draft IFR-EIS. Coordination is on-going with the MDFWP and updated comments for the revised TSP are expected to be provided during the Agency Review and Public Comment Period that opens on 6 May and closes on 20 June 2022.

MISSISSIPPI
DEPARTMENT OF WILDLIFE, FISHERIES, AND PARKS

SAM POLLES, Ph.D
Executive Director

July 12, 2021

U.S. Army Corps of Engineers (CEMVN-PDC-UDC)
ATTN: Memphis Metropolitan Stormwater-North DeSoto County Feasibility Study
Regional Planning and Environmental Division South
167 North Main Street, Room B-202
Memphis, Tennessee 38103-1894

The Mississippi Department of Wildlife, Fisheries, and Parks appreciates the opportunity to review the **Draft Feasibility Report with Integrated Environmental Impact Statement for the Memphis Metropolitan Stormwater – North DeSoto County Feasibility Study, DeSoto County, Mississippi** and the appendices associated with this study.

The Mississippi Department of Wildlife, Fisheries, and Parks supports the selection of the Tentatively Selected Plan (TSP) to address flood risk in DeSoto County, Mississippi. We recommend that the Memphis District, Corps of Engineers carefully consider all comments received and incorporate those suggestions and comments in the final Tentatively Selected Plan where possible and feasible.

The Mississippi Department of Wildlife, Fisheries, and Parks supports the selection of Plan 1 – Active Restoration as the recommended compensatory mitigation plan. We look forward to coordinating with all stakeholders to provide comments on the final site specific mitigation plan.

Sincerely

Dennis K Riecke

Dennis Riecke
Fisheries Coordinator
Mississippi Department of Wildlife, Fisheries, and Parks
1505 Eastover Dr.
Jackson, MS 39211-6374

Mississippi
Department of Wildlife, Fisheries, and Parks

Sam Polles, Ph.D.
Executive Director

July 05, 2021

USACE
167 North Main Street
Memphis, TN 38103

Re:
North DeSoto
Desoto County, MS

Project #
Internal Id 1810

To Andrea Carpenter:

In response to your request for information dated June 16, 2021, we have searched our database for occurences of state or federally listed species and species of special concern that occur within 2 miles of the site of the proposed project. Please find our concerns and recommendations below.

The following species of concern may occur within 2 miles of the proposed project area:				
Scientific Name	Common Name	Federal Status	State Status	State Rank
Anas rubripes	American Black Duck			S1
Campanulastrum americanum	Tall Bellflower			S1
Carex jamesii	Nebraska Sedge			S1
Celastrus scandens	Climbing Bittersweet			S1
Hydrastis canadensis	Golden Seal			S1S2
Ictiobus niger	Black Buffalo			S2N
Osmorhiza longistylis	Smoother Sweet-cicely			S3
Pelecanus erythrorhynchos	American White Pelican			S3
Phacelia ranunculacea	Blue Scorpionweed			S3

Rudbeckia grandiflora	Rough Coneflower		S3N
Ursus americanus	American Black Bear	LE	S3S4

State Rank
S1 - Critically imperiled in Mississippi because of extreme rarity (5 or fewer occurences or vey few remaining individuals or acres) or because of some factor(s) making it vulnerable to extirpation.
S2 - Imperiled in Mississippi because of rarity (6 to 20 occurences or few remaining individuals or acres) or because of some factor(s) making it vulnerable to extirpation.
S3 - Rare or uncommon in Mississippi (on the order of 21 to 100 occurences).

State and Federal Status
LE Endangered - A species which is in danger of extinction throughout all or a significant portion of its range.
LT Threatened - A species likely to become endangered in foreseeable future throughout all or a significant portion of its range.

Based on the information provided, we conclude that if best management practices are properly implemented, monitored, and maintained (particularly measures to prevent, or at least, minimize negative impacts to water quality), the proposed project likely poses no threat to listed species or their habitats.

Recommendations:

As listed above, there are 11 species of concern in our database within a 2-mile radius of the proposed flood risk management and ecosystem restoration project in Desoto County, MS. Of the 11 species listed, the Louisiana Black Bear is listed as state endangered. Also, while there are no Piebald Madtom's (state endangered, federally petitioned) currently detected within a 2-mile radius of each project site location, there is still some concern pertaining to their potential occurrences and distribution. Many of the listed species are on the decline because of degradation or destruction of essential habitat needed to support them. In-stream construction projects such as widening and desnagging of channels present potential issues related to habitat destruction such as increase stormwater runoff conveyance and stream flow velocities, decreased water quality, and altered water chemistry. Potential issues of these projects include the possibility of increased sediment deposition, turbidity, exhaust runoff from roads, herbicide and pesticide load, and other unintentional introduction of pollutants being introduce to nearby streams and bodies of water. Precautions are usually planned to prevent erosion and sedimentation within the project area and areas upstream of the natural stream segments. However, increased stream velocity may increase erosion and sedimentation of the downstream natural channel areas resulting in negative impacts to crucial marsh habitat and to water quality. In addition, the project(s) could result in wetland disturbance and elimination caused by increased development in areas where the risk of flooding is decreased. These factors may negatively impact habitat conditions by detrimentally affecting respiration, feeding, and reproduction of amphibians, bats, birds, crayfishes, fishes, insects, turtles, and vegetation. Maintenance of natural floodplain vegetation and hydrology are important factors contributing to the survival these species. Effort should be made to preserve black bear habitat, especially bottomland hardwoods along major river systems, sloughs, and other waterways. Bears benefit from forest management practices that promote diverse,

productive habitats that contain blackberries, hardwoods, and other food plants; shrubs and fallen logs for escape cover; and brush piles and large trees that can serve as den sites. Forest management activities should include leaving some large, old-growth timber as denning sites for females, specifically cypress and tupelo trees that are ≥ 36 inches DBH, large trees that are compromised or show signs of cavities, and that occur near sloughs or other waterways. Piebald Madtoms are state endangered and federally petitioned. They currently are only known from the very sinuous section of the mainstem Coldwater River in the Yazoo River portion of their range. While there are no Piebald Madtom's detected within a 2-mile radius of each project site location, there is still some concern pertaining to their potential occurrences and distribution. The channelized creeks where the work is being done could still potentially have the species as they have been found in similar channelized areas in the Hatchie River as recently as 2018. Based on aerial imagery, Licks, Camp, and Red Banks Creek shows some potential habitat for the Piebald Madtom, but there have been no surveys completed in these creeks for this species based on the fish distribution database. The main concern is that if grade control structures are placed into these creeks, there could be major sediment issues, and they could act as barriers to fish movement. Piebald Madtoms need course woody debris and flow. These grade control structure may cause the creek(s) to become a series of pools rather than a riffle/run/pool complex. It is strongly encouraged that fish surveys be completed on Licks, Camp, and Red Banks Creek for presence/absence of Piebald Madtoms. If there are any additional questions, concerns, or in need assistance, please contact Matt Wagner with the United States Fish and Wildlife Service, Mississippi Ecological Services Field Office at matthew_wagner@fws.gov. Precautions should be taken to ensure that the proposed actions do not result in increased stream flow or further stream channel, bed, or bank degradation upstream or downstream, as well as potential head-cutting, downstream of the proposed project site. We recommend that best management practices be properly implemented, maintained, and monitored regularly for compliance, both upstream and downstream of any crossings. Specific emphasis should be placed on measures that help look for signs of increased erosion, and minimize the occurrence of excess sedimentation, suspended particulate matter, and contaminants at all project sites and surrounding areas from leaving in stormwater run-off or from direct entry into nearby streams and waterbodies. If such signs are discovered, then appropriate actions to address the issue should be taken. Please check MS Department of Environmental Quality for BMP.

Please feel free to contact us if we can provide any additional infromation, resources, or assitance that will help minimize negative impacts to the species and/or ecological communities identified in this review. We are happy to work with you to ensure that our state's precious natural heritage is conserved and preserved for future Mississippians.

Completed by **Quentin Fairchild**

Back to Details

Section 5. Updated Coordination with Mississippi Department of Environmental Quality (MDEQ)

This section contains information that has been coordinated with or by the MDEQ since the release of the initial draft Integrated Feasibility Report and Environmental Impact Statement (IFR-EIS) in May 2021. No comments were received by the MDEQ regarding the initial draft IFR-EIS. Coordination is on-going with the MDEQ and comments regarding a future request for State Water Quality Certification and the revised TSP are expected to be provided during the Agency Review and Public Comment Period that opens on 6 May and closes on 20 June 2022.

From: Florance Bass
To: Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
Subject: [Non-DoD Source] RE: DeSoto Feasibility Study
Date: Friday, April 29, 2022 2:26:36 PM

Andrea,

We have no further comments at this time.

Florance Bass, P.E., BCEE
Manager, 401/Stormwater Branch
Environmental Permits Division
Mississippi Department of Environmental Quality
601-961-5614 (desk)
769-233-3276 (cell)

From: Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA) <Andrea.L.Carpenter@usace.army.mil>
Sent: Tuesday, April 19, 2022 4:37 PM
To: Florance Bass <FBass@mdeq.ms.gov>
Subject: RE: DeSoto Feasibility Study

Hi Florance,

Sorry for 2 emails in one day. This is what I have in the main report for the CWA Section.

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Section 401 of the CWA requires a Water Quality Certification from the Mississippi Department of Environmental Quality (MDEQ) ensuring the proposed project does not violate established effluent limitations and water quality standards. On June 1, 2020, the EPA finalized the “Clean Water Act Section 401 Certification Rule” to implement the water quality certification process consistent with the text and structure of the CWA. The final rule was published in the *Federal Register* on July 13, 2020, and became effective on September 11, 2020. Coordination with MDEQ is on-going, and State Water Quality Certification would be requested at a later date as plans progress and detailed designs are completed.

A Section 404(b)(1) evaluation to assess the short- and long-term impacts associated with the placement of fill materials into waters of the United States resulting from the proposed project is included in Appendix E. The Mississippi Department of Environmental Quality (MDEQ) is in coordination with the USACE and will provide

comments to this draft report. The MDEQ has not indicated any items that would prevent the issuance of State Water Quality Certification pending review of detailed plans, when available.

Let me know if I need to change anything. My drop dead date is 28 April. Thanks!

From: Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
Sent: Tuesday, April 19, 2022 9:05 AM
To: FBass@mdeq.ms.gov
Subject: DeSoto Feasibility Study

Good morning Florance,

As we discussed during the interagency team meeting on 3 March 2022, the USACE is preparing to release a revised draft EIS regarding Flood Risk Management and Ecosystem Restoration in DeSoto County, Mississippi on 6 May 2022.

I have attached the draft 404(b)(1) for your review.

We also discussed that the USACE would request a letter that provides assurances that there are currently no known roadblocks to the issuance of WQC, pending review of detailed information during a later phase of the project. I would like to go ahead and request that you review this attached draft 404, and provide any comments or concerns that you have. If possible, we would like to provide that letter in the draft EIS prior to public release on 6 May 2022. To make that date, would need to have any responses in NLT COB 28 April 2022. Otherwise, we will include it in the final release of the EIS.

Give me a call if you want to discuss.

Thanks,
Andrea
(901) 489-2257

Section 6. Updated Coordination with the Natural Resources Conservation Service (NRCS)

This section contains information that has been coordinated with or by the NRCS since the release of the initial draft Integrated Feasibility Report and Environmental Impact Statement (IFR-EIS) in May 2021. The comments that were provided in July 2021 by the MDFWP are included. These comments indicate that no Wetland Reserve Sites would be impacted by the proposed TSP. Coordination is on-going with the NRCS and updated comments for the revised TSP are expected to be provided during the Agency Review and Public Comment Period that opens on 6 May and closes on 20 June 2022.

From: Davis, Chantel - NRCS, Senatobia, MS
To: Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
Subject: [Non-DoD Source] FW: Desoto County Feasibility Study
Date: Wednesday, August 4, 2021 12:13:58 PM
Attachments: image001.png

Hey Andrea
Please see Jason's message below.
Thanks,

Chantel S. Davis

USDA – Natural Resources Conservation Service
Supervisory District Conservationist
Tate/Desoto Field Offices
502 N. Robinson St. Suite A.
Senatobia, MS 38668
Or
3260 Hwy 51 S.
Hernando, MS 38632
662-560-9001 ext 4071
601-715-9347 cell

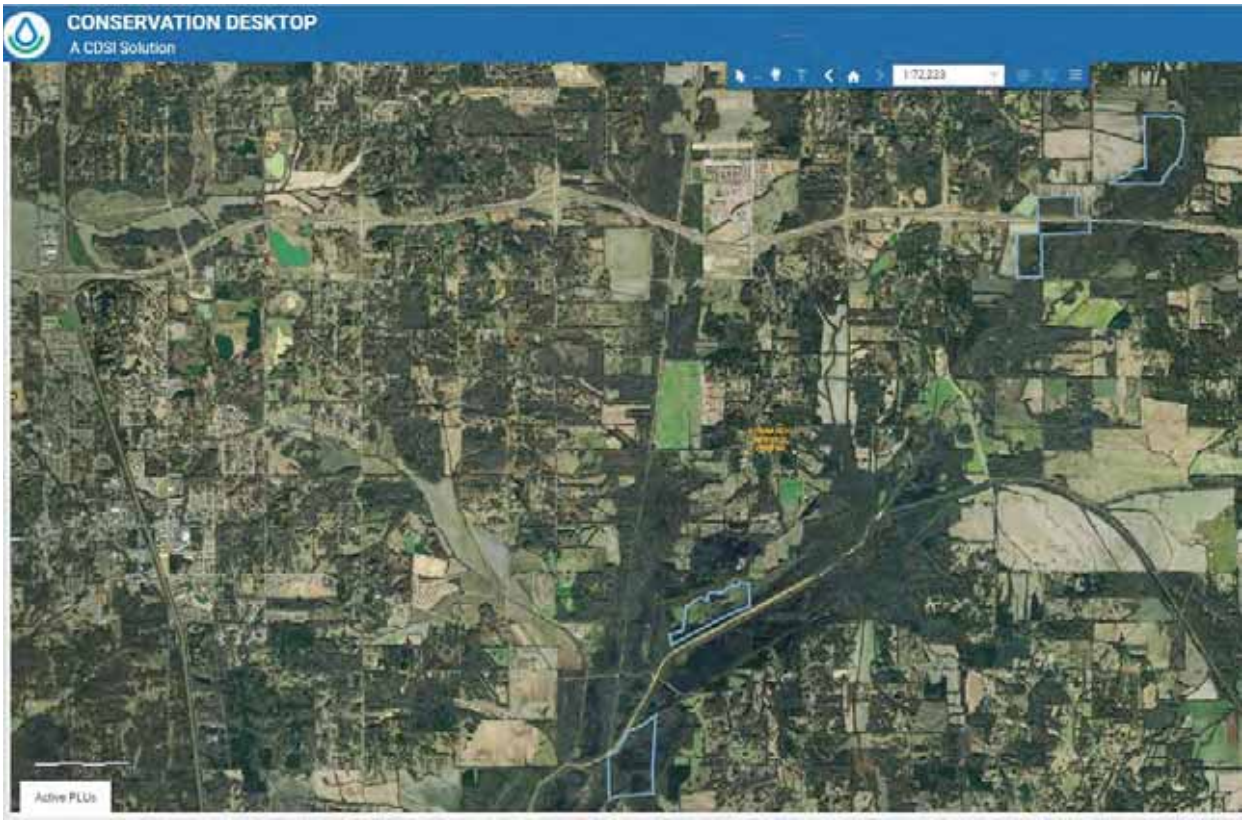
While the Tate and Desoto County Service Centers are currently closed to visitors because of the pandemic, we continue to work with agricultural producers via phone, email, and other digital tools. Contact us at 662-560-9001 ext 3 or 662-429-8687 ext 3 to make an appointment.
Please visit farmers.gov/coronavirus for the latest information on Service Center status.

From: Keenan, Jason - NRCS, Jackson, MS <jason.keenan@usda.gov>
Sent: Monday, July 26, 2021 12:15 PM
To: Davis, Chantel - NRCS, Senatobia, MS <chantel.davis@usda.gov>
Subject: RE: Desoto County Feasibility Study

Hi Chantel,
I am glad I asked! There was a lot more area than just the intersection to look at, but good news, there is nothing within the channelization map (near 51/Goodman road). There are no easements in the Detention ponds either. The NLCD footprints and Grad control structures are clear as well, but please note that there are easements along the Coldwater River. Luckily, none of the projected work is within those sections. All the GSS they are planning are in the upper tributaries, and not in the Coldwater river itself, so well away from the easements.

I hope this helps! If you need anything else, please let me know.

Thanks,
Jason



From: Davis, Chantel - NRCS, Senatobia, MS <chantel.davis@usda.gov>
Sent: Monday, July 26, 2021 11:40 AM
To: Keenan, Jason - NRCS, Jackson, MS <jason.keenan@usda.gov>
Subject: FW: Desoto County Feasibility Study
Importance: High

Jason,
Here is a map of the area.

Chantel S. Davis

USDA – Natural Resources Conservation Service
Supervisory District Conservationist
Tate/Desoto Field Offices
502 N. Robinson St. Suite A.
Senatobia, MS 38668
Or
3260 Hwy 51 S.
Hernando, MS 38632
662-560-9001 ext 4071
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While the Tate and Desoto County Service Centers are currently closed to visitors because of the pandemic, we continue to work with agricultural producers via phone, email, and other digital tools. Contact us at 662-560-9001 ext 3 or 662-429-8687 ext 3 to make an appointment.
Please visit farmers.gov/coronavirus for the latest information on Service Center status.

From: Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA) <Andrea.L.Carpenter@usace.army.mil>
Sent: Thursday, May 13, 2021 2:40 PM
To: Morris, Kelly <kelly_morris@fws.gov>; FBass@mdeq.ms.gov; Dennis Riecke <Dennis.Riecke@wfp.ms.gov>; larry.long@epa.gov; Davis, Chantel - NRCS, Senatobia, MS <chantel.davis@usda.gov>
Cc: Pruitt, Bruce ERDC-EL-MS <Bruce.Pruitt@erdc.dren.mil>; Haring, Christopher P CIV (USA) <Christopher.P.Haring@usace.army.mil>
Subject: FW: Desoto County Feasibility Study
Importance: High

Hello Interagency Team,

The USACE has reached a tentatively selected plan and are working on getting the draft Integrated Feasibility Report/EIS out for review around the end of May. I would like to set up a coordination meeting with everyone from the IAT and the ERDC group to go through all pertinent information. As the draft Integrated Feasibility Report and EIS is set to release on 28 May 2021, I am proposing a meeting on 17 June 2021 at 10 am to give everyone a chance to review the document prior to meeting. This is tentative, as I have not gathered your schedules and availability. Once the draft report is released, any comments would be due within 45 days of the release. Please feel free to call me any time, at all.

The Study includes a flood risk component which requires compensatory mitigation, as well as an ecosystem restoration component, both are described below.

We have worked/are working with the Engineering Research and Development Center to certify a stream condition index (SCI) model. The purpose of the assessment was to develop a stream condition assessment method that identified existing conditions within the watershed, detailed the major water resources problems and opportunities in the watershed, and recommended tools and a strategic course of action for achieving the desired conditions in the watershed. The SCI, was formulated, tested and refined to determine the existing conditions, identify the problems in the watershed, prioritize stream segments for restoration, recommend structural and non-structural restoration designs, and provide a numerical assessment of alternatives for planning purposes. The SCI is a visual, multi-metric assessment tool using metrics to characterize the hydrologic, geomorphic, water quality, plant habitat and animal habitat of a selected stream reach.

This effort represents a method of assessing ecosystems using multi-attributes across multi-scales, called the "Multi-Scale Watershed Approach" (MSWA) that was first developed and certified through the National Ecosystem Planning Center of Expertise (ECO-PCX) for the Duck River Watershed Plan, located in middle Tennessee. The concept behind the MSWA was to establish a means of utilizing readily available data and surface assessments (i.e., "boots-on-the-ground" observations) to create an overall knowledge base focusing on watershed problems and opportunities. The outcome of MSWA can become the principle component of the decision-making process such that water resource managers have the ability to make scientifically defensible decisions not only at project specific scales, but also beyond the footprint of the project to the entire watershed. From the watershed perspective, the cause and effect relationships between land use, water quality and quantity, in-channel and riparian conditions, and biotic responses culminate at a single outlet from the watershed and are representative of the ecological condition of the watershed. In addition, assessment at the watershed scale offers advance planning including design, construction, and operation, maintenance, repair, replacement and restoration of aquatic ecosystems.

I am copying in a description of the proposed plans below. Let me know if you have any questions or concerns. I'll send an email out that is similar to this one to the entire team asap.

PROJECT DESCRIPTION.
The current Tentatively Selected Plan (TSP) combines the Locally Preferred Plan (LPP) for flood risk management and the National Ecosystem Restoration (NER) plan. The LPP includes the National Economic Plan with additional features the local sponsor is in favor of retaining. The following is a description of the features proposed in each of the plans.

NED Plan:

A channel enlargement along Horn Lake Creek (HLC) would be constructed downstream of Goodman Rd. in Horn Lake, Mississippi, enlarging the channel bottom from approximately 15-25 feet to approximately 40 feet for approximately 0.8-mile from stream mile 18.6 to Mile 19.41. The creek banks would be constructed for stability at a slope of approximately 3-foot horizontal to 1-foot vertical (3:1). The Horn Lake Creek channel enlargement would require tree clearing of approximately 10 acres along one bank of Horn Lake Creek for access, bank stabilization, and excavation. The enlargement and slope flattening would require approximately 95,000 cubic yards of excavation, all of which would be disposed off-site. Approximately 22,750 tons of riprap would be placed to prevent scour damage. The riprap would be placed in a three-foot deep layer on the bottom and 5 feet up both banks. The riprap would be placed over approximately 6,000 tons of filter material. The upper banks would be protected with 18,780 square yards of turf reinforcing mat. The 0.04 AEP Nonstructural aggregation feature reduces stages during the 0.01 AEP event for 158 structures with an average reduction of 0.75 feet. During the 0.04 AEP event this feature reduces stages for 125 structures with an average reduction of 1 foot.

The Lateral D Detention Basin would be in-line with the stream, a tributary to HLC. The full basin would encompass approximately 22 acres of BLH forested land, while the bottom area of the detention basin is approximately 16 acres. Tree clearing would be required for the full acreage mentioned, and excavation would be required to a depth of approximately 10 with 3-foot horizontal to 1-foot vertical side slopes. A 500-linear foot outlet embankment would be constructed to include a 48-inch reinforced concrete pipe (RCP) outlet with a 100-linear foot overflow spillway armored with approximately 2,000 tons of riprap over approximately 500 tons of filter material on the downstream side. The spillway would operate at elevation 300.0 (the 0.50 annual chance exceedance (ACE) event, or 2-year flood). The maximum storage of 177 acre-feet would require approximately 350,000 CY of excavation. The current design assumes replanting with native vegetation of approximately 10%, or 2.2 acres, of the area that would be cleared.

Locally Preferred Plan:

The comparison of the LPP Plan and the NED Plan is the addition of two detention basins, one Cow Pen Creek and the other on Rocky Creek. These basins reduce structural damages on each of the tributaries and were retained at the request of the DeSoto County Board of Supervisors (the non-federal sponsor, NFS).

The Rocky Creek in-line detention basin would total approximately 9 acres and would require approximately 7.5 acres of tree clearing and excavation to a depth of approximately 10 feet. The pool bottom area would encompass approximately 6 acres. The dry detention basin would have a single pool elevation of approximately 302.0. Slopes would be constructed at approximately 3H:1V for stability. A downstream embankment would be constructed and extend approximately 500 linear feet. The embankment would include a 48-inch RCP outlet and 100- linear foot overflow spillway armored with approximately 6,000 tons of riprap placed over approximately 1,500 tons of filter material on the downstream side. The current design assumes replanting with native vegetation of approximately 10%, or 0.9 acre, of the area that would be cleared.

The Cow Pen Creek detention basin would total approximately 20 acres in two pools (a 12-acre upstream pool and an 8-acre downstream pool) and would require approximately 8.5 acres of tree clearing (upstream pool only) and excavation to a depth of approximately 10 feet. The upper pool would have a bottom elevation of 262.0 with a bottom area of 10 acres, and slopes would be constructed at 3H:1V back to the existing grade. A 500-linear foot embankment would be constructed on the downstream end of the detention basin and would include a 48-inch RCP outlet and 100-linear foot overflow spillway armored with approximately 2,000 tons of riprap over approximately 500 tons of filter material on the downstream side. The spillway would operate at elevation 272.0,

approximately at the 0.50 ACE event. The maximum storage of 108 acre-feet requires approximately 175,000 cubic yards of excavation which would be disposed of off-site within an upland disposal area, no impacts are anticipated. The current design assumes replanting with native vegetation of approximately 10%, or 1.2 acres, of the area that would be cleared.

The downstream Cow Pen detention basin would be offline and encompass approximately 8 acres. The basin would have a bottom elevation of 258.0 with a bottom area of approximately 6 acres. Slopes would be constructed up to the existing grade at 3H:1V. A 500-linear foot embankment would be constructed on the downstream end of the detention basin and would include a 48-inch RCP outlet and 100-linear foot overflow spillway armored with approximately 2,000 tons of riprap over approximately 680 tons of filter material. An inlet sill would require an additional 800 tons of riprap. The 100-foot wide spillway would operate at elevation 268.0, approximately at the 0.50 ACE event. The maximum storage of 68 acre-feet requires approximately 115,000 cubic yards of excavation which would be disposed of off-site. The current design assumes replanting with native vegetation of approximately 10%, or 1.2 acres, of the area that would be cleared.

Active Restoration is the recommended compensatory mitigation plan. A total of approximately 42.5 acres of agricultural land would be reforested by planting native trees, other activities as described below may also be included, as determined necessary by the IAT. A planting plan would be created in coordination with the IAT and included in the release of the final Environmental Impact Statement and Conceptual Mitigation Plan. A site- specific mitigation plan would be developed during PED, further detailing a planting plan. Grade control structures or low-water weirs, strategic placement of coarse woody debris, construction of in-stream habitat, and bench cuts may also be considered for compensatory mitigation; however, no sites have been identified and detailed analyses have not been conducted.

NER Plan:

The ecosystem restoration goal is to stabilize channels and connect/improve riparian habitat, which would minimize channel degradation and erosion and support aquatic ecosystem form and function along main stem channels and tributaries in the DeSoto County watersheds. Currently, the erosion, head-cutting and stream bed degradation leads to bank failures, sedimentation, and prevents stable habitat from forming. Riparian and potentially reforestable acreages were determined using National Land Cover Data mapping within 328 feet of each stream. Categories assumed to be reforestable include cultivated crops, barren land, hay/pasture, herbaceous, and shrub/scrub. This plan consists of eleven streams that would have a system of grade control structures (GCS) placed in each of the creeks (See Table below). The plan also included a riparian reforestation feature of 25% of the reforestable lands within 100 meters of each stream. Grade control structures were identified as systems of structures paired with various stabilization techniques such as stone toes, channel training structures, and pool and riffle components.

Stream	Alt. ID	# GCS	Riparian Reforestation (acres)	# Average Annual Habitat Units
Camp	CP-5	7	98	98
Cane	CN-5	9	66	54
Hurricane	HN-5	5	160	140
Lick	LC-5	2	36	24
Nonconnah	NO-5	6	107	65
Mussacuna	MC-5	2	57	40
Horn Lake	HL-5	14	64	101
Nolehoe	NL-5	11	32	54
Johnson	JC-5	11	122	113
Red Banks	RB-5	5	48	46
Short Fork	SF-5	9	106	84

Again, please feel free to call me at any time with any questions or concerns.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

Section 7. Updated Public Coordination

This section contains information that has been coordinated with or by the Public since the release of the initial draft Integrated Feasibility Report and Environmental Impact Statement (IFR-EIS) in May 2021. The Public comments that were provided in July 2021 by the Public are included in this section along with answers to those comments. On June 29, 2021, a public meeting was held to update the public on the initial TSP presented with the initial draft IFR-EIS of May 2021 and allow for public comments. In addition to this in-person meeting, a virtual presentation was prepared and posted on the project website. Comments received during the meeting and public comment period were related to erosion and stream instability, roadway flooding, increase in stormwater flooding, and culvert sizing, residential flooding, and wastewater treatment facility locations. Public outreach efforts are ongoing, and another public meeting will be held for the purpose described above in late May 2022. Additional comments are expected to be provided during the Public Comment Period that opens on 6 May and closes on 20 June 2022.

NOTICE OF PUBLIC MEETING

Memphis Metropolitan Stormwater - North Desoto County, Mississippi

The U.S. Army Corps of Engineers (USACE) will host a public meeting to inform the public and to solicit comments regarding the release of the draft Integrated Feasibility Report and Environmental Impact Statement (DIFR-EIS) for the Memphis Metropolitan Stormwater Management Project: North DeSoto County, Mississippi. The DIFR-EIS presents potential solutions to reduce damages from flood risk and channel instability as well as to improve aquatic habitat in DeSoto County. Project features have been designed to avoid or minimize adverse environmental impacts to the extent practicable. Study documents can be downloaded from the project website: https://www.mvm.usace.army.mil/Missions/Projects/North-DeSoto-County-Feasibility-Study/.

This public meeting notice is being posted per the National Environmental Policy Act (NEPA) and the Council of Environmental Quality's Regulations for Implementing NEPA, Section 1506.6; Public Involvement and the Clean Water Act (CWA) Section 404 in accordance with provisions of Title 33 CFR Parts 336.1(b)(1) and 337.1, which establish policy, practices, and procedures to be followed on federal actions involving the disposal of dredged or fill material into waters of the United States (application of Section 404(b)(1) of the CWA guidelines); and the National Historic Preservation Act (NHPA) Section 106.

The study area lies in the Horn Lake Creek-Nonconnah and Coldwater River basins in DeSoto County, Mississippi. This includes Horn Lake Creek and tributaries, Nonconnah River, Camp Creek and Tributaries, Hurricane Creek, Johnson Creek, and numerous other tributaries of the Coldwater River watershed in DeSoto County, Mississippi. The study area includes the cities of Horn Lake, Southaven, Olive Branch, Walls, and Hernando. The most significant flooding issues occur in the northern part of the county, while channel instability and aquatic habitat degradation is more widespread.

The USACE invites the public; federal, state, and local agencies; Native American tribes; and other interested organizations to participate in the public meeting and to review and provide comments on the DIFR-EIS. The public meeting will begin at 6 p.m. on June 29, 2021 at the Landers Center, 4560 Venture Drive, Southaven, MS 38671. A virtual presentation will occur simultaneously and will be available via YouTube. The link to the virtual presentation will be posted to the project website, noted above, prior to 6 p.m. on June 29, 2021. Interested individuals may provide comments and questions concerning this study to (1) the USACE, in person, at the public meeting; (2) by regular U.S. Mail to the U.S. Army Corps of Engineers (CEMVN-PDC-UDC), ATTN: Memphis Metropolitan Stormwater-North DeSoto County Feasibility Study, Regional Planning and Environmental Division South, 167 North Main Street, Room B-202, Memphis, Tennessee 38103-1894; and/or (3) by email to: CEMVM-DeSoto-Comments@usace.army.mil. *Please include your name and return address on the first page of your written comments*. Comments related to the DIFR-EIS should be received no later than July 12, 2021, to be considered in the final integrated feasibility report and environmental impact statement. For additional information concerning the public meeting or the study contact Andrea Carpenter, Environmental Manager, at 901-544-0817.

Came in after presentation was done

US Army Corps of Engineers®

Desoto County
Draft Feasibility Report and Integrated Environmental Impact Statement
Registration Form

Name: Mark Gardner

Organization (if any): Desoto County / Board of supervisors

Address: _____

_____

Telephone: 901-238-1600

Email: mgardner@desotocountyms.gov

Do you wish to make a statement? ____yes ✓ no

Would you like to be on the project mailing list? ✓ yes ____no

---

US Army Corps of Engineers®

Desoto County
Draft Feasibility Report and Integrated Environmental Impact Statement
Registration Form

Name: Mark Aquadro

Organization (if any): _____

Address: 4584 Center Hill Rd.

Olive Branch, MS ~~38654~~ 38654

Telephone: (901) 522-9000

Email: mark.aquadro@gmail.com

Do you wish to make a statement? ____yes ✓ no

Would you like to be on the project mailing list? ✓ yes ____no

US Army Corps of Engineers®

Desoto County
Draft Feasibility Report and Integrated Environmental Impact Statement
Registration Form

Name: Lyn TARVER

Organization (if any): _____

Address: 2888 LAVERNE Rd

MESBIT MS 38651

Telephone: 901-619-3553

Email: TARVJIM@GMAIL.COM

Do you wish to make a statement? ____yes X no

Would you like to be on the project mailing list? ____yes ____no

US Army Corps of Engineers®

Desoto County
Draft Feasibility Report and Integrated Environmental Impact Statement
Registration Form

Name: Christie Barclay

Organization (if any): Desoto County

Address: 4273 Windermere Dr.

Nesbit MS 38651

Telephone: 662-449-6449

Email: Cbarclay@desotocountyms.gov

Do you wish to make a statement? ___yes _X_no

Would you like to be on the project mailing list? ___yes _X_no

---

US Army Corps of Engineers®

Desoto County
Draft Feasibility Report and Integrated Environmental Impact Statement
Registration Form

Name: Keith Williams

Organization (if any): Bridgforth Properties

Address: 3606 Bridgforth Rd

Olive Branch, MS 38654

Telephone: 901-508-9547

Email: KeithgWilliams11@gmail.com

Do you wish to make a statement? ___yes _X_no

Would you like to be on the project mailing list? _X_yes ___no

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Desoto County
Draft Feasibility Report and Integrated Environmental Impact Statement
Registration Form

Name: Lee Caldwell

Organization (if any): Desoto County Supervisor

Address: 1550 Nesbit Rd

Nesbit, MS 38651

Telephone: 901-238-5522

Email: LCaldwell@DesotoCountyMS.gov

Do you wish to make a statement? X yes ___ no

Would you like to be on the project mailing list? ___ yes ___ no

US Army Corps of Engineers®

Mark Smith has his card.

Desoto County
Draft Feasibility Report and Integrated Environmental Impact Statement
Registration Form

Name: Myles Russell

Organization (if any): Senator Roger Wicker's office

Address: P.O. Box 3777

Tupelo, MS

Telephone: 662-200-8456

Email: myles_russell@wicker.senate.gov

Do you wish to make a statement? ___ yes ___ no

Would you like to be on the project mailing list? ___ yes ___ no

From:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
To:	mark.aquadro@gmail.com; CEMVM-DeSoto-Comments
Cc:	Roberts, Jennifer C CIV USARMY CEMVN (USA); Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
Subject:	Draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater, DeSoto County, Mississippi Feasibility Study
Date:	Thursday, April 21, 2022 11:53:12 AM

Hello,

Thank you for your comments received in July 2021 regarding the draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater, DeSoto County, Mississippi Feasibility Study. After our initial response to your comment at the public meeting, it was determined that significant changes to the proposed Tentatively Selected Plan would occur. Updates to the analysis of proposed features in the TSP indicated that the proposed features were no longer justified, and reformulation was required.

After reformulation, the Flood Risk Management (FRM) Tentatively Selected Plan (TSP) is the new NED plan which includes a levee-floodwall feature along with a nonstructural aggregation to reduce residual risks. A revised draft IFR-EIS is being prepared for release on 6 May 2022. Your comments along with this response will be included in the revised draft IFR-EIS. A public meeting, which has not yet been scheduled, will be held to inform the Public on the new TSP and allow another opportunity for comments. A public comment period will open on May 6, 2022 and end on June 20, 2022.

Your comment stated:

“Am concerned about plans to put wastewater treatment plant near Fairhaven Fire Station off Center Hill Rd. because of additional wastewater going in Lake which flows into Coldwater River as to wildlife and flooding. Houses in area already in 100-yr floodplain.”

USACE Response:

The address provided, 6401 Northwood Cove, Olive Branch MS 38654, does lie within the study area; however, the proposed action would not directly benefit or impact this area. The proposed water treatment plant is not within the scope of this study; however, continued development has been noted as one of the leading contributors to the flash-flooding and ecosystem restoration degradation in DeSoto County.

You have indicated that you would like to receive further communications regarding this project, and you will be notified as to important dates as they are set.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103

Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

From: CEMVM-DeSoto-Comments
To: CEMVM-DeSoto-Comments; Paul Woodruff
Cc: Roberts, Jennifer C CIV USARMY CEMVN (USA); Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
Subject: RE: [Non-DoD Source] Flood Study
Date: Thursday, April 21, 2022 11:48:01 AM

Hello,

Thank you for your comments received in July 2021 regarding the draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater, DeSoto County, Mississippi Feasibility Study. After our initial response to your comment, it was determined that significant changes to the proposed Tentatively Selected Plan would occur. Updates to the analysis of proposed features in the TSP indicated that the proposed features were no longer justified, and reformulation was required.

After reformulation, the Flood Risk Management (FRM) Tentatively Selected Plan (TSP) is the new NED plan which includes a levee-floodwall feature along with a nonstructural aggregation to reduce residual risks. A revised draft IFR-EIS is being prepared for release on 6 May 2022. Your comments along with this response will be included in the revised draft IFR-EIS. A public meeting, which has not yet been scheduled, will be held to inform the Public on the new TSP and allow another opportunity for comments. A public comment period will open on May 6, 2022 and end on June 20, 2022.

Your comment stated:

“I would like to make a comment on the storm water runoff from Tulane Rd that flows through my property at 2747 Starlanding. Since we’ve lived at this address the amount of water that flows through has increased and cutting a large ditch about 100 yards long. My desire would be that this issue would be taken note of and looked at options that I may have.”

USACE Response:

The address provided, 2747 Starlanding Rd., Nesbit MS, does lie within the study area; however, the proposed action would not directly benefit or impact this area. Hurricane Creek, which is nearby this address, does lie within a proposed project stream reach for ecosystem restoration. Hurricane Creek would be stabilized and reforestation would occur adjacent to the stream to provide habitat.

You have indicated that you would like to receive further communications regarding this project, and you will be notified as to important dates as they are set.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

-----Original Message-----

From: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Sent: Friday, July 23, 2021 6:09 AM
To: Paul Woodruff <pehjc5@bellsouth.net>; CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: RE: [Non-DoD Source] Flood Study

Hello Mr. Woodruff,

Thank you for your comment and interest in the study. We are compiling all comments received, and will be incorporating them into the public record. Responses will be made available as soon as possible.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

-----Original Message-----
From: Paul Woodruff <pehjc5@bellsouth.net>
Sent: Monday, July 12, 2021 8:51 PM
To: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: [Non-DoD Source] Flood Study

I would like to make a comment on the storm water runoff from Tulane Rd that flows through my property at 2747 Starlanding. Since we've lived at this address the amount of water that flows through has increased and cutting a large ditch about 100 yards long. My desire would be that this issue would be taken note of and looked at options that I may have.
Paul Woodruff
2747 Starlanding Nesbit,Ms

From:	CEMVM-DeSoto-Comments
To:	CEMVM-DeSoto-Comments; dan arata
Cc:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA); Roberts, Jennifer C CIV USARMY CEMVN (USA)
Subject:	RE: [Non-DoD Source]
Date:	Thursday, April 21, 2022 11:43:54 AM

Hello,

Thank you for your comments received in July 2021 regarding the draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater, DeSoto County, Mississippi Feasibility Study. After our initial response to your comment, it was determined that significant changes to the proposed Tentatively Selected Plan would occur. Updates to the analysis of proposed features in the TSP indicated that the proposed features were no longer justified, and reformulation was required.

After reformulation, the Flood Risk Management (FRM) Tentatively Selected Plan (TSP) is the new NED plan which includes a levee-floodwall feature along with a nonstructural aggregation to reduce residual risks. A revised draft IFR-EIS is being prepared for release on 6 May 2022. Your comments along with this response will be included in the revised draft IFR-EIS. A public meeting, which has not yet been scheduled, will be held to inform the Public on the new TSP and allow another opportunity for comments. A public comment period will open on May 6, 2022 and end on June 20, 2022.

Your comment stated:

“Hey hwy 51 floods to and some of goodman Road flood to danarata 6300 southbridge cr hornlake ms 38637.”

USACE Response:

The address provided, 6300 Southbridge Cr, Horn Lake MS 38637, and associated road flooding does lie within the study area. The proposed action would not directly benefit or impact the address provided; however, some road flooding along Highway 51 and Goodman Road would be alleviated with the implementation of the proposed levee and floodwall that, if implemented, would be constructed immediately east of Highway 51, south of Goodman Road.

You have indicated that you would like to receive further communications regarding this project, and you will be notified as to important dates as they are set.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

-----Original Message-----
From: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Sent: Friday, July 23, 2021 6:08 AM
To: dan arata <danarata@att.net>; CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: RE: [Non-DoD Source]

Hello Mr. Arata,

Thank you for your comment and interest in the study. We are compiling all comments received, and will be

incorporating them into the public record. Responses will be made available as soon as possible.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

-----Original Message-----
From: dan arata <danarata@att.net>
Sent: Thursday, July 8, 2021 8:33 PM
To: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: [Non-DoD Source]

Hey hwy 51 floods to and some of goodman Road flood to danarata 6300 southbridge cr hornlake ms 38637

Sent from my iPhone

From:	CEMVM-DeSoto-Comments
To:	CEMVM-DeSoto-Comments; bradley brown
Cc:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA); Roberts, Jennifer C CIV USARMY CEMVN (USA)
Subject:	RE: [Non-DoD Source] Flooding
Date:	Thursday, April 21, 2022 11:41:00 AM

Hello,

Thank you for your comments received in July 2021 regarding the draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater, DeSoto County, Mississippi Feasibility Study. After our initial response to your comment, it was determined that significant changes to the proposed Tentatively Selected Plan would occur. Updates to the analysis of proposed features in the TSP indicated that the proposed features were no longer justified, and reformulation was required.

After reformulation, the Flood Risk Management (FRM) Tentatively Selected Plan (TSP) is the new NED plan which includes a levee-floodwall feature along with a nonstructural aggregation to reduce residual risks. A revised draft IFR-EIS is being prepared for release on 6 May 2022. Your comments along with this response will be included in the revised draft IFR-EIS. A public meeting, which has not yet been scheduled, will be held to inform the Public on the new TSP and allow another opportunity for comments. A public comment period will open on May 6, 2022 and end on June 20, 2022.

Your comment stated:

“My name is Bradley I stay at 10716 Wellington Dr, Olive Branch MS 38654. In June 2019 my street flooded I had to replace everything in the house and my car was totaled out with water damage. There is a ditch that run behind our house that cause the flood. Wish somebody would fix the problem before it happen again.”

USACE Response:

The address provided, 10716 Wellington Dr, Olive Branch MS 38654, does lie within the study area; however, the proposed action would not directly benefit or impact this area. Camp and Lick Creeks, which are nearby this address, do lie within a proposed project stream reach for ecosystem restoration. Camp and Lick Creeks would be stabili ed and reforestation would occur adjacent to the stream to provide habitat.

You have indicated that you would like to receive further communications regarding this project, and you will be notified as to important dates as they are set.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

-----Original Message-----
From: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Sent: Friday, July 23, 2021 6:08 AM
To: bradley brown <bradbrown703@gmail.com>; CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: RE: [Non-DoD Source] Flooding

Hello,

Thank you for your comment and interest in the study. We are compiling all comments received, and will be incorporating them into the public record. Responses will be made available as soon as possible.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

-----Original Message-----
From: bradley brown <bradbrown703@gmail.com>
Sent: Thursday, July 8, 2021 6:39 AM
To: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: [Non-DoD Source] Flooding

My name is Bradley I stay at 10716 Wellington dr Olive Branch ms 38654. In June 2019 my street flooded I had to replace everything in the house and my car was totaled out with water damage. There is a ditch that run behind our house that cause the flood. Wish somebody would fix the problem before it happen again.

From:	CEMVM-DeSoto-Comments
To:	CEMVM-DeSoto-Comments; JAMES GREER
Cc:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA); Roberts, Jennifer C CIV USARMY CEMVN (USA)
Subject:	RE: [Non-DoD Source] Drainage problem
Date:	Thursday, April 21, 2022 11:40:06 AM

Hello,

Thank you for your comments received in July 2021 regarding the draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater, DeSoto County, Mississippi Feasibility Study. After our initial response to your comment, it was determined that significant changes to the proposed Tentatively Selected Plan would occur. Updates to the analysis of proposed features in the TSP indicated that the proposed features were no longer justified, and reformulation was required.

After reformulation, the Flood Risk Management (FRM) Tentatively Selected Plan (TSP) is the new NED plan which includes a levee-floodwall feature along with a nonstructural aggregation to reduce residual risks. A revised draft IFR-EIS is being prepared for release on 6 May 2022. Your comments along with this response will be included in the revised draft IFR-EIS. A public meeting, which has not yet been scheduled, will be held to inform the Public on the new TSP and allow another opportunity for comments. A public comment period will open on May 6, 2022 and end on June 20, 2022.

Your comment stated:

“I live at 6401 Northwood Cove, Olive Branch MS 38654. A very large drainage ditch creek runs behind my home. It has huge debris and erosion issues. At o e time DeSoto county put riprap on the bank and did work on it. Over the years rip rap fell into the ditch and trees have floated down Ali g with gravel and sand. How can we please get help with this.”

USACE Response:

The address provided, 6401 Northwood Cove, Olive Branch MS 38654, does lie within the study area; however, the proposed action would not directly benefit or impact this area. Camp Creek, which is nearby this address, does lie within a proposed project stream reach for ecosystem restoration. Camp Creek would be stabili ed and reforestation would occur adjacent to the stream to provide habitat.

You have indicated that you would like to receive further communications regarding this project, and you will be notified as to important dates as they are set.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

-----Original Message-----
From: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>

Sent: Friday, July 23, 2021 6:07 AM
To: JAMES GREER <ylwdog3@aol.com>; CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: RE: [Non-DoD Source] Drainage problem

Hello Mr. Greer,

Thank you for your comment and interest in the study. We are compiling all comments received, and will be incorporating them into the public record. Responses will be made available as soon as possible.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

-----Original Message-----
From: JAMES GREER <ylwdog3@aol.com>
Sent: Wednesday, July 7, 2021 3:50 PM
To: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: [Non-DoD Source] Drainage problem

I live at 6401 Northwood Cove, Olive Branch MS 38654. A very large drainage ditch creek runs behind my home. It has huge debris and erosion issues. At o e time DeSoto county put riprap on the bank and did work on it. Over the years rip rap fell into the ditch and trees have floated down Ali g with gravel and sand. How can we please get help with this.
Thank you
Diane greer

Sent from my iPhone

From:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA)
To:	CEMVM-DeSoto-Comments; barbara gatewood
Cc:	Carpenter Crowther, Andrea L CIV USARMY CEMVN (USA); Roberts, Jennifer C CIV USARMY CEMVN (USA)
Subject:	RE: [Non-DoD Source] Flooding North Desoto County Feasibility Study
Date:	Thursday, April 21, 2022 11:37:42 AM

Hello,

Thank you for your comments received in July 2021 regarding the draft Integrated Feasibility Report and Environmental Impact Statement (draft IFR-EIS) for the Memphis Metropolitan Stormwater, DeSoto County, Mississippi Feasibility Study. After our initial response to your comment, it was determined that significant changes to the proposed Tentatively Selected Plan would occur. Updates to the analysis of proposed features in the TSP indicated that the proposed features were no longer justified, and reformulation was required.

After reformulation, the Flood Risk Management (FRM) Tentatively Selected Plan (TSP) is the new NED plan which includes a levee-floodwall feature along with a nonstructural aggregation to reduce residual risks. A revised draft IFR-EIS is being prepared for release on 6 May 2022. Your comments along with this response will be included in the revised draft IFR-EIS. A public meeting, which has not yet been scheduled, will be held to inform the Public on the new TSP and allow another opportunity for comments. A public comment period will open on May 6, 2022 and end on June 20, 2022.

Your comment stated:

"My name is Barbara Gatewood. My address is 9530 College Road Olive Branch, MS 38654. My phone number is 662-655-9216. I have 11 acres in the city of Olive Branch. Recently, they broke ground on a new subdivision development directly across the street from my property. There is a culvert under College Road that drains onto my property and I think it eventually makes its way to CAMP CREEK. The culvert is not able to handle the amount of extra water from this development that has now been diverted to this culvert onto my property. The water has come over the road multiple times, my back acreage has become a swamp and my next door neighbors horse arena is being flooded and I am having to pick up about 200 feet of debris everytime we cut grass because it flows over the road. We have a pond in our front yard that has completely filled up with silt and is nothing but an ugly brown mudhole. College Road is a very busy road now and this is very dangerous if someone were to hit the water and hydroplane out of control."

USACE Response:

The address provided, 9530 College Road Olive Branch, MS 38654, does lie within the study area; however, the proposed action would not directly benefit or impact this area. Camp and Lick Creeks, which are nearby this address, do lie within a proposed project stream reach for ecosystem restoration. Camp and Lick Creeks would be stabilized and reforestation would occur adjacent to the stream to provide habitat.

You have indicated that you would like to receive further communications regarding this project, and you will be notified as to important dates as they are set.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

From: CEMVM-DeSoto-Comments
Sent: Friday, July 23, 2021 6:07 AM
To: barbara gatewood <barbaragatewood3@gmail.com>
Subject: RE: [Non-DoD Source] Flooding North Desoto County Feasibility Study

Hello Ms. Gatewood,

Thank you for your comment and interest in the study. We are compiling all comments received, and will be incorporating them into the public record. Responses will be made available as soon as possible.

Thank you,
Andrea L. Carpenter
Biologist
USACE, Regional Planning and Environment Division South
167 N. Main St., Rm. B-202
Memphis, TN 38103
Phone: 901-544-0817
Fax: 901-544-3955
Email: Andrea.L.Carpenter@usace.army.mil

From: barbara gatewood <barbaragatewood3@gmail.com>
Sent: Thursday, June 24, 2021 5:22 AM
To: CEMVM-DeSoto-Comments <CEMVM-DeSoto-Comments@usace.army.mil>
Subject: [Non-DoD Source] Flooding North Desoto County Feasibility Study

My name is Barbara Gatewood. My address is 9530 College Road Olive Branch, MS 38654. My phone number is 662-655-9216.

I have 11 acres in the city of Olive Branch.

Recently, they broke ground on a new subdivision development directly across the street from my property.

There is a culvert under College Road that drains onto my property and I think it eventually makes its way to CAMP CREEK.

The culvert is not able to handle the amount of extra water from this development that has now been diverted to this culvert onto my property.

The water has come over the road multiple times, my back acreage has become a swamp and my next door neighbors horse arena is being flooded and I am having to pick up about 200 feet of debris everytime we cut grass because it flows over the road.

We have a pond in our front yard that has completely filled up with silt and is nothing but an ugly brown mudhole.

College Road is a very busy road now and this is very dangerous if someone were to hit the

water and hydroplane out of control.

We desperately need your assistance.

Thank you.