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Amos Bayou, Canal No. 43, Cypress Creek-Headwaters Boeuf River, and Oak Log Bayou-Cypress Bayou Watersheds NRCS Watershed Program Environmental Assessment



For More Information Contact:

Amanda J. Mathis
Federal Building, Room 3416
700 West Capitol Avenue
Little Rock, Arkansas 72201
amanda.mathis@usda.gov
(501) 301-3100

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PROPOSAL INFORMATION

General Information

Proposal Name: Amos Bayou, Canal No. 43, Cypress Creek-Headwaters Boeuf River, and Oak Log Bayou-Cypress Bayou Watersheds NRCS Watershed Program

Proposal Tracking #: NRCS WFPO ID: OPR.NW00.05.7004 CEQ ID: EAXX-005-53-000-1726840388

Proponent Name: City of Dumas Arkansas (Sponsoring Local Organization)

Signing Authority: State Conservationist, Natural Resources Conservation Service – Arkansas

Responsible Official: Amanda J. Mathis

Unit: NRCS Arkansas State Office

Proposal Webpage: <https://www.abmawatershedproject.com/projects/city-of-dumas> & <https://www.nrcs.usda.gov/state-offices/arkansas>

General Location of Proposal: The proposed action is located within the Cypress Creek–Headwaters Boeuf River, Amos Bayou, Canal No. 43, and Oak Log Bayou–Cypress Bayou watersheds in southeast Arkansas, primarily within the incorporated communities of Dumas (Desha County) and Mitchellville (Desha County). Project activities would occur within and adjacent to existing drainage features including roadside ditches, channels, and associated tributaries. The project area lies within the Mississippi Alluvial Plain and is characterized by low-lying, flat terrain with predominantly agricultural land use and developed residential areas.

Purpose and Need: Why do we need to act?

Purpose

The purpose of the proposed action is to provide flood damage reduction within the project area, including the communities of Dumas and Mitchellville, through the year 2077. The proposed action is authorized under Public Law 83-566, Watershed Protection and Flood Prevention Act, and is intended to reduce flood-related risks to public safety, residential and commercial structures, agricultural lands, roads, and other public infrastructure during major storm events.

Need

Flooding is a recurring and well-documented issue within the project area due to flat topography, poorly drained soils, limited drainage capacity, and inadequate existing infrastructure.

Existing drainage systems are frequently overwhelmed during moderate and major rainfall events, resulting in:

- Inundation of homes, businesses, and roadways
- Flooding of agricultural lands
- Damage to public infrastructure
- Disruptions to transportation and emergency access

Under existing conditions, multiple neighborhoods within Dumas and portions of Mitchellville experience flooding during 10-year and 100-year storm events, with some structures affected at or above first-floor elevation. Standing water may persist for several days following storm events, increasing damage and limiting access. Without additional action, these conditions are expected to continue and may worsen under projected increases in storm intensity.

The desired condition is a watershed with improved capacity to convey and manage stormwater during major rainfall events, resulting in reduced flood damage and increased resilience of community infrastructure and land uses. Action is needed at this time to address ongoing flood damage, respond to local sponsor and community concerns, and implement practicable measures consistent with NRCS authority and watershed planning objectives.

Proposed Action: What are we proposing to do?

The proposed action consists of coordinated structural and nonstructural flood-damage-reduction measures within the communities of Dumas and Mitchellville, including dredging, widening, and extending existing channels and drainage ditches; improvements to roadside ditch systems and overall drainage conveyance; and construction of a detention pond to provide stormwater storage and improve hydraulic performance during storm events. The proposed action also includes nonstructural measures such as dry floodproofing of residential structures to improve flood preparedness and community resilience.

The design criteria for the proposed action include compliance with NRCS engineering standards, achievement of hydrologic and hydraulic performance criteria for the 1-percent annual exceedance probability (AEP) event, incorporation of best management practices to avoid and minimize environmental impacts, and implementation consistent with applicable federal, state, and local permitting requirements and long-term operation and maintenance responsibilities.

The proposed action reflects the Preferred Alternative (Alternative 6) identified in the Watershed Plan–Environmental Assessment and was determined to provide the greatest reduction in flood damages while remaining consistent with NRCS planning criteria, technical feasibility, and economic efficiency.

Alternatives to the Proposed Action: Are there other ways to meet the purpose and need?

A range of structural, nonstructural, and combined structural and nonstructural action alternatives were developed and evaluated to address flooding within the project area. These alternatives included a No Action Alternative representing continued existing conditions; multiple structural alternatives focused on improvements to individual drainage systems and areas of frequent flooding within Dumas and Mitchellville; and nonstructural alternatives emphasizing floodproofing of structures and voluntary property acquisition.

The structural alternatives consisted of various combinations of channel dredging, ditch widening and extension, roadside drainage improvements, and detention features designed to improve watershed conveyance and reduce flood depths. These alternatives varied in scale and geographic focus, with some addressing localized problem areas and others integrating measures across multiple drainage basins. Nonstructural alternatives included dry floodproofing of structures vulnerable to repeated inundation and property acquisition options for structures located within areas of high flood risk.

Each action alternative was evaluated for its ability to reduce flood damage, improve public safety, protect infrastructure, and function within the physical and hydrologic constraints of the watershed, while also minimizing adverse environmental effects and maintaining consistency with Public Law 83-566 and other applicable regulatory requirements. Economic performance, including benefit-cost relationships and overall project efficiency, was also considered as part of the evaluation.

No Action Alternative

The cities of Dumas and Mitchellville do not have planned watershed rehabilitation projects. Under these conditions, the No Action Alternative represents the same scenario as existing conditions. Although this alternative would not meet the project's purpose and need, it is required under NEPA.

The No Action Alternative assumes no federal investment in the watershed. The Sponsor would not implement federally supported flood mitigation measures and would instead continue routine operations and maintenance activities as resources allow.

At present, there are no planned flood mitigation projects in the watershed, and no future land use projections are available for Dumas or Mitchellville. Therefore, this alternative assumes existing conditions persist. The Sponsor may continue basic maintenance activities such as clearing debris from drainage ditches, repairing culverts, and maintaining existing stormwater infrastructure to the extent feasible.

This alternative serves as the baseline for evaluating the effectiveness of all action alternatives, consistent with 40 CFR § 1502.13 and NRCS NEPA policy (NWPM 501.12B).

Alternative 1 (South Dumas)

Dumas is the most vulnerable community within the planning area, with a Social Vulnerability Index (SVI) ranging from 0.881 to 0.972. The community is more urbanized and developed than surrounding areas. Flooding is primarily driven by intense rainfall, exacerbated by limited capacity and inefficient flow distribution in the south ditch.

The south ditch begins north of Dumas Reed Elementary School, extends east crossing S Main Street, Court Street, Puryear Street, and Cambridge Place, then turns south parallel to Highway 65 before continuing east to Canal No. 19. During a 1% AEP event, maximum water depth reaches 2.8 feet (165.06 feet NAVD88).

This alternative improves drainage capacity through ditch widening (1–8 feet) and deepening (1–4 feet), complemented by roadside ditch improvements and an upstream detention pond.

Key Components:

- Dredging and widening ~3.3 miles of the south ditch
- Concrete lining ~0.38 miles (S Main Street to Cambridge Place)
- Concrete lining ~0.12 miles along Industrial Road
- Dual 10 ft × 3 ft reinforced concrete culverts at Court, Pickens, Puryear, and Cambridge Place
- ~6.2 miles of roadside ditch improvements
- One detention pond (~15 acre-feet capacity)
- Dry floodproofing of 6 structures (~25,407 sq ft)

The detention pond (5.5 feet deep, 3H:1V slopes) may be located on private land. It is designed to capture approximately 15 acre-feet of offsite runoff, reducing downstream flooding along S Main Street.

Evaluation Against Completeness, Effectiveness, Efficiency, and Acceptability

Alternative 1 provides direct flood mitigation to 18 structures in Dumas that are home to 72 people. The average SVI of the served community is 0.927. Project implementation also benefits 0.9 miles of roadway and nine acres of farmland.

Alternative 2 (North and West Dumas)

This alternative addresses three residential areas in north and west Dumas. Flooding is driven by rainfall and limited capacity in Ditch No. 6 and Ditch No. 5, compounded by ~75 acre-feet of offsite flow entering Ditch No. 6.

During a 1% AEP event, maximum water depth reaches 1.8 feet (163.45 feet NAVD88).

Key Components:

- Widening ~1.83 miles of Ditch No. 6
- Widening ~2.61 miles of Ditch No. 5
- ~8.26 miles of roadside ditch improvements
- One detention pond (~113.3 acre-feet capacity)
- Dry floodproofing of 17 structures (~51,908 sq ft)

The detention pond (6 feet deep) may be located on private agricultural land west of Highway 54. Currently, approximately 113 acre-feet of offsite volume flows toward Ditch No. 6, impacting downstream roads and structures along N Main St. The proposed detention pond will capture and detain most of the flow, preventing increased flooding along N Main St.

Evaluation Against Completeness, Effectiveness, Efficiency, and Acceptability

Alternative 2 provides direct flood mitigation to 26 structures in Dumas that are home to 99 people. The average SVI of the served community is 0.919. Project implementation also benefits 159 acres of farmland.

Alternative 3 (East Dumas)

This alternative addresses flooding east of Highway 65. Flooding results from limited ditch capacity and ~23 acre-feet of offsite flow.

During a 1% AEP event, water depths reach 2.35 feet (160.96 feet NAVD88).

Key Components:

- Widening ~1.33 miles of the east ditch
- Reinforced concrete culverts (3×3 ft, 7×4 ft, 7×5 ft)
- ~9.3 miles of roadside ditch improvements
- One detention pond (~7 acre-feet capacity)
- Dry floodproofing of 27 structures (~71,039 sq ft)

The detention pond (4.7 feet deep) may be located on private land near E Choctaw Street.

Evaluation Against Completeness, Effectiveness, Efficiency, and Acceptability

Alternative 3 directly mitigates flood risk for 70 structures and 210 residents. The average SVI of the served community is 0.881. Moreover, the project implementation benefits 0.72 miles of roadway and 30 acres of farmland.

Alternative 4 (North Mitchellville)

This alternative addresses flooding north of Emily Bowen Street. Flooding is caused by limited roadside ditch capacity.

Key Components:

~3.11 miles of roadside ditch improvements

All ditches function as a single hydraulic system draining toward Highway 65.

Evaluation Against Completeness, Effectiveness, Efficiency, and Acceptability

Alternative 4 reduces flooding depths for 32 people and 16 structures. The population served has an SVI of 0.881. Moreover, the project implementation benefits 0.03 miles of roadway and 43 acres of farmland.

Alternative 5 (South Mitchellville)

This alternative addresses flooding south of Main Street, driven by inadequate ditch capacity.

Key Components:

~4.0 miles of roadside ditch improvements

For this alternative, all ditches are hydraulically interconnected.

Evaluation Against Completeness, Effectiveness, Efficiency, and Acceptability

Alternative 5 provides direct flood mitigation to 14 structures in Mitchellville, which are home to 40 people. The average SVI of the community served is 0.881.

Alternative 6 (Dumas and Mitchellville)

Alternative 6 combines the best performing alternatives from the city of Dumas and Mitchellville, i.e. Alternative 3 and Alternative 4. This alternative addresses multiple flooding issues in both cities and upgrades community resilience. The alternative has the following components as listed below.

Key Components in Dumas:

- Dredging and widening approximately 1.33 miles of the east ditch,
- 3'x3' reinforced concrete culvert along the east ditch and E Choctaw St,
- 7'x4' reinforced concrete culvert along the east ditch and E Waterman St,
- 7'x5' reinforced concrete culvert along the east ditch and E Bowles St,
- Widening and creating approximately 9.3 miles of roadside ditches to increase the area's limited capacity,
- One detention pond is proposed, which will provide approximately seven acre-feet of maximum flood volume stormwater detention capacity,
- Dry floodproofing of 27 structures having approximately 71,039 square feet of structure areas to increase community resilience.

Key Components in Mitchellville:

- Widening and creating approximately 3.11 miles of roadside ditches to increase the area's limited capacity,
- The current ditches in this area lack sufficient capacity, causing water to remain stagnant. Ditches around residential neighborhoods will increase drainage capacity and drain toward the ditch near Outer Drive and Highway 65, therefore reducing flooding depth around the surrounding area.

Evaluation Against Completeness, Effectiveness, Efficiency, and Acceptability

Alternative 6 directly mitigates flood risk for 86 structures and 242 residents. The average SVI of the served community is 0.881. Moreover, the project implementation benefits 0.75 miles of roadway and 73 acres of farmland.

Alternative 7 and Alternative 8

Additionally, two standalone nonstructural alternatives are proposed that involve voluntary buyouts or relocation of structures. For this analysis, frequently flooded structures were evaluated. To identify these structures, model results from the 10% and 1% AEP events, corresponding to the 10-year and 100-year flood events, were reviewed. These two standalone alternatives are identified as Alternative 7 and Alternative 8, respectively.

Maximum water elevations were derived from these model results at each National Structure Inventory (NSI) data point within the city limits of Dumas and Mitchellville. The NSI database provides the First Floor Elevation (FFE) for each structure. By comparing the model-derived water elevations with the FFE data, the water height above each structure's FFE was calculated. Structures with a positive water depth above the FFE during either the 10-year or 100-year events were identified as candidates for potential voluntary buyouts or relocation.

Alternatives Considered but Not Analyzed in Detail

During planning and NEPA review, a range of structural and nonstructural alternatives were considered to address flooding within the Amos Bayou, Canal No. 43, Cypress Creek–Headwaters Boeuf River, and Oak Log Bayou–Cypress Bayou watersheds.

Multiple alternatives were initially developed to address flooding issues within the communities of Dumas and Mitchellville. These alternatives included various combinations of channel improvements, drainage system enhancements, detention features, and nonstructural measures. Several alternatives were considered but not analyzed in detail due to limitations related to effectiveness, constructability, cost, or the inability to adequately address identified flooding conditions. Alternatives that focused on isolated drainage improvements or single-component measures were determined to be less effective because they did not provide sufficient system-wide reduction in flood depths and duration. Similarly, alternatives requiring extensive modifications or large-scale detention features were determined to be less practicable due to increased costs, greater land requirements, and potential impacts to agricultural lands and adjacent resources.

Stand-alone nonstructural alternatives, including floodproofing or property acquisition without accompanying drainage improvements, were also not carried forward for detailed analysis because they would not address underlying drainage deficiencies or flooding affecting roads, infrastructure, and agricultural lands.

INTERDISCIPLINARY PROPOSAL SCREENING

Given the nature of the proposal, the responsible official is requesting documentation to demonstrate compliance with the following legal and regulatory considerations in addition to NEPA:

- ☒ Endangered Species Act (ESA)
- ☒ National Historic Preservation Act (NHPA)
- ☒ Tribal Consultation (EO 13175)
- ☒ Clean Air Act (CAA)
- ☒ Clean Water Act (CWA)
- ☒ Pertinent Executive Orders

Special Management Areas:

- ☐ Coastal Zone Management Areas
- ☐ Conservation Easements
- ☐ Coral Reefs
- ☐ Inventoried Roadless
- ☐ Marine Sanctuaries
- ☐ National Recreation Areas
- ☐ National Scenic & Historic Trails
- ☐ Research or Experimental Areas
- ☐ Wild & Scenic River Corridors
- ☐ Wilderness
- ☐ Other: [specify area type](#)

Scope of Analysis

The following describes how the agency drew a reasonable and manageable line relating to its consideration of environmental effects from the proposed action (and action alternatives, if any) that extend outside the geographical territory of the proposal or might materialize later in time.

The scope of analysis for this Environmental Assessment was defined to focus on environmental effects reasonably foreseeable from implementation of the proposed action and action alternatives within the Cypress Creek–Headwaters Boeuf River, Amos Bayou, Canal No. 43, and Oak Log Bayou–Cypress Bayou watersheds, with a primary focus on the communities of Dumas and Mitchellville and their associated drainage systems. The primary geographic boundary includes areas where construction, land acquisition, and flood-damage-reduction measures would occur, as well as downstream waters and connecting channels that could experience changes in hydrology as a result of improved conveyance and stormwater storage. Potential downstream effects were

evaluated qualitatively using watershed-scale hydrologic and hydraulic modeling to confirm that the proposed action would not increase flood risk or cause adverse effects outside of the project area. Effects from actions or developments outside NRCS authority, including independent third-party projects or future land-use changes, were not analyzed in detail because they are speculative and not necessary for reasoned decision-making.

The temporal scope of analysis includes both short-term construction effects and long-term operational effects over the evaluated project life of approximately 50 years, consistent with NRCS watershed planning guidance. Short-term effects such as soil disturbance, turbidity, and noise were considered during construction, while long-term effects such as improved drainage capacity, reduced flood damages, and changes in maintenance conditions were evaluated over the operational life of the project. Effects that could occur beyond the evaluated life of the project or that depend on uncertain future conditions were not analyzed in detail due to uncertainty and limited relevance to the decision-making process. Based on these considerations, NRCS determined that the spatial and temporal boundaries used in this Environmental Assessment provide a reasonable and manageable basis for evaluating the environmental effects of the proposed action and alternatives.

Agencies and Persons Consulted

Given the nature of the proposal, the responsible official consulted the following agencies, tribes, and persons during development and analysis of the proposal:

Agencies

U.S. Army Corps of Engineers, Vicksburg District Planning Division, Regulatory Functions/Permits

U.S. Department of the Interior, Fish and Wildlife Service

U.S. Department of the Interior, Office of Environmental Policy and Compliance

U.S. Environmental Protection Agency Region 6

Natural Resources Conservation Service

Arkansas Department of Agriculture, Natural Resources Division

Arkansas Department of Agriculture, Forestry Division

Arkansas Department of Environmental Quality

Arkansas Department of Health

Arkansas Department of Parks and Tourism

Arkansas Department of Transportation

Arkansas Department of Transportation, District 2

Arkansas Economic Development Commission

Arkansas Game and Fish Commission

Office of the Arkansas State Geologist

Arkansas Historic Preservation Program
Arkansas Natural Heritage Commission
Arkansas Pollution Control and Ecology Commission
Arkansas Waterways Commission

Local Government Agencies

City of Dumas
City of Mitchellville

Native American Tribes

Absentee Shawnee Tribe of Indians of Oklahoma
Alabama-Quassarte Tribal Town
Caddo Nation of Oklahoma
Cherokee Nation
The Chickasaw Nation
The Choctaw Nation of Oklahoma
Coushatta Tribe of Louisiana
Delaware Nation, Oklahoma
Eastern Shawnee Tribe of Oklahoma
Jena Band of Choctaw Indians
Kialegee Tribal Town
Mississippi Band of Choctaw Indians
The Muscogee (Creek) Nation
The Osage Nation
Quapaw Nation
The Seminole Nation of Oklahoma
Shawnee Tribe
Thlopthlocco Tribal Town
Tunica-Biloxi Indian Tribe
United Keetoowah Band of Cherokee Indians in Oklahoma
Wichita and Affiliated Tribes (Wichita, Keechi, Waco, & Tawakonie), Oklahoma

Individuals

Desha County Judge

Table 1: Applicable proposal record documentation to support agencies/persons consulted

Documentation Type	File Name (if applicable/needed)
Watershed Plan – Environmental Assessment	Final Dumas Watershed Plan–Environmental Assessment (Amos Bayou, Canal No. 43, Cypress Creek–Headwaters Boeuf River, and Oak Log Bayou–Cypress Bayou Watersheds)
Agency Consultation and Coordination Summary	Included in Watershed Plan–EA, Sections 1.6, 3.2, and 7.0
Endangered Species Act Coordination (USFWS)	Included in Watershed Plan–EA, Section 7.0 and Appendix A
Cultural Resources and Tribal Consultation	Included in Watershed Plan–EA, Section 3.2.13 and Appendix A
Programmatic Agreement (NHPA Section 106)	Included in Appendix A of the Watershed Plan–EA
Public and Local Government Coordination	Documented throughout Watershed Plan–EA (Chapters 1, 2, and 6)

Substantive Issues Considered for Analysis

Based on agency scoping, technical studies, and coordination documented in the Watershed Plan–Environmental Assessment, NRCS identified the following substantive issues for analysis. These issues were selected because they are directly related to the purpose and need for flood damage reduction within the project area and may be affected by implementation of the proposed action or action alternatives.

Floodplain management and hydrology

Flooding of residential structures, roadways, and agricultural lands is the primary issue driving the proposed action. Analysis focuses on changes to flood depth, duration, extent, and drainage conveyance within the Cypress Creek–Headwaters Boeuf River, Amos Bayou, Canal No. 43, and Oak Log Bayou–Cypress Bayou watersheds. The evaluation considers how proposed improvements to channels, ditches, and detention capacity would alter hydrologic conditions and reduce flood risk within Dumas and Mitchellville.

Water resources, waters of the United States, and wetlands

The proposed action involves work within and adjacent to streams, drainage ditches, and associated wetlands. Analysis considers both short-term and long-term effects to surface water resources, including potential changes to hydrology, water quality, and aquatic function. The evaluation also addresses potential impacts to wetlands and other jurisdictional waters, as well as compliance with applicable Clean Water Act requirements.

Soils, erosion, and sedimentation

The project area is characterized by flat terrain and poorly drained soils that are susceptible to erosion and sedimentation under existing conditions. The analysis evaluates soil disturbance associated with construction, erosion potential, sediment transport, and the effectiveness of best management practices in minimizing short-term impacts and maintaining long-term channel stability.

Prime farmland and land use

Land use within the project area is predominantly agricultural, with interspersed residential development. The analysis evaluates potential temporary and permanent conversion of farmland, right-of-way acquisition, and consistency with the Farmland Protection Policy Act, as well as longer-term land use effects associated with improved drainage and reduced flooding.

Biological resources

Biological resources within the project area include riparian corridors, wetlands, managed agricultural lands, and associated wildlife habitat. The analysis considers potential short-term disturbance to vegetation and habitat during construction, as well as longer-term changes in habitat conditions resulting from improved drainage and flood reduction measures. Federally listed and other protected species are addressed in accordance with the Endangered Species Act.

Cultural resources and Tribal interests

Cultural resources are considered due to the potential for previously recorded or undiscovered archaeological sites within areas subject to ground disturbance. Analysis is conducted in coordination with the Arkansas State Historic Preservation Office and federally recognized Tribes and is addressed through compliance with Section 106 of the NHPA, including implementation of a Programmatic Agreement (PA) to guide identification and evaluation prior to construction.

Public health and safety

Flooding within the project area presents risks to public safety, including restricted access to roads, residences, and emergency services during storm events. The analysis evaluates how the proposed action would reduce these risks by improving drainage capacity, reducing flood depths and duration, and increasing overall community resilience to future storm events.

Issues Considered but Dismissed from Detailed Analysis

During scoping and review of existing conditions documented in the Watershed Plan–Environmental Assessment, NRCS considered a range of potential issues. The following issues were reviewed but dismissed from detailed analysis because they were not found to be substantive or were determined to have no potential for meaningful environmental effects based on the nature of the proposed action, existing conditions, or applicable regulatory frameworks.

Air quality

The project area is located in an attainment area for all National Ambient Air Quality Standards. Construction activities would result in only short-term, localized emissions from equipment and vehicles, which would not result in measurable or long-term impacts to air quality. Accordingly, air quality was dismissed from detailed analysis.

Sole source aquifers and groundwater resources

The proposed action involves surface drainage improvements and does not include groundwater withdrawal, recharge alteration, or activities with the potential to substantially affect groundwater quantity or quality. Therefore, groundwater resources were not considered further.

Coastal zone management

The project area is located within inland portions of southeast Arkansas and is not within a designated coastal zone management area. As a result, coastal zone resources are not applicable and were dismissed from analysis.

Wild and scenic rivers

No rivers or streams within or adjacent to the project area are designated as components of the National Wild and Scenic Rivers System. The proposed action would not affect designated or eligible wild and scenic rivers, and this issue was dismissed from further consideration.

Coral reefs, essential fish habitat, and marine resources

The project area is entirely inland and does not include marine or coastal habitats. Coral reefs, essential fish habitat, and other marine resources are not present and were dismissed from analysis.

Invasive species

The proposed action would primarily occur within previously disturbed or managed areas such as existing drainage channels, roadside ditches, and developed or agricultural lands. Standard construction practices and site restoration measures would minimize the potential for introduction or spread of invasive species. Therefore, invasive species were dismissed from detailed analysis.

Scenic or visual resources

The project area consists primarily of agricultural lands, developed areas, and existing drainage infrastructure. No designated scenic resources or visually sensitive landscapes were identified. Project activities would occur within existing disturbed corridors and would not result in substantial changes to visual character; therefore, this issue was dismissed.

Noise

Construction-related noise would be temporary, localized, and limited to daytime hours. No sensitive receptors requiring detailed analysis were identified, and no long-term operational noise impacts are expected. Accordingly, noise was dismissed from detailed analysis.

ENVIRONMENTAL REVIEW & CONSULTATION

The following documents compliance with the National Environmental Policy Act (NEPA) and other relevant environmental laws, executive orders, and regulations.

NEPA: Consideration of Reasonably Foreseeable Impacts

Potentially Affected Environment

The proposed action is located within the Cypress Creek–Headwaters Boeuf River, Amos Bayou, Canal No. 43, and Oak Log Bayou–Cypress Bayou watersheds in southeast Arkansas and includes portions of Desha County. Activities would primarily affect the incorporated communities of Dumas and Mitchellville. The project area lies within the Mississippi Alluvial Plain and is characterized by flat, low-lying topography, poorly drained soils, and limited natural relief. Land use within the project area is predominantly agricultural, with row crop production representing the primary land cover, along with developed residential areas, transportation infrastructure, drainage systems, and scattered wetlands and wooded riparian corridors.

Physical setting and water resources

The affected environment includes surface waters associated with Cypress Creek, Amos Bayou, Canal No. 43, Oak Log Bayou, and related tributaries, as well as constructed drainage features such as roadside ditches and channels. Portions of the project area are located within mapped floodplains and experience recurring inundation during storm events. Soils are typically fine-grained and poorly drained, contributing to diminished infiltration, increased runoff, and sedimentation within drainage systems. Wetlands and low-lying areas are present throughout the watershed and contribute to water storage, conveyance, and ecological functions.

Biological resources

Biological resources within the project area include agricultural lands, riparian corridors, wetlands, and limited wooded areas that provide habitat for common fish and wildlife species of the region. Federally listed and other protected species may occur within or near suitable habitat in the project area. Existing conditions are influenced by agricultural land use and modified drainage systems. Project activities have the potential to result in localized disturbance to vegetation and habitat during construction.

Cultural resources

Cultural resources may be present within areas subject to ground disturbance, including archaeological sites and historic properties. These resources have been considered through records review and coordination conducted as part of the Watershed Plan–EA. Effects to cultural resources are addressed through compliance with Section 106 of the NHPA, including consultation with the Arkansas State Historic Preservation Office and federally recognized Tribes and implementation of a PA to guide identification, evaluation, and treatment prior to construction.

Social, land use, and economic conditions

Communities within the project area are small and largely rural, with economies that are closely tied to agriculture and local services. Flooding has historically affected homes, roadways, and agricultural lands, resulting in property damage, reduced accessibility, and disruptions to normal activities. Most land within the project area is privately owned. Implementation of the proposed action may require acquisition of easements or other real property interests. Long-term reductions in flood damages are expected to improve public safety, protect infrastructure, and support continued agricultural productivity and community stability.

Other ongoing or reasonably foreseeable actions

Other activities affecting environmental conditions within the watershed include ongoing agricultural operations, routine maintenance of drainage infrastructure by local entities, and implementation of state and federal water quality and floodplain management programs. Under existing conditions, these activities are expected to continue, and current flooding issues would persist in the absence of additional action. The proposed action and alternatives were evaluated within the context of these reasonably foreseeable conditions to assess potential cumulative and incremental effects.

Environmental Impacts

What are the reasonably foreseeable short- and long-term and adverse or beneficial effects of the proposed action and alternatives (if any) on the environment, to public health and safety, on economics, and to the quality of life of the American people?

The proposed action and action alternatives are intended to reduce flood damages within the project area through implementation of structural and nonstructural measures. Short-term adverse effects would primarily occur during construction and include localized soil disturbance, vegetation removal, and minor increases in turbidity within channels and drainage ditches. Temporary disruption to traffic, access, and nearby land use may also occur. These effects are expected to be limited in duration and extent and would be minimized through implementation of best management practices and adherence to applicable regulatory requirements. Long-term effects of the proposed action are expected to be primarily beneficial. Improvements to drainage conveyance and stormwater storage would reduce flood depth, duration, and frequency within affected areas. These changes would decrease damage to residential structures, roadways, and agricultural lands, thereby improving public safety and reducing economic losses associated with flooding. Long-term improvements in drainage efficiency are also expected to reduce erosion and sediment accumulation within channels, contributing to improved watershed function. Biological resources may experience temporary disturbance during construction but are expected to recover over time as areas stabilize and vegetation is reestablished. Overall, the proposed action would improve quality of life by increasing community resilience, improving access during storm events, and supporting continued economic activity within the project area.

What are the negative environmental impacts or consequences to public health and safety, economics, or the quality of life of the American people if the proposed action or alternatives (if any) are not implemented?

If the proposed action or action alternatives are not implemented, existing conditions would persist under the No Action Alternative. Flooding of homes, roads, and agricultural lands would continue during storm events, resulting in ongoing and long-term adverse effects to public safety, property, and local infrastructure. Recurrent inundation would continue to contribute to soil erosion, sedimentation of channels and ditches, and localized water quality concerns. Damage to private property, public facilities, and transportation networks would continue to impose economic burdens on residents, local governments, and emergency service providers.

Over time, the absence of flood-damage-reduction measures would negatively affect community resilience and quality of life by increasing risks to public health and safety, limiting reliable access during flood events, and discouraging long-term economic stability and investment. The No Action Alternative would avoid short-term construction impacts, but would allow chronic flood-related adverse effects to continue or worsen over the long term.

Will the proposed action or action alternatives (if any) make an irreversible or irretrievable commitment of Federal resources?

Yes. Implementation of the proposed action would result in irreversible or irretrievable commitments of federally protected natural resources and environmental functions. These commitments include permanent or long-term alterations to floodplains, wetlands, surface waters, soils, and associated aquatic and riparian habitats that are subject to federal regulatory oversight and protection. The addition of the proposed drainage improvements and stormwater management features would permanently alter certain physical characteristics of the watershed that cannot be fully returned to pre-project conditions.

How will the irreversible or irretrievable commitment of Federal resources, if any, contribute to a loss of long-term productivity for the human environment?

The irreversible or irretrievable commitment of federally regulated natural resources associated with the proposed action is not expected to result in a loss of long-term productivity for the human environment. Although certain floodplain and surface water features would be modified, these changes are intended to improve overall watershed function by enhancing drainage capacity, reducing erosion and sedimentation, and minimizing flood damage to agricultural land and infrastructure. As a result, the proposed action is expected to provide long-term benefits by supporting agricultural productivity, protecting infrastructure, and improving community resilience. Accordingly, the long-term benefits to the human environment outweigh the irreversible commitments required to implement the project.

Endangered Species Act

Based on the review and coordination with the U.S. Fish and Wildlife Service, no “may affect, likely to adversely affect” determinations were identified for any federally listed species or designated critical habitat. All species evaluations resulted in either “no effect” or “not likely to adversely affect” determinations.

Potential effects to listed species and their habitats were evaluated based on existing conditions, habitat presence, and the nature and extent of proposed activities. The proposed action was determined to result in only minor, temporary, and localized impacts associated with construction, which would be minimized through implementation of best management practices and design criteria incorporated into the project. These measures, along with the disturbed and managed nature of much of the project area, support the conclusion that adverse effects to federally listed species are not anticipated.

Table 2: Applicable proposal record documentation to support ESA compliance

Documentation Type	File Name (if applicable/needed)
Watershed Plan – Environmental Assessment	Final Dumas Watershed Plan–Environmental Assessment (May 2026)
Threatened and Endangered Species Review	Included in Watershed Plan–EA, Section 7.0
USFWS Coordination and Supporting Documentation	Included in Watershed Plan–EA, Section 7.0 and Appendix A

National Historic Preservation Act – Section 106 Review

The pertinent subject matter expert has reviewed the proposed action (and action alternatives, if any) and made the following determination:

Section 106 review meets compliance stipulations of a Programmatic Agreement (see comments section).

The proposed action is an undertaking subject to Section 106 of the NHPA (54 U.S.C. § 306108). Cultural resources considerations were addressed during development of the Watershed Plan–Environmental Assessment through records review and consultation with the Arkansas State Historic Preservation Office (SHPO) and federally recognized Tribes with ancestral interests in the project area.

Because the Watershed Plan–EA is programmatic in nature and final design and construction limits are not yet defined, NRCS executed a PA to provide for phased identification, evaluation, and treatment of historic properties prior to construction, consistent with 36 CFR 800.14(b)(2). The PA outlines procedures for cultural resources investigations, evaluation of National Register eligibility, assessment of effects, and implementation of avoidance, minimization, or mitigation measures prior to initiation of ground-disturbing activities.

Design criteria incorporated into the proposed action require that areas subject to disturbance be evaluated for cultural resources and that no construction occur until Section 106 requirements are satisfied in accordance with the PA. The PA also includes provisions for the treatment of unanticipated discoveries.

Table 3: Applicable proposal record documentation to support NHPA compliance

Documentation Type	File Name (if applicable/needed)
Watershed Plan – Environmental Assessment	Final Dumas Watershed Plan–Environmental Assessment (May 2026)
Cultural Resources and Tribal Consultation Summary	Included in Watershed Plan–EA, Section 3.2.13
Programmatic Agreement (NHPA Section 106)	Included in Appendix A of the Watershed Plan–EA

Consultation with Federally Recognized Tribes

Consultation with federally recognized tribes was conducted as follows:

NRCS initiated government-to-government consultation with federally recognized Tribes with ancestral interests in the project area in accordance with Section 106 of the NHPA and NRCS policy. Consultation was conducted during development of the Watershed Plan–Environmental Assessment for the Amos Bayou, Canal No. 43, Cypress Creek–Headwaters Boeuf River, and Oak Log Bayou–Cypress Bayou Watersheds and culminated in execution of a PA that provides for phased identification and evaluation of cultural resources prior to construction. No objections to the proposed planning-level action were received. Consultation will continue, as appropriate, during project-specific design and implementation phases pursuant to the PA.

Tribes Consulted:

Absentee Shawnee Tribe of Indians of Oklahoma, Alabama-Quassarte Tribal Town, Caddo Nation of Oklahoma, Cherokee Nation, The Chickasaw Nation, The Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Delaware Nation, Oklahoma, Eastern Shawnee Tribe of Oklahoma, Jena Band of Choctaw Indians, Kialegee Tribal Town, Mississippi Band of Choctaw Indians, The Muscogee (Creek) Nation, The Osage Nation, Quapaw Nation, The Seminole Nation of Oklahoma, Shawnee Tribe, Thlopthlocco Tribal Town, Tunica-Biloxi Indian Tribe, United Keetoowah Band of Cherokee Indians in Oklahoma, and Wichita and Affiliated Tribes (Wichita, Keechi, Waco, and Tawakonie).

Dates of Consultation:

Consultation initiated in 2024 and concluded at the planning level in 2025 with execution of a PA.

Outcome:

Consultation completed at the planning level; PA executed. No adverse effects were identified at this stage.

Table 4: Applicable proposal record documentation to support tribal consultation

Documentation Type	File Name (if applicable/needed)
Watershed Plan – Environmental Assessment	Final Dumas Watershed Plan–Environmental Assessment (May 2026)
Cultural Resources and Tribal Consultation Summary	Included in Watershed Plan–EA, Section 3.2.13
Programmatic Agreement (NHPA Section 106)	Included in Appendix A of the Watershed Plan–EA

Clean Water Act

The pertinent subject matter expert has reviewed the proposed action (and action alternatives, if any) and made the following determination:

Project may or will affect waters, including wetlands. Modifications/design criteria have been included to ensure compliance with CWA is met. All permits received and modifications/design features are clearly presented and documented in the analysis.

The proposed action may involve work in waters of the United States, including streams, drainage channels, and adjacent wetlands. Compliance with applicable Clean Water Act Sections (including Sections 404 and 401, as applicable) will be achieved through avoidance and minimization during design and through acquisition of required permits prior to construction. The Watershed Plan–EA identifies potential impacts at a planning level; project-specific permitting determinations will be completed during final design and implementation.

Table 5: Applicable proposal record documentation to support CWA compliance

Documentation Type	File Name (if applicable/needed)
Watershed Plan – Environmental Assessment	Final Dumas Watershed Plan–Environmental Assessment (May 2026)
Wetlands and Waters Analysis	Included in Watershed Plan–EA, Sections 3.2.6 and 5.3
Future Permits (Sections 404 and 401)	To be obtained during final design and implementation

Clean Air Act

The pertinent subject matter expert has reviewed the proposed action (and action alternatives, if any) and made the following determination:

The project will not result in permanent air emissions and no modifications or further coordination needs to occur to ensure compliance.

The proposed action would result in short-term, localized emissions associated with construction equipment and vehicles. These emissions would be temporary and minor and would not violate any federal or state ambient air quality standards. No long-term air quality impacts are anticipated. Therefore, the proposed action is in compliance with the Clean Air Act.

Table 6: Applicable proposal record documentation to support CAA compliance

Documentation Type	File Name (if applicable/needed)
Watershed Plan – Environmental Assessment	Final Dumas Watershed Plan–Environmental Assessment (May 2026)
Environmental Impacts Analysis	Included in Watershed Plan–EA, Section 5.0

Special Management Area Considerations

The pertinent subject matter expert has reviewed the proposed action (and action alternatives, if any) and made the following determinations based on special management area presence, proximity, or lack of:

No activities are proposed within or in the vicinity of Special Management Areas.

Table 7: Applicable proposal record documentation to support special management area compliance

Documentation Type	File Name (if applicable/needed)
Watershed Plan – Environmental Assessment	Final Dumas Watershed Plan–Environmental Assessment (May 2026)
Environmental Setting and Resource Evaluation	Included in Watershed Plan–EA, Chapter 3

Pertinent Executive Orders

The applicable subject matter experts have determined the proposed action (and action alternatives, if any) are in compliance with the following Executive Orders (EO), which were deemed pertinent based on the nature of the proposal:

EO 11988, Floodplain Management – requires determination of action occurring in a floodplain, using of Housing and Urban Development (HUD) floodplain maps or more detailed maps if available.

The proposed action and action alternatives involve activities within mapped floodplains in the Cypress Creek–Headwaters Boeuf River, Amos Bayou, Canal No. 43, and Oak Log Bayou–Cypress Bayou watersheds. Floodplain presence was evaluated using FEMA Flood Insurance Rate Maps (FIRMs), available Base Level Engineering data, and project-specific hydrologic and hydraulic modeling developed as part of the Watershed Plan–Environmental Assessment. The purpose of the proposed action is flood damage reduction, and project measures are specifically designed to reduce flood depths, flood duration, and risks to people and property consistent with Executive Order 11988. The proposed action avoids supporting inappropriate development in floodplains and incorporates structural and nonstructural measures that reduce long-term flood risk and improve floodplain function.

EO 11990, Protection of Wetlands – avoid actions within wetlands unless there are no practical alternatives, and the action includes all practicable means to minimize harm to wetlands.

Wetlands within the project area were identified using the National Wetlands Inventory and resource mapping conducted during watershed planning. Certain project components may occur within or adjacent to wetlands where avoidance is not practicable due to existing infrastructure, drainage constraints, and project purpose. The proposed action minimizes wetland impacts through design optimization, avoidance where feasible, and implementation of best management practices. Any unavoidable impacts to wetlands will be addressed through applicable permitting requirements and mitigation measures to minimize harm to wetland functions and values.

EO 13007, Indian Sacred Sites – avoid adversely affecting the physical integrity of these sites.

NRCS conducted consultation with federally recognized Tribes with ancestral interests in the project area as part of Section 106 compliance. No Indian sacred sites have been identified within the project area at the planning level. The PA developed for this project provides procedures for continued Tribal consultation and for addressing any unanticipated discoveries prior to construction. The proposed action includes measures to avoid adverse effects to cultural and sacred resources should such sites be identified during phased review.

EO 13112, Invasive Species – prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.

The proposed action is not expected to introduce invasive species. Construction and maintenance activities will incorporate standard NRCS practices to prevent the spread of invasive species, including equipment cleaning, use of appropriate vegetation stabilization and seeding practices, and site restoration following construction. These measures are expected to minimize the risk of invasive species introduction and associated ecological or economic impacts.

EO 13186, Migratory Birds – identify actions that may have a measurable negative effect on migratory bird populations.

Migratory bird species potentially present within the project area were considered during project development. Short-term disturbance to migratory birds may occur during construction due to noise and vegetation removal; however, impacts are expected to be localized and temporary. Where practicable, conservation measures such as timing considerations and minimization of vegetation clearing will be implemented to reduce effects on migratory birds. Long-term effects are expected to be neutral to beneficial due to improved drainage conditions and reduced flood disturbance.

EO 13443, Facilitation of Hunting Heritage and Wildlife Conservation – expand and enhance hunting opportunities.

The proposed action does not restrict access to lands traditionally available for hunting or wildlife-related recreation. In some cases, nonstructural measures and restored open space may provide opportunities to support wildlife habitat and conservation over the long term. The project is expected to support watershed function and habitat stability without adversely affecting hunting heritage or recreational access.

Table 8: Applicable proposal record documentation to support EO compliance

Documentation Type	File Name (if applicable/needed)
Watershed Plan – Environmental Assessment	Final Dumas Watershed Plan–Environmental Assessment (May 2026)
Floodplain Mapping and Hydrologic Analysis	Included in Watershed Plan–EA, Sections 3.2.5 and 5.3
Wetlands Identification and Impact Analysis	Included in Watershed Plan–EA, Sections 3.2.6 and 5.3

Documentation Type	File Name (if applicable/needed)
Cultural Resources and Tribal Consultation	Included in Watershed Plan–EA, Section 3.2.13 and Appendix A
Programmatic Agreement (NHPA Section 106)	Included in Appendix A of Watershed Plan–EA
Threatened and Endangered Species Review	Included in Watershed Plan–EA, Sections 3.2.8 and 7.0
Migratory Birds Evaluation	Included in Watershed Plan–EA, Section 3.2.9
Best Management Practices and Site Restoration Measures	Included throughout Watershed Plan–EA, Sections 5.0 and 6.0

Certifying Statement for EA Page Limit and Deadline

The Responsible Official certifies that this EA:

- ☒ Demonstrates the agency has thoroughly considered the factors mandated by NEPA;
- ☒ Represents the agency's good-faith effort to prioritize documentation of the substantive issues and most important considerations required by NEPA within the congressionally mandated page limits;
- ☒ Reflects the agency's expert judgment;
- ☒ Addressed briefly, or left unaddressed, any issues or considerations that were, in the agency's judgment, comparatively not of a substantive nature;
- ☒ Represents the agency's good-faith effort to fulfill NEPA's requirements within the Congressional timeline (or within the minimally extended timeline) and this effort is substantially complete; and
- ☒ Contains analysis that is adequate to inform and reasonably explain the responsible official's final decision regarding the proposed action or selected alternative.