U.S. DEPARTMENT OF AGRICULTURE

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NRCS WFPO Unique ID Number: OPR.NW00.05.7011

CEQ Unique ID Number: EAXX-005-53-000-1726840406

City of Wilmot Area, Arkansas Environmental Assessment



Looking southeast from the corner of School and Fourth Streets, Wilmot, Arkansas.

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PROPOSAL INFORMATION

General Information

Proposal Name: Draft Environmental Assessment for the City of Wilmot Area, Arkansas

NRCS WFPO Unique ID Number: OPR.NW00.05.7011

CEQ Unique ID Number: EAXX-005-53-000-1726840406

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

Responsible Official: Amanda J. Mathis

Sponsoring Local Organization: Cities of Wilmot and Parkdale

Unit: NRCS Arkansas State Office

Proposal Record Location: https://www.abmawatershedproject.com/projects/city-of-Wilmot & https://www.nrcs.usda.gov/state-offices/arkansas

General Location of Proposal:

Planning Area:

The Planning Area for the Project is located in Ashley County, Arkansas, surrounding the Cities of Wilmot and Parkdale, within the Overflow Creek–Bayou Bartholomew U.S. Geological Survey (USGS) Hydrologic Unit Code (HUC)-10 watershed (0804020508) and the Camp Bayou Canal HUC-12 watershed (080500010702). The Planning Area evaluated in the Plan-EA consists of the portions of these selected watersheds located within Ashley County, Arkansas, because all proposed Project activities and associated environmental effects occur within Arkansas. The Planning Area encompasses approximately 124,732 acres.

Table 1: Subwatersheds Within the City of Wilmot Area Watershed Project Planning Area:

Subwatersheds	10 and 12-Digit Hydrologic Unit Code (HUC)[1]	Latitude	Longitude	Subwatershed Size (Acres)	Portion of Subwatersheds Within Arkansas (Acres)
Overflow Creek-Bayou Bartholomew	0804020508	33.158193	-91.610956	102,901	98,247
Camp Bayou Canal	080500010702	33.040121	-91.544808	37,562	26,485
			Total	**140,463**	**124,732**

Selected Watersheds:

The selected Project watersheds for the Project are the Overflow Creek–Bayou Bartholomew USGS HUC-10 watershed (0804020508; 102,901 acres) and the Camp Bayou Canal HUC-12 watershed (080500010702; 37,562 acres). The combined area of

the selected watersheds is approximately 140,463 acres, of which approximately 124,732 acres comprise the Planning Area evaluated in the Plan-EA.

Study Area:

The Study Area includes five Subwatersheds within the Selected Watersheds that encompass the proposed works of improvement and areas benefitted/affected by the proposed works of improvement. The Study Area is approximately 659.4 ac, including 317.7, 163.8, 9.3, 115.4, and 53.2 ac within Subwatersheds 1–5, respectively. The Limits of Disturbance (LOD) is approximately 46.8 ac. The five subwatersheds, also referred to as the Project Sites throughout this Report, that encompass the Study Area include the following:

City of Wilmot Project Sites

- Site 1: City of Wilmot, Southside Stream Corridor
- Site 2: City of Wilmot, Central Drainage Area
- Site 3: City of Wilmot, Northside Drainage Area
- Site 4: City of Wilmot, Northwest Drainage Area

City of Parkdale Project Site

- Site 5: City of Parkdale, North Parkdale

Purpose and Need: Why do we need to act?

The Purpose of this Project is to reduce flood damages in the Cities of Wilmot and Parkdale, Arkansas, through implementation of the most cost-efficient level of flood protection over the 52-year planning horizon (2 years of implementation + 50 years of evaluated life). The Federally Authorized Purpose for the Project is Flood Prevention (Flood Damage Reduction).

Flooding occurs frequently within the Study Area, including in locations outside mapped FEMA regulatory floodplains. Observed flooding affects roads, residences, and businesses across six subwatersheds (Project Sites 1–5), resulting in repeated property damage and temporary loss of access during storm events. These conditions have been documented through stakeholder input and engineering analysis. Flooding has been observed during storm events smaller than the 100-year event, indicating that existing drainage infrastructure is insufficient to convey runoff under current conditions. The primary factors contributing to flooding include:

- Undersized and deteriorated drainage infrastructure, including culverts and roadside ditches;
- Historical watershed modifications, such as increased impervious area, channelization, and loss of wetlands and floodplain connectivity; and
- Inadequate system maintenance, reducing hydraulic capacity and performance.

As a result, floodwaters frequently overtop roadways and impact structures, causing economic damages, public safety concerns, and reduced community accessibility. Without action, these conditions are expected to persist or worsen due to ongoing land

use pressures and increasing precipitation intensity, resulting in continued flood damages and reduced community resiliency. See the Investigations and Analysis Report (IAR) in Appendix D of the Plan-EA for a detailed discussion of existing conditions and hydrologic and hydraulic modeling.

Proposed Action: What are we proposing to do?

The following measures would be implemented to reduce flooding in the five Project Sites within the Study Area in the Cities of Wilmot and Parkdale:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 ac.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 lf of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
- Install 19,929 lf of SMC in Wilmot and Parkdale, respectively, including a total of 13,089 lf of vegetated swale and 6,840 lf of NCD stream, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels.
- Decommission and remove 0.3 ac of small city streets and install 3,780 lf of alternate access roads or driveways.
- Buyout and remove 10 structures.

After the implementation of these planned works of improvement, 100-year, 24-hour storm events or smaller will be contained within the improved stormwater collection and conveyance system without flooding streets or residential or commercial structures. The basis of design for these improvements can be found in Appendix D of the Plan-EA.

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

Alternatives were formulated through a structured screening process consistent with recent planning guidance. An initial range of possible flood risk reduction measures, including non-structural options, nature-based solutions (NBS)-focused structural measures, and traditional-focused structural measures, were identified and combined into Project Site-specific and Study Area-wide Alternatives. These Alternatives were evaluated in a first screening against the Project Purpose and Need, Objectives, Constraints, and the PR&G required evaluation criteria (completeness, effectiveness, efficiency, and acceptability), followed by a second screening economic analysis of the alternatives carried forward. Seventeen Action Alternatives were considered, including six NBS-focused alternatives, six traditional-focused alternatives, and six non-structural-only alternatives. Three Alternatives were ultimately carried forward for detailed analysis:

- No Action/FWOFI Alternative

- Alternative 6A: Combined Sites NBS-Focused Drainage Improvements / Maximized Net Monetized Benefits (MNMB) Alternative
- Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements

The MNMB Alternative was identified by evaluating the net economic benefits of all practicable combinations of the five Project sites. This analysis identified Alternative 6A (NBS-focused for the full Study Area) as the MNMB Alternative, making the Preferred Alternative and the MNMB Alternative one and the same. Flood-damage-reduction benefits were conservatively estimated using the Expected Annual Damages (EAD) methodology and NRCS annualization method.

No Action/Future Without Federal Investment (FWOFI):

The Study Area would remain in its present condition. No flood risk reduction strategies would be implemented within the Planning Area. Structures, roads, and property within the Study Area would continue to experience flooding. The damages and inconveniences resulting from flooding would continue to affect residents in the City of Wilmot and City of Parkdale. Without the implementation of flood risk reduction measures, conditions in the watershed would likely continue to worsen.

Alternative 6A: Combined Sites NBS-Focused Drainage Improvements (Preferred Alternative) (MNMB Alternative):

Install onsite/local stormwater bioretention cells, upgrade stormwater collection/minor drainage components, and replace conveyance/major drainage components with SMCs (i.e. restored stream/geomorphic floodplain/riparian buffer inside a flood control channel coupled with geomorphic culverts or bridges) to prevent flood damage in the city for storms up to the 100-year, 24-hour event for the 50-year life of the Project.

The MNMB Alternative represents a reduced-scope alternative focused on implementing flood risk reduction measures only at the Project sites that demonstrated the Highest Net Monetized Benefits (NMB) during screening. The NMB analysis of all practical potential site combinations identified Alternative 6A (NBS-focused for the full Study Area) as the MNMB Alternative.

Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements:

Install onsite/local stormwater bioretention cells and wetlands, upgrade stormwater collection/ minor drainage components, and replace conveyance/major drainage components with a riprap-armored flood control channel coupled with geomorphic culverts or bridges to prevent flood damage in the city for storms up to the 100-year, 24-hour event for the 50-year life of the Project.

Alternatives Considered but Not Analyzed in Detail

An initial range of 17 preliminary alternatives were developed through the combination of site-specific measures across the five Project Areas within the Study Area. This formulation process resulted in 17 initial Alternatives, including a NBS-focused alternative for each Project Site (Alternatives 1A, 2A, 3A, 4A, and 5A) and one for the combined Study Area (Alternative 6A), a traditional-focused alternative for each of the five Project Sites (Alternatives 1B, 2B, 3B, 4B, and 5B) and one for the combined Study

Area (Alternative 6B), and a nonstructural-only alternative for each of the Project Sites (Alternatives 1C, 2C, 3C, 4C, and 5C). A nonstructural-only alternative for the entire Study Area was not carried forward because it was considered unreasonable because it would result in disproportionate and irreversible adverse socioeconomic effects relative to the incremental flood-damage-reduction benefit it would provide.

The first screening of the Alternatives evaluated each of the 17 preliminary alternatives against the Project Purpose and Need, Objectives, Constraints, and the PR&G required evaluation criteria (completeness, effectiveness, efficiency, and acceptability). None of the Nonstructural-Only Alternatives were carried forward for further consideration. Although each met the Purpose and Need, they did not meet PR&G Criterion 1 (Completeness) or PR&G Criterion 2 (Effectiveness): the Nonstructural-Only Alternative would acquire structures and parcels within the 100-year floodplain and decommission affected roads, but would not address the underlying undersized, obstructed, or damaged stormwater collection and conveyance infrastructure causing frequent flooding, including flooding from storm events smaller than the 5-year event that occurs outside the FEMA-regulated 100-year and 500-year floodplains. All of the NBS-Focused and Traditional-Focused Alternatives were carried forward for the second screening.

For the second screening, the 12 remaining alternatives (NBS-Focused 1A, 2A, 3A, 4A, 5A and 6A and Traditional-Focused 1B, 2B, 3B, 4B, 5B and 6B) were evaluated using an economic analysis to assess their effectiveness in reducing flood damages relative to costs. The detailed technical evaluation is documented in the IAR in Appendix D of the Plan-EA. Expected Annual Damages (EAD) were estimated for each alternative under future without-project and future with-project conditions using NRCS-recommended depth-damage relationships and hydrologic modeling outputs. The difference between these conditions represents the Annual Average Flood Damage Reduction Benefits (AAFDRB). Annual Ecosystem Services Benefits (AESB) were monetized using FEMA's Ecosystem Service Value Updates technical manual (FEMA, 2022) per-acre coefficients for Riparian Areas and Inland Wetlands. Consistent with OMB Circular A-94 §5(a), economic justification is based on discounted Net Monetized Benefits (NMB = benefits − costs) as the decision criterion; Benefit-Cost Ratios (BCRs) are reported in Appendix D for documentation and transparency but were not used as a decision criterion. Alternatives that did not demonstrate positive net benefits or were less cost-effective relative to other options were not carried forward, except as noted below. This analysis also informed the identification of the Maximum Net Monetized Benefits (MNMB) Alternative and supported selection of a reasonable range of alternatives for detailed evaluation.

After completing the first and second screenings, two alternatives were advanced for detailed evaluation in Section 5 of the Plan-EA: the Study Area–Wide NBS-Focused Alternative (6A)/MNMB Alternative and the Study Area–Wide Traditional-Focused Alternative (6B). Detailed results for all 12 Action Alternatives, in 2023 constant dollars annualized over the 50-year evaluated life, are presented in Appendix D, Attachment D, Tables 1–12, and summarized in Economic Tables 5 and 6 (Section 6.11, Tables 6-6 and 6-7; Appendix D, Tables D-19 and D-20). Each individual Project Site alternative (NBS-focused Alternatives 1A–5A and Traditional-focused Alternatives 1B–5B) was evaluated as a complete, reasonable alternative at the scale of its own Project Site

during the first screening, and each meets PR&G Criteria 1 through 4 at that scale (Plan-EA Tables 4-9 through 4-14). Consistent with the incremental-analysis requirements of NREH §611.0101, AAC and AAB were also calculated for each individual site alternative as part of the detailed economic evaluation (Appendix D, Table D-14).

Considered together with the Project's Purpose and Need, to reduce flood damages throughout the Study Area, encompassing all five interdependent Project Site subwatersheds in the Cities of Wilmot and Parkdale (Plan-EA Section 2.1), this record establishes that while each individual Project Site alternative is complete and effective at addressing flood damages within its own Site, none is complete at the Study Area scale the Purpose and Need requires. An alternative limited to a single Project Site, or to only select Project Sites, would leave flood damages documented at the remaining Sites unaddressed, regardless of how completely it addresses its own Site. For this reason, individual Project Site alternatives were not advanced as independent, decision-level alternatives for detailed evaluation in Section 5 of the Plan-EA; instead, their site-level results were combined through the incremental analysis in Table D-14 to identify the Study Area–wide alternatives evaluated in Section 5 of the Plan-EA.

This incremental analysis further confirms that each Project Site's inclusion in the combined alternatives is economically justified. For the NBS-Focused Alternative, the economic evaluation confirmed positive NMB for each of the five individual Project Site alternatives (1A–5A); no combination excluding any of the five Sites produced a higher NMB than the all-Sites combination, confirming that Alternative 6A, which incorporates all five Project Sites, is the MNMB Alternative. For the Traditional-Focused Alternative, the individual Project Site results were mixed: Project Site 3 (Alternative 3B) resulted in positive NMB, while the remaining individual Traditional-focused Sites (1B, 2B, 4B, 5B) resulted in negative NMB. Notwithstanding these negative individual results, all five Traditional-focused Sites were retained within the combined Alternative 6B, which was carried forward at the Sponsor's request to provide a comparative, Study Area–wide Traditional-Focused alternative in the Final Array, consistent with PR&G's requirement that the responsible federal official and SLO be afforded full visibility into the decision space.

Between the two Study Area–wide alternatives that match the full scope of the Purpose and Need, the economic evaluation demonstrates that Alternative 6A yields higher NMB than Alternative 6B. Alternative 6B is nonetheless retained in the Final Array notwithstanding its negative combined NMB, consistent with the principle that lesser economic efficiency alone is not a basis for exclusion.. Additional detail on the preliminary alternatives and screening results is provided in Section 4 of the full Plan-EA Report and the IAR in Appendix D of the Plan-EA.

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.

This EA was developed using the NRCS nine-step planning process, integrating NEPA requirements, PR&G guidance, and applicable Federal, State, and local regulations. The analysis considers both economic and environmental factors, including ecosystem services, to evaluate the full range of project benefits and effects. The scope of analysis includes a 52-year period (2-year implementation and 50-year project life) and evaluates potential impacts to natural and human resources within the Study Area. An ecosystem services framework was applied to identify and assess provisioning, regulating, supporting, and cultural benefits that may be affected by the Project. The analysis focuses on alternatives that meet the Project Purpose and Need while maximizing overall public benefits, including both monetized and non-monetized effects, consistent with NRCS Level II PR&G requirements. Resource evaluation and impact analysis are informed by interdisciplinary review, technical studies, and input from agencies, Tribes, and the public obtained through the scoping and planning process.

Agencies and Persons Consulted

Given the nature of the proposal, the responsible official consulted the following agencies, organizations, 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: Conway, Arkansas
- U.S. Department of the Interior, Office of Environmental Policy & Compliance
- U.S. Environmental Protection Agency
- U.S. Environmental Protection Agency, Region 6
- Natural Resources Conservation Service
- Department of Finance and Administration: State Clearinghouse for Agencies
- Arkansas Department of Agriculture: Forestry Division
- Arkansas Department of Agriculture: Natural Resources Division
- Arkansas Department of Environmental Quality
- Arkansas Department of Health
- Arkansas Department of Parks & Tourism
- Arkansas Department of Transportation
- Arkansas Economic Development Commission
- Arkansas Game & Fish Commission
- Office of the State Geologist
- Arkansas Historic Preservation Program
- Arkansas Natural Heritage Commission
- Arkansas Pollution Control and Ecology Commission
- Arkansas Waterways Commission
- U.S. Senator John Boozman
- U.S. Senator Tom Cotton
- U.S. Representative Rick Crawford
- State Senator Ben Gilmore
- State Representative Howard M. Beaty, Jr.
- Mayor Carolyn Harris of Wilmot

- Ashley County Judge Jim Hudson

Organizations/Businesses

Businesses were not directly consulted as a separate stakeholder group; however, they were provided the opportunity to participate in the public scoping process and subsequent public meetings, during which input was accepted from all interested parties.

Native American Tribes

The NRCS Arkansas State Office, Arkansas Historic Preservation Program (AHPP)/State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), and Federally Recognized Tribes executed a statewide Programmatic Agreement (PA) on August 4, 2025. The PA establishes procedures for NRCS Arkansas Section 106 compliance for all PL 83-566 watershed projects and identifies 21 Federally Recognized Tribes for ongoing statewide consultation:

- 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

Public outreach for the Project included two scoping meetings and additional stakeholder engagement throughout Project development. An initial public scoping meeting was held on August 8, 2023, followed by a formal scoping meeting on November 16, 2023, with a public comment period extending through December 18, 2023. Comments were received in person, by email, and by mail. Input from these efforts, including survey responses, helped identify flood-prone areas and informed development and refinement of Project alternatives. See Appendix A of the Plan-EA for the complete Scoping Report, which documents agency and public participation during the initial scoping period and summarizes comments received during the public scoping comment period.

Additional meetings were held to engage stakeholders as the Project progressed. An impacted landowner meeting on April 11, 2024, provided information on preliminary designs and right-of-way needs and allowed for property-specific coordination. A subsequent public meeting on July 17, 2024, presented the results of the alternatives analysis, including the Preferred Alternative and the MNMB Alternative, and gathered feedback used in preparation of the Draft Plan– Completed EA. Supporting documentation, including scoping materials and comment summaries, is maintained in the Project administrative record and incorporated by reference.

Table 2: Applicable proposal record documentation to support agencies/persons consulted

Documentation Type	File Name (if applicable/needed)
Scoping Report (including public meeting materials, surveys, and comment summaries)	Plan-EA Appendix A – Scoping Report
Agency scoping coordination and distribution list	Plan-EA Appendix A – Scoping Report
Public meeting materials (August 2023, November 2023)	Plan-EA Appendix A – Scoping Report
Impacted Landowner Meeting materials (April 11, 2024)	Project administrative record (NRCS Arkansas State Office)
Preferred Alternative Public Meeting materials (July 17, 2024)	Project administrative record (NRCS Arkansas State Office)
Agency consultation letters (Federal, State, local)	Plan-EA Appendix A – Scoping Report; Project administrative record
Tribal coordination and consultation records	Project administrative record (NRCS Arkansas State Office)
Section 106 Programmatic Agreement documentation	Plan-EA Appendix A
Cooperating agency coordination (USACE, USFWS)	Plan-EA Appendix A – Scoping Report; Project administrative record

Substantive Issues Considered for Analysis

The following substantive issues were identified during scoping and project planning and were carried forward for analysis due to their potential to influence decision-making or result in measurable environmental effects:

- **Soils and Prime Farmland:** Presence of highly erodible soils and NRCS-designated prime farmland, including potential for temporary disturbance and long-term conservation considerations.

- **Water Resources and Water Quality:** Existing erosion, sedimentation, and pollutant transport affect surface waters, wetlands, and downstream systems.
- **Waters of the United States (WOTUS) and Wetlands:** Potential impacts to jurisdictional waters and associated permitting requirements under the Clean Water Act.
- **Flood Risk and Floodplain Management:** Recurring flooding, infrastructure limitations, and impacts to residences, roadways, and public safety were primary drivers of the Project.
- **Regional Water Resource Plans:** Project's ability to help meet the goals of regional water resource plans.
- **Biological Resources:** Effects to fish, wildlife, riparian habitat, migratory birds, and potential habitat for federally listed species.
- **Invasive Species**: Presence of invasive species with potential to be spread or affected by construction activities.
- **Natural Areas, Riparian Areas, and Forest Resources**: Potential impacts to remaining natural habitats, riparian corridors, and forested areas.
- **Cultural Resources:** Presence of known historic properties and the need for compliance with Section 106 of the National Historic Preservation Act.
- **Local, Regional, and National Economy:** Impacts related to flood damage reduction, local economic stability, and Federal investment efficiency.
- **Public Health and Safety:** Risks associated with flooding, roadway access limitations, and exposure to contaminants in floodwaters.
- **Scenic Beauty**: Potential temporary and minor long-term changes to visual character of the landscape.
- **Parklands (including National Parks, Monuments, and Historical Sites):** Potential effects to local parks and protected recreational or historic sites.
- **Land Use and Property Impacts:** Acquisition of easements and structures, and changes in land use associated with drainage improvements and floodplain management.
- **Scoped Ecosystem Services of Concern:** Provisioning, Regulating, Supporting, and Cultural Services
- **Other Concerns – Groundwater:** The Planning Area is within an area designated as a Groundwater Study Area by the Arkansas Department of Agriculture
- **Cumulative Effects**
  Consideration of other past, present, and reasonably foreseeable actions within the Study Area.

These issues were determined to be substantive because these issues represent the primary factors influencing the evaluation of alternatives relative to their environmental impacts and the selection of a preferred alternative.

Issues Considered but Dismissed from Detailed Analysis

The following issues were considered during planning but dismissed from detailed analysis because they were determined to be not substantive, not present, or unlikely to result in measurable impacts:

- **Sole Source Aquifers:** There are no designated sole source aquifers within or adjacent to the Planning Area
- **Coastal Zone Management Areas:** The Planning Area is not within or near a designated coastal zone management area.
- **Coral Reefs:** No coral reefs are within or near the Planning Area.
- **Special Management Areas (e.g., National Parks, Wilderness Areas, Wild and Scenic Rivers):** No such designated areas are present within or adjacent to the Study Area.
- **Air Quality:** Impacts would be limited to short-term, localized construction emissions and would not result in exceedance of regulatory standards.
- **Essential Fish Habitat or other Ecologically Critical Areas:** There is no Essential Fish Habitat or other Ecologically Critical Areas present within or adjacent to the Planning Area.
- **Social Issues:** There are no significant social issues in the Planning Area that are of concern for the scope of Project activities. During public Scoping, no social issues or other areas of controversy were brought up regarding the Project.
- **Significant Scientific Resources:** There are no significant scientific resources in the Planning Area that could be affected by the Project.

These issues were dismissed because they would not influence the selection among alternatives or result in significant environmental consequences.

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 Study Area is located within the Cities of Wilmot and Parkdale, Arkansas which are characterized by modified drainage systems, intermittent and perennial waterways, and a mix of residential, commercial, agricultural, and vacant properties. Natural resources include intermittent and perennial streams, wetlands, floodplain areas, and fragmented riparian and forested habitats. Soils in the area are predominantly alluvial and include a high proportion of NRCS-designated prime farmland soils, although active agricultural use is limited within the project footprint.

Existing conditions are characterized by recurring flooding, channel erosion, degraded water quality, and limited stormwater infrastructure capacity. Many drainage features are channelized or function as roadside ditches, resulting in reduced ecological function and limited floodplain connectivity. Flooding occurs both within and outside mapped FEMA floodplains, affecting infrastructure and contributing to ongoing degradation of drainage systems and water resources.

Biological resources include riparian corridors, wetlands, and aquatic habitats that support common fish and wildlife species typical of rural and semi-urban environments, along with potential habitat for migratory birds. Cultural resources are present near portions of the Study Area and remain subject to ongoing NHPA Section 106 consultation. The local economy and public safety conditions are influenced by repeated flood damages to homes, infrastructure, and transportation routes.

The Study Area is also subject to limited ongoing or reasonably foreseeable actions, including past watershed projects, completed local improvements, and potential future development; however, these actions are not expected to substantially alter existing environmental conditions or contribute significantly to cumulative impacts. Overall, existing conditions are defined by persistent flood risk, constrained drainage capacity, and degraded ecological function, which collectively establish the baseline for evaluating Project alternatives.

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?

Overview of Effects by Alternative

No Action Alternative
Under the No Action Alternative, existing conditions would persist. Flooding, erosion, and water quality degradation would continue or worsen over time due to aging infrastructure and increased storm intensity. This would result in continued adverse effects to natural resources, public safety, and the local economy.

Proposed Action (Alternative 6A – Preferred Alternative and MNMB Alternative)

Short-Term Effects:
Construction would result in temporary disturbances, including vegetation clearing, soil disturbance, and localized impacts to water resources and wildlife habitat. These impacts would be minimized through implementation of best management practices (BMPs) and required permits.

Long-Term Effects (Beneficial):

- **Water Resources & Water Quality:** Improved through stormwater retention, filtration, and reduced erosion using NBS, stormwater conveyance features, and wetland enhancements.
- **Floodplains:** Significant reduction in flood risk and decreased extent of flooding in developed areas, with improved floodplain storage and function.

- **Biological Resources:** Restoration of riparian corridors and aquatic habitat, resulting in improved habitat quality and connectivity.
- **Soils & Farmland:** Minor temporary disturbance; no conversion of agricultural land; long-term reduction in erosion.
- **Public Health & Safety:** Reduced flood hazards, improved roadway access, and decreased exposure to contaminants.
- **Economics:** Reduced flood damages and long-term economic benefits to the community.
- **Aesthetics & Land Use:** Improved scenic conditions and localized land use changes due to easements and limited structure removal.

Overall, Alternative 6A would provide watershed-wide benefits and the greatest level of ecological and infrastructure improvement. Alternative 6A was also determined to be the most economically efficient project (MNMB Alternative).

Alternative 6B (Traditional Drainage Improvements)

Short-Term Effects:
Similar to Alternative 6A (temporary construction-related disturbances).

Long-Term Effects*:*

- Provides comparable flood risk reduction to Alternative 6A.
- Results in reduced ecological benefits due to use of riprap-armored channels.
- Limited improvements to water quality, habitat, and groundwater recharge.
- Results in minor long-term adverse effects to riparian and forested resources due to vegetation loss and hardened channels.

Overall, Alternative 6B emphasizes flood control but provides fewer environmental co-benefits.

Cumulative Effects

No significant cumulative impacts are anticipated. Other past and reasonably foreseeable projects are limited in scope, completed, or not expected to overlap in time or location. Minor temporary cumulative effects (e.g., construction-related noise or traffic) may occur but would be short-term and localized.

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 no action is taken:

- Flood risks to homes, infrastructure, and roadways would persist or worsen
- Water quality degradation and erosion would continue
- Habitat conditions would decline over time
- Public health and safety risks would remain elevated

- Economic losses from repeated flood damage would continue

This represents a long-term adverse condition across environmental, social, and economic resources.

Table 3 summarizes the short and long-term effects and cumulative effects of the No Action and Action Alternatives on resources of concern. Table 4 identifies the specific resources for which mitigation measures and BMPs shall be applied, including construction-phase controls, permitting requirements, post-construction monitoring, and any agency coordination or consultation that must be completed prior to or during implementation of the Preferred Alternative.

Table 3. Summary of Environmental Effects

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
Soil-Related Concerns			
Soil Resources	*Adverse effect (long term)*: There would be no change from existing conditions. Erosion is currently occurring at multiple locations along conveyance/major drainage system channels and would continue unchecked under the No Action/FWOFI Alternative, leading to long-term degradation of soil stability and quality. *Cumulative Effect:* Continued erosion under No Action would contribute to cumulative soil degradation in the region over time.	*Minor effect (short term):* Construction activities, including clearing, grading, and excavation, would result in temporary disturbance to soils. Construction BMPs, as required by the SWPPP, would minimize erosion and sedimentation. These measures would also prevent cumulative adverse effects to soils and water quality. *Beneficial effect (long term)*: NBS-focused improvements, such as SMCs and vegetated floodplains, would enhance bank stabilization and reduce erosion, providing long-term benefits to soil resources. *Cumulative Effect:* Proper implementation of BMPs and post-construction stabilization would ensure this Alternative does not contribute to cumulative degradation of soil or water quality, and may contribute positively at a watershed level.	*Minor effect (short term):* Similar to Alternative 6A, temporary soil disturbances would occur during construction, with erosion and sedimentation controlled through SWPPP-required BMPs. These practices would prevent significant cumulative impacts. *Beneficial effect (long term)*: Use of riprap-armored channels would provide bank stability and erosion control, though without the natural sediment filtering and soil-building functions of NBS systems. *Cumulative Effect:* BMP compliance during construction and stabilized banks would avoid cumulative adverse effects, but lack of NBS reduces potential for broader landscape-level benefit.
Prime and Unique Farmland, and Farmland of Statewide or Local Importance	*No effect*: There would be no change from existing conditions and no conversion of prime farmland soils to non-agricultural use. The No Action/FWOFI Alternative would not result in conversion or other impacts to prime farmlands or farmlands of statewide or local importance. *Cumulative Effect:* None anticipated, as no farmland conversion or agricultural resource impact would occur.	*Minor effect (long term):* Project activities would result in a small area of conversion of land use from farmlands to water infrastructure. Project activities would require consultation with the NRCS for potential impacts to Prime Farmland soils during the Design Phase of the Project. Based on the small area of conversion and reduced flood hazard on the surrounding area and agricultural lands, this Alternative is considered to have minor effects on prime farmlands. *Cumulative Effect:* No other projects were identified that would result in the conversion of agricultural lands in or near the Study Area. Therefore, the small amount of farmland conversion required for this Alternative is	*Minor effect (long term):* Project activities would result in a small area of conversion of land use from farmlands to water infrastructure. Project activities would require consultation with the NRCS for potential impacts to Prime Farmland soils during the Design Phase of the Project. Based on the small area of conversion and reduced flood hazard on the surrounding area and agricultural lands, this Alternative is considered to have minor effects on prime farmlands. *Cumulative Effect:* No other projects were identified that would result in the conversion of agricultural lands in or near the Study Area. Therefore, the small amount of farmland conversion required for this Alternative is

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
		not anticipated to contribute to a significant cumulative loss of agricultural lands in the region.	not anticipated to contribute to a significant cumulative loss of agricultural lands in the region.
Water-Related Concerns			
Water Resources	Significant adverse effect (long term): The No Action/FWOFI Alternative would not alter current floodplain or drainage conditions. Flooding would continue to impact water resources in the Study Area, leading to persistent erosion, sedimentation, degraded water quality, and flood damages to aquatic and riparian habitats. *Cumulative Effect:* Continued flooding and unmanaged stormwater would contribute to cumulative watershed degradation over time.	*Minor effect/beneficial effect (long term):* The Preferred Alternative would result in long-term beneficial effects to water resources by enhancing floodplain storage, reducing runoff, and restoring wetland and stream functionality. SMCs, SWQs, and NBS stormwater BMPs would improve infiltration, filtration, and overall aquatic ecosystem health. *Cumulative Effect:* This Alternative would contribute positively to cumulative watershed health by enhancing hydrologic function and water quality in combination with other conservation practices.	*Minor effect/beneficial effect (long term):* Alternative 6B would improve flood control and reduce erosion, which would benefit water resources. However, the extensive use of riprap-armored channels would limit ecological restoration and natural filtration processes. Water resource improvements would be moderate and primarily limited to flood and sediment reduction. *Cumulative Effect:* Cumulative effects would be neutral to slightly beneficial, as flood hazard reduction would be offset by the limited ecological enhancement compared to NBS-based designs.
Waters of the U.S., Wetlands, and Special Aquatic Sites	*No effect:* The No Action/FWOFI Alternative would result in no new ground disturbance and therefore no impacts to jurisdictional WOTUS. No permitting under the CWA would be required. *Cumulative Effect:* No cumulative impacts are anticipated as no construction activities would occur.	*Beneficial effect (long term):* Project activities would likely result in beneficial impacts to wetlands and aquatic resource functionality through NBS measures such as SMCs and SWQs. Impacts to WOTUS would require Section 404 permitting, likely under NWPs 3 and 27, with no compensatory mitigation expected due to the net improvement in aquatic resource function. *Cumulative Effect:* Long-term cumulative improvements to aquatic ecosystem function would result from this Alternative, especially in combination with other wetland conservation initiatives.	*Minor effect (long term):* Project activities would likely result in impacts to WOTUS requiring an Individual Permit under Section 404 and compensatory mitigation due to the use of riprap-armored flood control channels. While this would provide flood control benefits, it would not improve aquatic resource functionality. Impacts would be minimized through compliance with permitting and mitigation requirements. *Cumulative Effect:* Slight adverse to neutral cumulative impacts may occur due to habitat fragmentation and reduced wetland function despite mitigation.
Water Quality	*Adverse effect (long term):* There would be no changes from existing conditions, and the Study Area would continue to experience erosion and sedimentation from unmanaged flooding. These conditions would continue to degrade water quality, particularly in stream channels and drainage infrastructure.	*Minor effect (short term):* Construction activities would include earthwork and machinery operation that could affect water quality. However, adherence to the Arkansas DEQ STAA, Section 401 Water Quality Certification, NPDES permit, and associated SWPPP would minimize short-term water quality impacts.	*Minor effect (short term):* Construction-phase compliance with applicable permits and BMPs would limit short-term water quality effects. *Beneficial effect (long term):* Bank stabilization along riprap-armored flood control channels would reduce erosion and sedimentation. However, this Alternative would not improve nutrient loads, chemical filtration, or

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
	Cumulative Effect: Continued decline in water quality from unmanaged erosion and flood damage would contribute to broader regional water quality impairment	*Beneficial effect (long term)*: Water quality would improve through pollutant filtering and sediment/nutrient reduction via SMCs, SWQs, and other NBS BMPs. *Cumulative Effect:* Long-term improvements would support regional water quality goals and reduce non-point source pollution at the watershed scale.	other water quality parameters due to the absence of widespread NBS. Improvements would be limited to areas where NBS are included. *Cumulative Effect:* Cumulative improvements would be modest and focused primarily on sediment reduction; broader water quality gains would be limited.
Floodplain Management	*Adverse effect (long term):* Flood hazards would continue unabated; floodplain function would degrade under aging infrastructure. *Cumulative Effect:* Long-term unmanaged flooding would contribute to regional flood-storage loss and floodplain degradation.	*Beneficial effect (long term):* Substantial flood-hazard reduction and restoration of floodplain storage through SMCs. Compliance: Meets 33 U.S.C. § 701b-12(b) via FMP prepared by the Cities of Wilmot and Parkdale with NRCS and Ashley County. *Cumulative Effect:* Positive regional benefit to floodplain capacity and resilience.	*Beneficial effect (long term):* Reduces flood hazards but lacks natural floodplain restoration achieved under 6A. Compliance: FMP required per 33 U.S.C. § 701b-12(b). *Cumulative Effect:* Neutral to slightly positive regional effect.
Regional Water Resource Plans (including coastal plans)	*Minor effect (long term):* No flood reduction improvements would be implemented under this Alternative, and the Cities of Wilmot and Parkdale would continue to require additional support to meet the goals and critical initiatives of the Arkansas Water Plan. The Project Purpose and Need would remain unmet. *Cumulative Effect:* Persistent infrastructure needs would continue to hinder regional progress toward long-range water planning goals.	*Beneficial effect (long term):* This Alternative would directly support multiple goals of the Arkansas Water Plan and regional water resource plans for Bayou Bartholomew, including infrastructure optimization, reliability, and ecological protection. It also aligns with critical initiatives addressing insufficient infrastructure and maintenance needs while supporting sustainable land and water management. *Cumulative Effect:* This Alternative would strongly advance cumulative progress toward regional water management and ecological restoration goals.	*Beneficial effect (long term):* This Alternative would support infrastructure-related goals of the Arkansas Water Plan and regional water resource plans for Bayou Bartholomew by addressing flood control needs and improving reliability. However, because it relies more heavily on traditional infrastructure, it does not support ecological restoration goals to the same extent as the Preferred Alternative. *Cumulative Effect:* Moderate cumulative contributions to water resource planning goals would occur, though with limited ecological alignment.
Plant and Animal-Related Concerns			
Fish and Wildlife	*Adverse effect (long term):* Fish and wildlife habitat would continue to be degraded by ongoing flood hazards, erosion, and water quality impacts. Vegetation that supports habitat functions would remain at risk of repeated damage or destruction during storm events.	*Minor effect (short term):* Project activities may cause minor, temporary impacts to fish and wildlife during construction. BMPs and mitigation measures (Section 6.6) would be implemented to avoid significant adverse effects. *Beneficial effect (long term):* Project activities would restore and enhance habitat through installation of	*Minor effect (short term):* Similar construction-related impacts and avoidance measures as Alternative 6A. *Minor effect (long term):* While some habitat improvements would occur where limited NBS measures are used, long-term adverse impacts to aquatic species would result from the use of riprap-armored, trapezoidal channels, which degrade stream

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
	Cumulative Effect: Continued degradation of habitat would contribute to cumulative losses in biodiversity and ecological function across the region.	SMCs, SWQs, and other NBS measures, resulting in improved riparian, aquatic, and wetland habitat conditions in the Study Area. *Cumulative Effect:* Restoration of stream corridors and riparian zones would yield long-term cumulative habitat benefits when combined with broader conservation efforts.	habitat structure and connectivity. These adverse effects would contribute to cumulative impacts on regional fish and wildlife habitat. *Cumulative Effect:* Contributes to cumulative habitat fragmentation and reduced stream ecosystem integrity.
Threatened and Endangered Species	*Adverse effect (long term)*: No improvements or mitigation actions would be implemented that may provide habitat for ESA listed species. *Cumulative Effect:* Ongoing habitat degradation would contribute to cumulative stress on ESA-listed species in the region.	*No effect (long term):* Section 7 consultation with USFWS determined no effect on all ESA listed species, except for the tricolored bat and pink mucket, which it was determined that the Project "may affect, is unlikely to adversely affect." *Cumulative Effect:* No significant cumulative impacts are anticipated due to lack of ESA species presence.	*No effect (long term):* Alternative 6B would have the same species effects determinations as Alternative 6A: the Project would have no effect on all ESA listed species, except for the tricolored bat and pink mucket, which was determined that the Project "may affect, is unlikely to adversely affect." *Cumulative Effect:* No significant cumulative impacts are anticipated due to lack of ESA species presence.
Migratory Birds	*Adverse effect (long term):* Migratory birds would continue to be affected by habitat degradation from flood events, including erosion and vegetation loss in riparian and wetland areas. No restoration or protective measures would be implemented. *Cumulative Effect:* Declining habitat quality would contribute to cumulative regional losses in migratory bird populations.	*Minor effect (short term):* Construction would require pre-construction nest surveys and adherence to mitigation measures/BMPs under the MBTA to prevent impacts or take of migratory birds. *Beneficial effect (long term):* Expansion and restoration of riparian and wetland habitats would increase available nesting, roosting, and foraging areas. *Cumulative Effect:* The Preferred Alternative would contribute to cumulative regional gains in migratory bird habitat through riparian and wetland enhancement.	*Minor effect (short term):* Same pre-construction survey and mitigation requirements as Alternative 6A. *Minor effect (long term):* Some habitat gains in areas with NBS features; however, riprap-armored channels would result in net riparian habitat loss and diminished long-term value for migratory birds. *Cumulative Effect:* Contributes minimally to habitat enhancement and may slightly degrade regional habitat quality due to vegetation loss.
Bald and Golden Eagles	*Minor effect (long term):* No improvements or mitigation actions would be implemented that may provide habitat for bald eagles. Cumulative Effect: Cumulative loss of large trees and riparian nesting habitat could reduce suitable bald eagle territory in the region.	*No effect (long term):* No suitable nesting habitat is present in the LOD, therefore this alternative will not harm and will not cause a take of bald or golden eagles. *Beneficial effect (long term):* Restoration of riparian areas and forested corridors would increase suitable nesting habitat for bald eagles over time.	*No effect (long term):* No suitable nesting habitat is present in the LOD, therefore this alternative will not harm and will not cause a take of bald or golden eagles. *Minor effect (long term):* Some riparian forest loss would occur along riprap-armored flood control channels. No riparian forest restoration would occur, reducing long-term nesting suitability.

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
		Cumulative Effect: The Alternative would enhance bald eagle habitat and contribute to broader conservation outcomes for this species.	*Cumulative Effect:* No other projects were identified that would impact bald eagles in the Study Area, and no adverse cumulative impacts are anticipated.
Invasive Species	*No effect:* Invasive species presence would remain similar to existing conditions. *Cumulative Effect:* Existing populations would persist, contributing to the regional spread of invasive plant and animal species.	*Minor effect (short term):* Construction BMPs would follow ArDOT standards to prevent the spread of invasive species. *Beneficial effect (long term):* Native vegetation planting and active invasive species control would reduce non-native species proliferation over time. *Cumulative Effect:* Implementation of BMPs and native revegetation would support cumulative regional efforts to control invasive species.	*Minor effect (short term):* Same BMPs as Alternative 6A would be applied. *Minor effect (long term):* Some beneficial effects from revegetation, but less native species coverage and control than 6A. *Cumulative Effect:* Limited contribution to invasive species management relative to the Preferred Alternative.
Natural Areas	*Adverse effect (long term):* Flooding and erosion would continue to damage remaining riparian and forested areas, degrading natural features over time. *Cumulative Effect:* Long-term erosion and vegetation loss would contribute to cumulative degradation of remaining undeveloped areas.	*Minor effect (short term):* Temporary vegetation removal would be offset by long-term habitat restoration. *Beneficial effect (long term):* Increased natural area coverage through restoration of stream corridors and wetland-riparian habitats. *Cumulative Effect:* Would enhance regional natural area quality and habitat connectivity.	*Minor effect (short term):* Similar vegetation removal during construction to Alternative 6A. *No effect (long term):* No significant improvement or further degradation of natural areas would occur. *Cumulative Effect:* Neutral contribution to cumulative conditions of natural areas.
Riparian Areas	*Adverse effect (long term):* Riparian corridors would continue to degrade due to unchecked erosion, vegetation loss, and lack of management. *Cumulative Effect:* Regional decline in riparian health would continue unchecked.	*Minor effect (short term):* Tree removal for channel improvements would occur, but planting plans would restore riparian habitat. *Beneficial effect (long term):* Approximately 30.4 ac of riparian reforestation would occur, improving coverage and connectivity. *Cumulative Effect:* Significant positive contribution to regional riparian restoration goals.	*Minor effect (short term):* Vegetation would be removed for channel capacity expansion. *Minor effect (long term):* Unlike the Preferred Alternative, this design does not include large-scale riparian reforestation along the riprap-armored corridor itself. However, the 2.4 ac of forest gain associated with the retained NBS stormwater BMPs exceeds the 1.6 ac of forest removed for channel widening, resulting in an overall net gain of approximately 0.8 ac of forested cover.

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
			Cumulative Effect: Small positive contribution to regional riparian restoration goals.
Forest Resources	*Adverse effect (long term):* Forested areas would remain vulnerable to flooding and erosion, leading to vegetation degradation and long-term loss of tree cover. *Cumulative Effect:* Would contribute to regional forest fragmentation and loss.	*Minor effect (short term):* Tree removal for channel improvements would occur, but planting plans would restore forest habitat. *Beneficial effect (long term):* Approximately 30.4 ac of reforestation would occur, improving coverage and connectivity. *Cumulative Effect:* Significant positive contribution to regional restoration goals.	*Minor effect (short term):* Vegetation would be removed for channel capacity expansion. *Minor effect (long term):* Unlike the Preferred Alternative, this design does not include large-scale reforestation along the riprap-armored corridor itself. However, the 2.4 ac of forest gain associated with the retained NBS stormwater BMPs exceeds the 1.6 ac of forest removed for channel widening, resulting in an overall net gain of approximately 0.8 ac of forested cover. *Cumulative Effect:* Small positive contribution to regional restoration goals.
Human Use-Related Concerns			
Cultural Resources/Historic Properties and Tribal Consultation	*No Effect:* There would be no changes to the existing conditions. Identified sites from the desktop review of the APE are not known to experience flood damages.	*Minor effect (short term):* Section 106 consultation required under typical APE with AHPP/SHPO and Federally Recognized Tribes under PA procedures. *Finding of Effect:* No Adverse Effect anticipated after Class III survey and consultation per statewide PA. *Beneficial effect (long term):* Flood-risk reduction protects historic sites. *Cumulative Effect:* Supports regional heritage preservation through risk reduction.	*Minor effect (short term):* Same as 6A; consultation under PA procedures. *Finding of Effect:* No Adverse Effect anticipated after Class III survey and consultation per statewide PA. *Beneficial effect (long term):* Flood-risk reduction protects historic sites. *Cumulative Effect:* Supports regional heritage preservation through risk reduction.
Local, Regional, and National Economy	*Adverse effect (long term):* Flood damages reduce productivity and increase Federal disaster costs. *Cumulative Effect:* Persistent flood losses contribute to local economic decline and national NFIP and disaster-relief expenditures. From a national economic-efficiency standpoint, No Action serves as the $0 NMB baseline against which the Action Alternatives are compared.	*Beneficial effect (long term):* Reduces flood losses and stabilizes local economy. O&M: Cities of Wilmot and Parkdale responsible per WFPO agreement; lower cost than traditional systems. *Regional Impact:* Short-term jobs and environmental-services growth. *National Impact:* National Impact: Positive Net Monetized Benefits (NMB = $1,057,000 average	*Beneficial effect (long term):* Comparable local/regional benefits but higher O&M for riprap maintenance; fewer training and workforce co-benefits. *National Impact: National Impact: Negative Net Monetized Benefits (NMB = -$340,000 average annual); average annual costs exceed average annual benefits at the national level, resulting in worse national-economic performance than the No Action*

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
		annual); reduced NFIP claims. Alternative 6A was identified as the MNMB Alternative, yielding the highest NMB of all evaluated Alternatives. (Associated BCR = 2.23, presented for reference only.) *Cumulative Effect:* Supports regional revitalization and resilience.	*Alternative. (Associated BCR = 0.66, presented for reference only).* *Cumulative Effect: Reduces local flood-related losses, but represents a net negative contribution to national economic efficiency.*
Public Health and Safety	*Adverse effect (long term):* Continued flood risks would endanger residents' safety, limit emergency access, and expose the community to waterborne contaminants. *Cumulative Effect:* Prolonged public exposure to flood risks would contribute to cumulative health disparities and infrastructure vulnerabilities.	*Beneficial effect (long term):* Flood reduction improvements would improve public safety by reducing damages to homes and businesses and reducing road inundation during flood events. As described in Section 5.3.5, the Preferred Alternative would also result in water quality improvements, which is beneficial for public health and safety. *Cumulative Effect:* Provides long-term cumulative benefits to public health and safety through hazard mitigation.	*Beneficial effect (long term):* Flood reduction improvements would improve public safety by reducing damages to homes and businesses and reducing road inundation during flood events. As described in Section 5.3.5, Alternative 6B would result in some water quality improvements due to reductions in erosion and sedimentation, though this Alternative would not provide the same level of chemical filtration and other reduction in contaminants as the Preferred Alternative. *Cumulative Effect:* Contributes positively to public health resilience, though not as comprehensively as 6A.
Scenic Beauty	*Adverse effect (long term):* No changes would be made to the visual composition of the landscape from existing conditions due to construction activities associated with the Project. However, larger and more frequent flood events can result in significant effects on local scenic beauty due to flood damages. *Cumulative Effect:* Visual quality of the landscape would continue to decline.	*Minor Effect (short term):* During the construction phase, some temporary effects to the viewshed would occur. *Beneficial effect (long term):* The Preferred Alternative would result in benefits to the scenic beauty of the City of Wilmot and City of Parkdale by incorporating NBS-focused drainage improvements throughout the Cities. *Cumulative Effect:* Supports long-term visual enhancement and landscape restoration.	*Minor effect (short term):* During the construction phase, some temporary effects to the viewshed would occur. *Minor effect (long term):* There would be changes in the viewshed of the Study Area, primarily along riprap-armored flood control channels and where the limited NBS measures would occur. Riprap-armored flood control channels would be altered to trapezoidal, riprap-lined channels typical of traditional urban drainage improvements throughout the region as opposed to the NCD proposed under Alternative 6A. The traditional design of riprap-armored flood control channels would not include improved riparian vegetation corridors and would not be considered to improve the visual appeal of the landscape.

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
			Cumulative Effect: Modest contribution to landscape enhancement.
Parklands (including National Parks, Monuments, and Historical Sites)	*Adverse effect (long term):* There would be no change from existing conditions for parklands in the area. Wilmot City Park is within the FEMA BLE 100-year floodplain and has frequently experienced flooding in the past. No Action would allow such flooding events to continue to occur in the future unabated. *Cumulative Effect:* Indirect degradation of recreational access could continue.	*Minor effects (short term):* During construction, some temporary closures within the LOD to trails and the pedestrian bridge that crosses the channel would be required. *Minor effects (long term):* Proposed activities would expand the existing stream corridor but would not affect existing structures, facilities, or roads. Impacted trails and the pedestrian bridge crossing would be replaced with similar or enhanced structures to ensure that there are no adverse impacts to park amenities. The proposed design would be approved by ADPHT and the City of Wilmot to ensure that there are no significant adverse effects to the park. *Beneficial effects (long term):* A reduction of flood hazards within Wilmot City Park and along U.S. Highway 165 would result in beneficial impacts to the Park by reducing future flood damages. *Cumulative Effect:* Project supports cumulative preservation of recreational access.	*Minor effects (short term):* During construction, some temporary closures within the LOD to trails and the pedestrian bridge that crosses the channel would be required. *Minor effects (long-term):* Proposed activities would expand the existing stream corridor but would not affect existing structures, facilities, or roads. Impacted trails and the pedestrian bridge crossing would be replaced with similar or enhanced structures to ensure that there are no adverse impacts to park amenities. The proposed design would be approved by ADPHT and the City of Wilmot to ensure that there are no significant adverse effects to the park. However, the riprap-armored flood control channel in the park would not include improved riparian vegetation corridors and would not be considered to improve the visual appeal of the landscape and park. *Beneficial effects (long term):* A reduction of flood hazards within Wilmot City Park and along US-165 would result in beneficial impacts to the Park by reducing future flood damages. *Cumulative Effect:* Project supports cumulative preservation of recreational access.
Land Use	*No effect:* Existing patterns remain unchanged. *Cumulative Effect:* No direct change; continued flood risk could discourage reinvestment in flood-prone areas.	*Minor effect:* Approximately 37 ac acquired (37 ac ROW/easements and 10 residential relocations per URA (49 CFR Part 24; NWPM § 501.80A.14.g). Includes moving, housing, closing, and contingency allowances. Public input documented at April 9, 2024, meeting; no objections received. *Cumulative Effect:* Minor localized land-use change offset by public safety and environmental benefits.	*Minor effect:* Same acquisition and relocation needs as 6A; identical landowner input and cost basis. *Cumulative Effect:* Minor localized land-use change offset by public safety and environmental benefits.

Resource	No Action/FWOFI	Alternative 6A (Preferred Alternative/MNMB Alternative): Combined Sites NBS-Focused Drainage Improvements	Alternative 6B: Combined Sites Traditional-Focused Drainage Improvements
Other Concerns			
Groundwater	*No effect:* Existing conditions unchanged. *Cumulative Effect:* No contribution to regional recharge; ongoing runoff may continue minor indirect effects on quality.	*Beneficial effect:* SMCs and NBS BMPs enhance infiltration and recharge. Short-term construction effects negligible with BMPs. *Cumulative Effect:* Positive regional benefit to groundwater sustainability.	*Negligible effect:* Traditional design limits infiltration and recharge. *Cumulative Effect:* Minimal regional benefit.

Table 4. Mitigation, Minimization, and Avoidance Measures

Resource	Mitigation Measures and BMPs
General Construction	During construction, site mitigation measures would include erosion and sediment control, dust control, and other practices identified during the design process and as outlined in the SWPPP. BMPs during construction would be implemented to minimize the mobilization of the sediment into stream systems. Additionally, proper construction phasing and ingress/egress points would be utilized to reduce soil compaction during construction. Typical BMPs include silt fencing, bank stabilization, construction entrances, sediment storage, matting, and grassing/vegetative cover.
Air Quality	The Project shall comply with all general air quality rules and regulations for Arkansas as part of the Arkansas State Implementation Plan (U.S. Environmental Protection Agency, 2024c), as well as any other local air quality regulations. Fugitive dust control will be required to minimize the impact of fugitive dust beyond site limits. Appropriate mitigation, such as sprinkling or utilizing dust suppression techniques, shall be implemented during construction.
Noise	All construction activities must abide by local (city/county) noise ordinances. Construction activity will occur during daylight hours, at times when increased noise levels are more tolerable. Machinery used on site will have all working noise abatement measures in working order. A City of Wilmot and City of Parkdale representative will be available to respond to any noise complaints from the surrounding community.
WOTUS	The Project must obtain CWA Section 404 permits prior to construction and must comply with all requirements of the permit. It is not anticipated that implementation of the Project will result in adverse impacts to the aquatic function of any WOTUS that would require mitigation offsets, as described in Section 5.3.4 of the Plan-EA.
Water Quality	An Arkansas DEQ STAA, Section 401 Water Quality Certification, NPDES permit must be obtained for construction. To apply for the permit, a SWPPP must be prepared and maintained to prevent and limit soil erosion during construction activities. The Project must follow all conditions of the permit and any BMP requirements from the Arkansas DEQ To ensure that accidental spills do not enter waters, the storage of petroleum-based fuels and other hazardous materials and the refueling of construction machinery shall not occur outside of approved designated staging areas. Furthermore, the Project would comply with Federal and State water quality standards and toxic effluent standards to minimize any potential adverse impacts from discharges to WOTUS or wetlands.
Floodplains	The City of Wilmot and Parkdale will coordinate all required permits with the floodplain administrator prior to the undertaking of construction activities and will maintain all noted permit conditions. No increases in flood levels will occur due to the construction of the Preferred Alternative, and the undertaking of the Preferred Alternative will not negatively impact the surrounding community.
Migratory Birds	To prevent harm or disruption to active migratory bird nests that may occur in the Project limits, clearing and grubbing of vegetation should be conducted prior to March 1 or after August 31, to the maximum extent possible, to avoid the period when most local bird species nest and breed. If vegetation removal must be conducted between March 1 and August 31, the SLOs must employ a qualified biologist to survey the area slated for disturbance no more than 5–10 days preceding clearing and grubbing. Active bird nests should be protected from

Resource	Mitigation Measures and BMPs
	disturbance until the young have fledged or until the nest is no longer active, as determined by the qualified biologist.
Invasive Species	The Project shall follow standard ArDOT invasive species construction BMPs. Invasive terrestrial and aquatic animal species documented in the Planning Area are not expected to be attracted to or spread by Project construction or operation; equipment and materials moved between water bodies will be cleaned to prevent transfer of aquatic invasive species.
Cultural Resources	The Project shall comply with the statewide NRCS Arkansas PA for compliance with Section 106 of the NHPA (executed August 4, 2025). In accordance with the PA and implementing regulations at 36 CFR Part 800, NRCS shall define the APE, conduct phased identification and evaluation of historic properties, and consult with the AHPP/SHPO, ACHP (if participating), and the Federally Recognized Tribes identified in the PA. Findings of effect, avoidance, minimization, or mitigation measures shall be documented consistent with 36 CFR 800.4–800.6 and the procedures in the PA. If previously unknown archaeological or cultural materials are discovered during construction, work shall cease in the immediate vicinity of the find and NRCS shall follow the unanticipated-discovery procedures established in the PA in coordination with the SHPO and consulting Tribes before resuming work.
Parklands	Impacted trails and the pedestrian bridge crossing within the LOD at Wilmot City Park shall be replaced with similar or enhanced structures to ensure no adverse impacts to park amenities. During the Design Phase of the Project, the Project design team shall coordinate with the City of Wilmot and the ADPHT to ensure both parties approve of the proposed design.

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

Yes. The Preferred Alternative would require construction equipment and materials and other energy in the form of labor and fossil fuels. Using these items would be generally irretrievable with the exception of items that can be salvaged during decommissioning and removal of some existing street pavement and residential structures (as part of Limits of Disturbance [LOD] buyouts). The expenditure of financial resources is irretrievable in the short term, but the investment would reduce long-term flood risks to homes, businesses, roads, and other critical infrastructure in the Cities of Wilmot and Parkdale.

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 commitment of resources is not expected to result in a loss of long-term productivity. Instead, the Project would increase long-term productivity of the human environment by:

- Reducing flood damages
- Improving land stability
- Enhancing ecosystem function

Endangered Species Act

The pertinent subject matter expert(s) reviewed the proposed action (and action alternatives, if any) and documented determinations for threatened, endangered, proposed and/or candidate species (TEPC) and/or critical habitat in a biological assessment. A “may affect, likely to adversely affect” determination was reached for the following species:

No species were determined to have a “may affect, likely to adversely affect” determination during Section 7 consultations.

A biological habitat assessment report was completed by Headway Environmental on August 5, 2026. Based on a review of the USFWS’s IPaC report, no designated or proposed critical habitat occurs within the Study Area. A biological survey was completed for the Project to assess potential suitable habitat for federally listed, proposed, candidate, and state-protected species within the Study Area. Special attention was provided to the tricolored bat (*Perimyotis subflavus*), piping plover (*Charadrius melodus*), eastern black rail (*Laterallus jamaicensis ssp. Jamaicensis*), rufa red knot (*Calidris canutus rufa*), alligator snapping turtle (*Macrochelys temminckii*), pink mucket (*Lampsilis abrupta*), monarch butterfly (*Danaus plexippus*), and pondberry (*Lindera melissifolia*), as these species were identified by the USFWS IPaC report as having potential to occur within or near the Study Area. No suitable habitat for the eastern black rail, piping plover, rufa red knot, alligator snapping turtle, or pondberry was observed during the site visit, and no milkweed host plants were observed for the monarch butterfly. Suitable pink mucket habitat was not identified within the proposed Project areas. However, the USFWS IPaC AFO Arkansas Multi-Species Determination Key resulted in a preliminary may affect, not likely to adversely affect determination for the pink mucket based on the proposed Project activities and incorporation of applicable species protective measures. In a letter dated August 4, 2026, the USFWS concurred with the may affect, not likely to adversely affect determination for the pink mucket. Scattered trees, maintained vegetation, drainage features, and limited riparian cover may provide limited foraging opportunities for the tricolored bat. However, no suitable summer roosting habitat was identified within the Survey area. The AFO Arkansas Multi-Species Determination Key also resulted in no effect determinations for the eastern black rail, piping plover, rufa red knot, and pondberry and documented a no jeopardy determination for species proposed for listing. The Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key returned a may affect result for the tricolored bat under the key’s broader screening criteria. Based on the project-specific biological effects analysis, it was determined that the Project may affect, but is not likely to adversely affect, the tricolored bat. This recommendation supports the lead federal agency’s separate evaluation under Section 7(a)(4) of whether the Project is likely to jeopardize the continued existence of the species. On August 11,2026, the USFWS concurred with the above determinations. Copies of the USFWS Section 7 consultation documentation is provided in Appendix A of the Plan-EA.

Table 5: Table 2: Applicable proposal record documentation to support ESA compliance

Documentation Type	File Name (if applicable/needed)
Biological Habitat Assessment (BHA)	Plan-EA Appendix E

Documentation Type	File Name (if applicable/needed)
USFWS IPaC Species List	Plan-EA Appendix E
Endangered Species Act Section 7 Consultation Documentation	Plan-EA 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:

NRCS Arkansas, in coordination with the AHPP/SHPO, ACHP, and Federally Recognized Tribes, has established a statewide PA for compliance with Section 106 of the NHPA for all PL 83-566 Watershed Projects in Arkansas. The PA was executed on August 4, 2025. The statewide PA establishes the uniform procedures NRCS Arkansas will follow for all future watershed projects, including: defining the APE; identifying and evaluating historic properties; consulting with the SHPO, ACHP, and Federally Recognized Tribes; determining findings of effect; and resolving adverse effects in accordance with 36 CFR 800.5 and 800.14(b). For the Wilmot and Parkdale Project, Section 106 consultation has transitioned to these PA procedures for all further Section 106 consultations.

To support this Plan-EA prior to completion of NHPA Section 106 surveys and consultations, a preliminary Area of Potential Effect (APE) was assumed for the Preferred Alternative. The preliminary APE includes all areas of ground disturbance and staging (the LOD) plus a 100-foot buffer to account for indirect effects. The final APE will be confirmed by NRCS in consultation with the AHPP/SHPO and consulting Tribes consistent with the statewide PA. Three historic and archaeological resource sites were identified within or adjacent to the APE:

- Bank of Parkdale (AS0052),
- historical archaeology site (3AS0466), and
- historical archaeological site (3AS0467)

No other historic properties, archaeological sites, or cemeteries were identified within the preliminary APE (Saatkamp 2023). On September 1, 2026, the NRCS initiated formal NHPA Section 106 consultations with the AHPP/SHPO and 21 Tribes. Consultation is ongoing and will continue through the design phase. During design, NRCS will conduct the Class III survey and continue Section 106 consultation with the AHPP/SHPO, ACHP (if requested), and Federally Recognized Tribes in accordance with the statewide PA. Determinations of effect—no historic properties affected, no adverse effect, or adverse effect—will be made in consultation with those parties as defined in 36 CFR 800.5. Construction will not proceed until consultation is complete. If previously unknown resources are discovered during construction, work will stop and the appropriate consultation procedures under the PA will be followed.

Table 6: Applicable proposal record documentation to support NHPA compliance

Documentation Type	File Name (if applicable/needed)
Programmatic Agreement	Plan-EA Appendix A

Documentation Type	File Name (if applicable/needed)
Section 106 Consultation Records	Plan-EA Appendix A; Project administrative record (NRCS Arkansas State Office)
Cultural Resources Survey	(Class III Survey to be completed during the design phase)

Consultation with Federally Recognized Tribes

Consultation with federally recognized tribes was conducted as follows:

Tribal consultation was initiated during Project scoping in October 2023 using the HUD Tribal Directory Assessment Tool to identify potentially affected Tribes, resulting in outreach to five Federally Recognized Tribes; responses were limited and did not identify concerns at that stage. A statewide PA executed in August 2025 expanded consultation to 21 Tribes, and formal NHPA Section 106 consultation was initiated on September 1, 2026. Consultation is ongoing, with one Tribe responding the project is out of the Tribe's area of interest, and will continue through the design phase in coordination with participating Tribes in accordance with the PA and applicable regulations. Consultation will be completed prior to construction.

Table 7: Applicable proposal record documentation to support tribal consultation

Documentation Type	File Name (if applicable/needed)
Tribal Scoping Coordination Letters (October 27, 2023)	Plan-EA Appendix A; Project administrative record (NRCS Arkansas State Office)
Tribal Section 106 Consultation Records	Plan-EA Appendix A; Project administrative record (NRCS Arkansas State Office)
Consultation Tracking Documentation	Project administrative record (NRCS Arkansas State Office)
Programmatic Agreement	Plan-EA Appendix A

Clean Water Act

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

A delineation of potential Waters of the U.S. (WOTUS) within the Study Area, including wetlands and other aquatic features, would be required during the Design Phase of the Project. Although Project activities under the Preferred Alternative are designed to result in beneficial effects to aquatic ecosystems through natural channel restoration, floodplain connectivity, and wetland enhancements, some activities would occur within or adjacent to potential jurisdictional features and would require Clean Water Act (CWA) Section 404 permitting from the U.S. Army Corps of Engineers (USACE).

This Project would likely be eligible for the following Nationwide Permits (NWP):

- **NWP 27: Aquatic Habitat Restoration, Enhancement, and Establishment Activities**. There are no impact limitations or compensatory mitigation requirements associated with this permit as the Project is required to provide a net increase in aquatic resource functions and services.
- **NPW 3: Maintenance**. If any roadside ditches associated with cleanout, repair, reprofile, and/or realign activities are determined to be jurisdictional WOTUS, these

activities could be permitted under NWP 3. However, under the current interpretation of WOTUS, these features are considered unlikely to be considered jurisdictional by the USACE, although only the USACE can confirm jurisdictional determinations.

Because the Preferred Alternative uses nature-based solutions and aims to improve aquatic habitat and hydrologic function, it is anticipated to result in long-term beneficial effects to WOTUS. Adherence to CWA permitting requirements would avoid and minimize temporary construction-related impacts. At this time, no other projects have been identified in or near the Study Area that would affect jurisdictional waters. Therefore, the Preferred Alternative is not expected to contribute to significant cumulative impacts to WOTUS in combination with other past, present, or reasonably foreseeable future actions.

Table 8: Applicable proposal record documentation to support CWA compliance

Documentation Type	File Name (if applicable/needed)
Wetland Delineation Report	(to be completed during the Design Phase of the Project)
Section 404 Permit Application	(to be completed during the Design Phase of the Project)
Section 401 Certification Documentation	(to be completed during the Design Phase of the Project)
NPDES Permit and SWPPP	(to be completed during the Design Phase of the Project)

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.

Determination: *No significant adverse effect to air quality.* The Planning Area is within attainment of the EPA National Ambient Air Quality Standards (NAAQS). The Project would result in minor, temporary emissions during construction from equipment and vehicle use. These impacts would be short-term and localized. No long-term air quality impacts are anticipated, and the Project would not result in exceedance of any NAAQS. BMPs such as dust control and equipment maintenance will be implemented during construction to minimize emissions.

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:

Activities are proposed within or in the vicinity of Special Management Areas.

Wilmot City Park is the only parkland or other Special Management Area identified within or near the Preferred Alternative Study Area. Stormwater management corridor improvements are proposed to an existing channel within the northwestern side of the

park. Proposed activities would expand the existing stream corridor compared to existing conditions. Project activities would not affect existing structures, facilities, roads, or other amenities within the park. During construction, some temporary closures within the LOD to trails and the pedestrian bridge that crosses the channel would be required. Long term, the impacted trails and the pedestrian bridge crossing would be replaced with similar or enhanced structures to ensure no adverse impacts to park amenities. During the Design Phase of the Project, the Project design team would coordinate with the City of Wilmot and the ADPHT to ensure both parties approve of the proposed design. Proposed activities would result in improved flooding conditions along this channel and along U.S. Highway 165 during storm events.

On April 14, 2024, the Project planning team reached out to ADPHT to share preliminary concept design plans, request feedback on proposed Project activities, and provide information on roadside drainage ditch maintenance near the Wilmot City Park, inviting any questions or comments from ADPHT. On May 20, 2024, the Project planning team and ADPHT had a phone call to discuss potential Project impacts to Wilmot City Park. ADPHT expressed concerns about potential impacts to the walking trail, trail bridge crossing, and any other facilities/park amenities impacts to Wilmot City Park. On May 24, 2024, ADPHT replied to proposed concept design plans stating, “Based on the information provided for the City of Wilmot, it appears that the proposed drainage improvements will directly affect a public outdoor recreation site in the City of Wilmot. We understand the design team is aware of the existing park and that the proposed project could affect park land and resources to include existing roads, walking trails, parking facility and ballfield We highly recommend working with the City of Wilmot to develop and refine project design to minimize / eliminate negative effects to park land and facilities.”

On May 24, 2024, the Project planning team responded to ADPHT that the Project design team would work with the City of Wilmot to refine the Project plans to avoid or minimize any impacts to any existing roads, walking trails, parking facilities, or ballfields within Wilmot City Park and will, at a minimum, incorporate replacement or mitigation for any unavoidable impacts in the final design. As described above, mitigation to ensure no significant adverse effects to park amenities will be required, and ADPHT will coordinate with during the Design Phase of the Project to approve the proposed design; ADPHT will also be provided a copy of the Draft Plan-EA.

In summary, through the incorporation of avoidance and minimization of impacts to any existing roads, walking trails, parking facilities, or ballfields within Wilmot City Park and replacement or mitigation for any unavoidable impacts to park trails and the pedestrian bridge crossing, the Preferred Alternative is anticipated to result in minor effects to Wilmot City Park’s existing facilities and amenities. No other projects were identified that would impact Wilmot City Park, resulting in cumulative impacts in combination with implementation of this Alternative. A reduction of flood hazards within Wilmot City Park

and along U.S. Highway 165 would result in beneficial impacts to the Park by reducing future flood damages.

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

The Project occurs within the 100-year floodplain and is specifically designed to reduce flood risk and improve floodplain function. The Preferred Alternative:

- Reduce flood hazards to structures and infrastructure
- Improve floodplain storage and conveyance
- Comply with NFIP requirements and local floodplain ordinances

The Project includes preparation and implementation of a Floodplain Management Plan (FMP) consistent with NRCS requirements.

EO 11990 – Protection of Wetlands

Wetlands and other aquatic resources are present within the Study Area. The Preferred Alternative:

- Avoids and minimizes impacts to wetlands where practicable
- Utilizes nature-based solutions that enhance wetland function
- Will comply with CWA permitting requirements

Long-term effects include improved wetland function, water quality, and hydrologic connectivity.

EO 13007 – Indian Sacred Sites

No known Indian sacred sites have been identified within the Study Area. Tribal consultation has been initiated and will continue under the PA. If any sites are identified, appropriate avoidance and protection measures will be implemented.

EO 13112 – Invasive Species

The Project includes measures to prevent the introduction and spread of invasive species, including:

- Implementation of construction BMPs
- Use of native vegetation in revegetation efforts
- Post-construction monitoring and control

Long-term effects are expected to reduce invasive species presence and improve native plant communities.

EO 13186 – Migratory Birds

Project activities may temporarily affect migratory bird habitat during construction due to vegetation clearing. Mitigation measures include:

- To prevent harm or disruption to active migratory bird nests that may occur in the Project limits, clearing and grubbing of vegetation should be conducted prior to March 1 or after August 31, to the maximum extent possible, to avoid the period when most local bird species nest and breed. If vegetation removal must be conducted between March 1 and August 31, the SLOs must employ a qualified biologist to survey the area slated for disturbance no more than 5–10 days preceding clearing and grubbing. Active bird nests should be protected from disturbance until the young have fledged or until the nest is no longer active, as determined by the qualified biologist.

Long-term effects include increased habitat availability through restoration of riparian and vegetated areas.

Table 9: Applicable proposal record documentation to support EO compliance

Documentation Type	File Name (if applicable/needed)
Floodplain Management Plan	To be completed during the Design Phase of (the Project)
Wetland Delineation and Section 404 permitting documentation	To be completed during the Design Phase of (the Project)
SWPPP and BMP Plans	To be completed during the Design Phase of (the Project)
USFWS Coordination / Consultation Documentation	Plan EA Appendix A
Tribal Consultation Records	To be completed during the Design Phase of (the Project)

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.

APPENDICES

Consultation and public coordination documentation (Appendix A), Project maps (Appendix B), Other Supporting Maps (Appendix C), Investigations and Analysis Report (Appendix D), and Other Supporting Information, including the USFWS IPaC (Appendix E) are provided in the Plan-EA document.

Appendix A. Consultations, Comments, and Responses

A-1. Project Scoping Report

A-2. Agency Consultations

A-3. NHPA Section 106 SHPO and Tribal Consultations

A-4. Draft Plan-EA Comments and Responses

A-1.
Project Scoping Report

Scoping Report:
City of Wilmot Area, Arkansas Watershed Plan-Environmental Assessment

Overflow Creek-Bayou Bartholomew Watershed and Camp Bayou Canal Watershed

NRCS WFPO Unique ID Number: OPR.NW00.05.7011
CEQ Unique ID Number: EAXX-005-53-000-1726840406

LEAD AGENCY

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

SPONSORS

Arkansas Black Mayors Association
UNITED FOR PROGRESS

Arkansas Black Mayors Association
300 Spring Street Building, Suite 1015
Little Rock, Arkansas 72201

AND

City of Wilmot, Arkansas
P.O. Box 67
Wilmot, AR 71676

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February 2024

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Attachments

Attachment A. Scoping Notice Materials
Attachment B. Scoping Meeting Materials
Attachment C. Public Comments

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Introduction

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), with the City of Wilmot, Arkansas along with the Arkansas Black Mayors Association (ABMA) as the project sponsors, are proposing to partially fund through the Watershed Protection and Flood Prevention Act (Public Law [PL] 83- 566), the City of Wilmot Area Watershed Plan Project in Ashley County, Arkansas (Project).

NRCS, as the lead federal agency, is initiating National Environmental Policy Act (NEPA) analysis in the form of a new Watershed Plan and Environmental Assessment (Plan-EA) to analyze impacts to the natural and human environment from this Project.

The Plan-EA will comply with the Council on Environmental Quality's (CEQ's) regulations at 40 CFR Parts 1500-1508, which require an evaluation of potential environmental impacts associated with federal projects and actions. The purpose of the Plan-EA is to develop a watershed Project plan so that NRCS can decide whether to provide technical and financial assistance to the City of Wilmot and ABMA for implementation of the alternative selected by the City of Wilmot and ABMA.

Scoping Goals and Objectives

Scoping is the first step of and an integral part of the NEPA process. It is an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action (40 CFR Part 1501.7). The objectives of the Scoping process are to:

- Engage interested parties and the general public in the early identification of concerns, potential impacts, and possible alternative actions;
- Determine the scope and the significant issues to be analyzed in depth in the Plan-EA;
- Identify potentially significant issues related to the proposed action, as well as identifying and eliminating issues that are not significant or that have been covered by prior environmental review;
- Identify the scope of issues to be addressed and integrate analyses required by other environmental laws (e.g., Endangered Species Act, National Historic Preservation Act); and
- Identify technical studies needed to adequately address potential impacts of the Project.

Scoping Process

Schedule

The following dates outline the milestones for the Scoping announcement and activities that occurred in preparation for the formal preliminary Scoping period. The preliminary scoping comment period opened on November 16th, 2023, and closed on December 18th, 2023.

- August 8, 2023: A preliminary public Scoping meeting was held at the Wilmot Community Center
- October 10, 2023: Kick-off meeting with the NRCS and sponsor Project team
- October 26, 2023: Scoping invitation letter was emailed to the State Clearinghouse
- October 27, 2023: Cooperating agency invitation letters were mailed to two federal agencies. Scoping invitation letters were mailed to 24 Federal, State, or local agencies or representatives, and Tribal Scoping invitation letters were mailed to 5 tribal contacts
- November 1, 2023: Notice was published in the Ashley County Ledger
- November 2, 2023: Notice was published in the Arkansas Democrat-Gazette
- **November 16, 2023: Opening of formal public comment period;** Scoping notice and public meeting details were published to the ABMA Watershed Project website, flyers were mailed to agencies and stakeholders, and notice was published in the aforementioned newspapers.
- November 16, 2023: A preliminary public Scoping meeting was held at the Wilmot Community Center
- November 21, 2023: A preliminary Scoping meeting for agencies and stakeholders was held online.
- **December 18, 2023: Close of formal public comment period**

Kick-off Meeting

A kick-off meeting with the NRCS and sponsor Project team was held virtually at 2 p.m. on October 10, 2023. The meeting included discussions of the scope of the Project and potential projects, identified additional stakeholders, and reviewed public scoping methods.

Mailing List

A Project mailing list was compiled by the NRCS, Headway Environmental (Headway), and the stakeholders to identify the entities that would receive Scoping materials directly. Form letters are included in Attachment A.

Project notification/cooperating agency invitation letters were sent to two agencies on October 27, 2023:

- Bryton Hixson, Acting Chief, Arkansas Branch, U.S. Army Corps of Engineers, Vicksburg District
- U.S. Department of the Interior, Fish and Wildlife Service – Conway, AR

Project notification letters were sent to 24 contacts with the following organizations on October 27, 2023:

- U.S. Department of the Interior, Office of Environmental Policy & Compliance
- U.S. Environmental Protection Agency
- U.S. Environmental Protection Agency, Region 6
- Natural Resources Conservation Service

- Arkansas Department of Agriculture- Forestry Division
- Arkansas Department of Agriculture- Natural Resources Division
- Arkansas Department of Environmental Quality
- Arkansas Department of Health
- Arkansas Department of Parks & Tourism
- Arkansas Department of Transportation
- Arkansas Economic Development Commission
- Arkansas Game & Fish Commission
- Office of the State Geologist
- Arkansas Historic Preservation Program
- Arkansas Natural Heritage Commission
- Arkansas Pollution Control and Ecology Commission
- Arkansas Waterways Commission
- U.S. Senator John Boozman
- U.S. Senator Tom Cotton
- U.S. Representative Bruce Westerman
- State Senator Ben Gilmore
- State Representative Howard M. Beaty, Jr.
- Mayor Carolyn Harris of Wilmot
- Ashley County Judge Jim Hudson

Notification was emailed to the following organizations on October 26, 2023:

- Department of Finance and Administration - State Clearinghouse for Agencies

A Tribal Scoping letter was mailed to five Federally Recognized Tribes on October 27, 2023:

- Apache Tribe of Oklahoma
- Choctaw Nation of Oklahoma
- Coushatta Tribe of Louisiana
- Mississippi Band of Choctaw Indians
- Quapaw Nation Notice

The NRCS also conducted programmatic-scale coordination with additional Federally Recognized Tribes on behalf of this Project and 13 additional ABMA NRCS-funded watershed projects which received funding at the same time.

Notice

Public notice of the Project and Scoping meeting was distributed widely prior to the November 16th public Scoping meeting. The official Scoping comment period opened on November 16, 2023, and closed on November 30th, 2023. The public notice was published in Arkansas

Democrat-Gazette on November 2, 2023, and in the Ashley County Ledger on November 1, 2023. The public notice was also posted to the ABMA Watershed Project website (https://www.abmawatershedproject.com/projects/city-of-wilmot), mailed to each designated entity on the Project mailing list on October 27, 2023, and sent to Mayor Harris to distribute into the community. The notice invited all interested members of the relevant agencies and general public to participate in the respective meetings, and provided details for submitting comments by email, mail, or in person at the public Scoping meeting. The Scoping notice materials are attached as Attachment A.

State Clearinghouse Notification

An invitation to participate in Project Scoping and the public and agency Scoping meetings was sent to the Arkansas State Clearinghouse on October 26, 2023. No response was received, so a follow-up email was sent on November 10, 2023, before the public and agency Scoping meetings. On November 13, 2023, Headway received a phone call from the State Clearinghouse with questions regarding the Project to which Headway provided responses. No confirmation regarding the actions of the State Clearinghouse with respect to the Project were detailed. On November 30, 2023, another follow-up email was sent to the State Clearinghouse, but no further response was received. Copies of all correspondence emails are attached in Attachment A.

Agency/Stakeholder Scoping Meeting

A preliminary agency Scoping meeting for the Project was held virtually on November 21, 2023. The meeting included discussions of the scope of the Project, communication protocols and potential agency involvement, and potential resources of concern. Representatives from the ABMA, the NRCS, the Outdoor Recreation Grants Program with the Department of Parks, Heritage, and Tourism, and the USACE Vicksburg District Regulatory Division attended the meeting.

Public Scoping Meeting

A public Scoping meeting was held on November 16, 2023, at the Wilmot Community Center from 6:00 to 7:45 p.m. The meeting began with a presentation of the City of Wilmot Area Watershed Improvement Project Overview, as well as an introduction to the NEPA process. The presentation was followed by an open question session where attendees were encouraged to discuss specific concerns with the presentation team. Poster boards were included at the back of the room for attendees to mark special areas of concern (flooding, drainage issues, maintenance issues) with pins for inclusion in the consideration of alternatives best suited to assist the local communities and their residents. There were 15 attendees, excluding the Project team. A list of attendees can be provided if requested, but it was not included in this report for privacy reasons. The meeting presentation slides is attached as Attachment B.

Comments

The formal open public comment period was from November 16 to December 18, 2023. Comments could be submitted in person at the meeting or by email or mail. Comments were both received during the first public Scoping meeting (initial survey) and during the second public Scoping meeting (secondary survey).

Summary of Identified Issues

Consultation with the ADPHT identified two parks within the Study Area watersheds receiving Outdoor Recreation Grants Program funding. Cities that utilize state and federal Matching Grant funds are obligated to maintain grant funded park sites for public outdoor recreation in perpetuity. If any Project activities will occur within one of these parks, ADPHT must be notified for consultation.

The initial and secondary public comment surveys requested information from commenters about what types of flooding issues they have experienced and where they have occurred in the Study Area watersheds. This will allow the Project development team to better identify problematic areas for flooding within the Study Area and to better target work to be proposed in the alternatives formulation stage. Thirty-four unique responses to the surveys were received during the comment period; some additional duplicate responses were received. Responses to the survey were primarily received from residents of the City of Wilmot and the City of Parkdale, with only two of the 34 responses received from residents in other parts of the Project watersheds. See Figure 1 below for a map of the location of public comment responses. Forty-four percent of respondents experienced flooding only after a very heavy (or record) rainfall event, 41 percent experienced flooding every time it rains, and 21 percent experienced flooding occasionally but not every time it rains.

When asked what types of drainage challenges or flooding respondents are experiencing at their location, 85 percent of respondents identified roadways underwater or standing water on roads or unpaved areas as an issue at or near their location. Forty-four percent of respondents experienced water in homes or businesses. A quarter of respondents identified roadside ditches or culverts as clogged, damaged, or undersized causing flooding issues. Fifteen percent of respondents identified creeks or rivers out of their banks causing flooding in their area, and fifteen percent of respondents identified detention ponds overflowing in or near their area.

When asked what kinds of impacts or damage respondents are seeing at their location due to flooding, only nine percent of respondents experienced no permanent damage during flooding events. Fifty-three percent of respondents identified flooding as a safety hazard. Forty-one percent of respondents identified erosion damage, and 50 percent of respondents identified damage to buildings or infrastructure due to flooding.

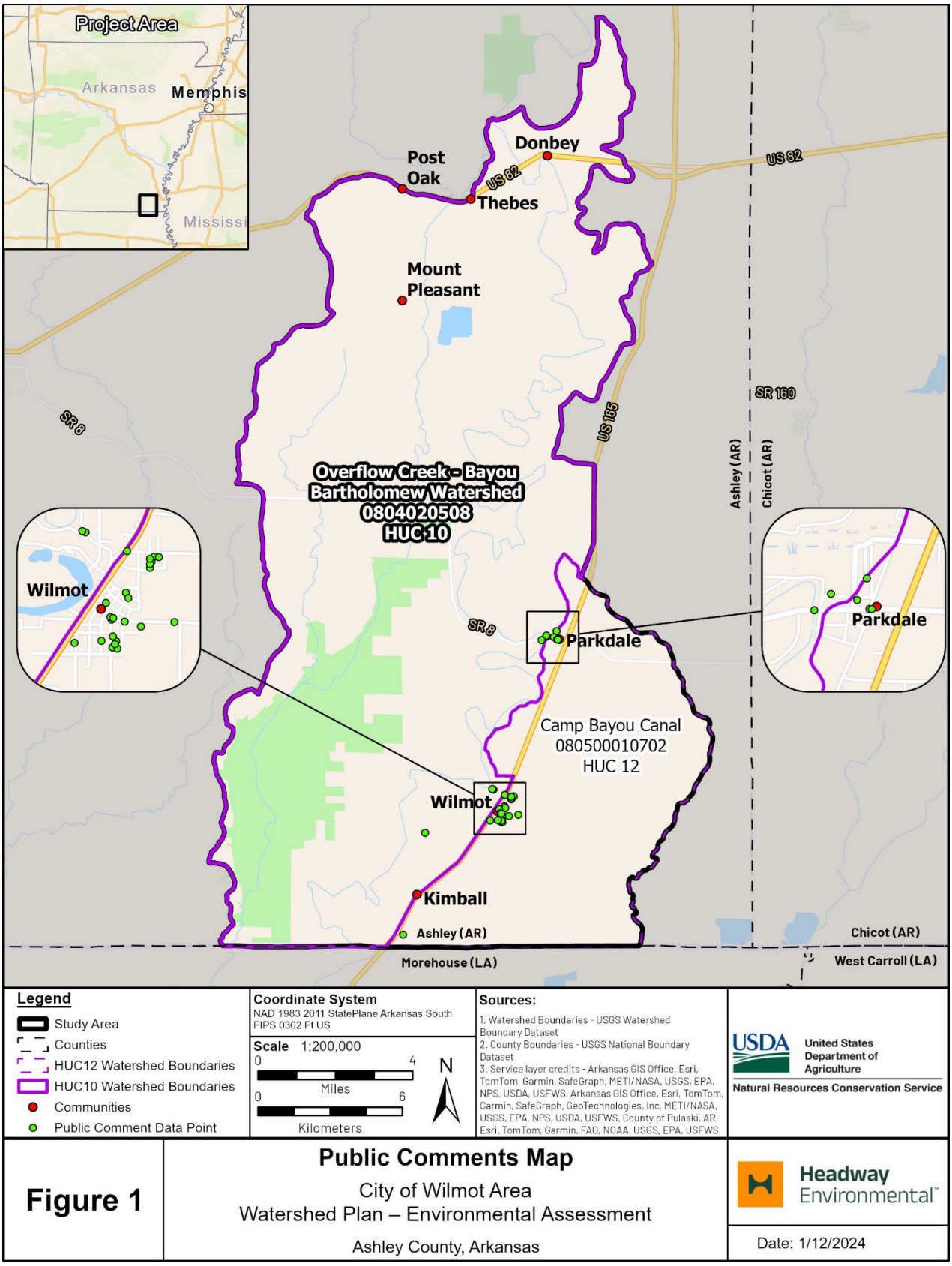


Figure 1. Public comments map for the City of Wilmot area

Attachment A.
Scoping Notice Materials

a-1. Cooperating Agency Invitation Letter

a-2. Agency Scoping Invitation Letter

a-3. Tribal Scoping Invitation Letter

a-4. Newspaper Publications

a-5. Project Publicity Flyer

a-6. Project Fact Sheet

a-1. Cooperating Agency Invitation Letter

October 19, 2023

U.S. Army Corps of Engineers – Vicksburg District
Planning Division, Regulatory Functions/Permits
4155 Clay Street
Vicksburg, MS 39183

RE: Formal request for USACE to be a cooperating agency on the City of Wilmot Area Watershed Plan and Environmental Assessment

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is formally requesting that your agency become a cooperating agency in the planning and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency has been identified as having special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project. If permits are required from your agency, you also may have NEPA compliance responsibilities. Therefore, USDA-NRCS' preparation of this Plan-EA could assist in fulfilling environmental review requirements for your agency or other federal agencies and meet NEPA's intent of reducing duplication and delay between agencies.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and surrounding small communities in Ashley County, Arkansas, which lie within one 12-digit and one 10-digit HUC watersheds. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

If your agency is unable to participate as a cooperating agency, please return a written explanation as to why your agency cannot participate. Please note that a response declining to be a cooperating agency also must be submitted to the Council on

Environmental Quality per 40 CFR Part 1501.6(c). Upon acceptance of this invitation, roles can be defined in an informal agreement or formal MOU.

A virtual (MS Teams) review of the project area is scheduled for November 21, 2023. The meeting will begin at 10:30 am and conclude at 12:00 pm (central standard time). If your agency plans to participate in the review meeting, please notify Bill Kinkaid at william.kinkaid@usda.gov and Lee Forbes (Headway Environmental – Project Consultant) at lforbes@headwayenviro.com by November 17, 2023.

A public scoping meeting is scheduled from 6:00 to 7:45 pm, November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot, AR.

Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Bill Kinkaid of my staff at william.kinkaid@usda.gov or via phone at 501-301-3127.

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Area Map

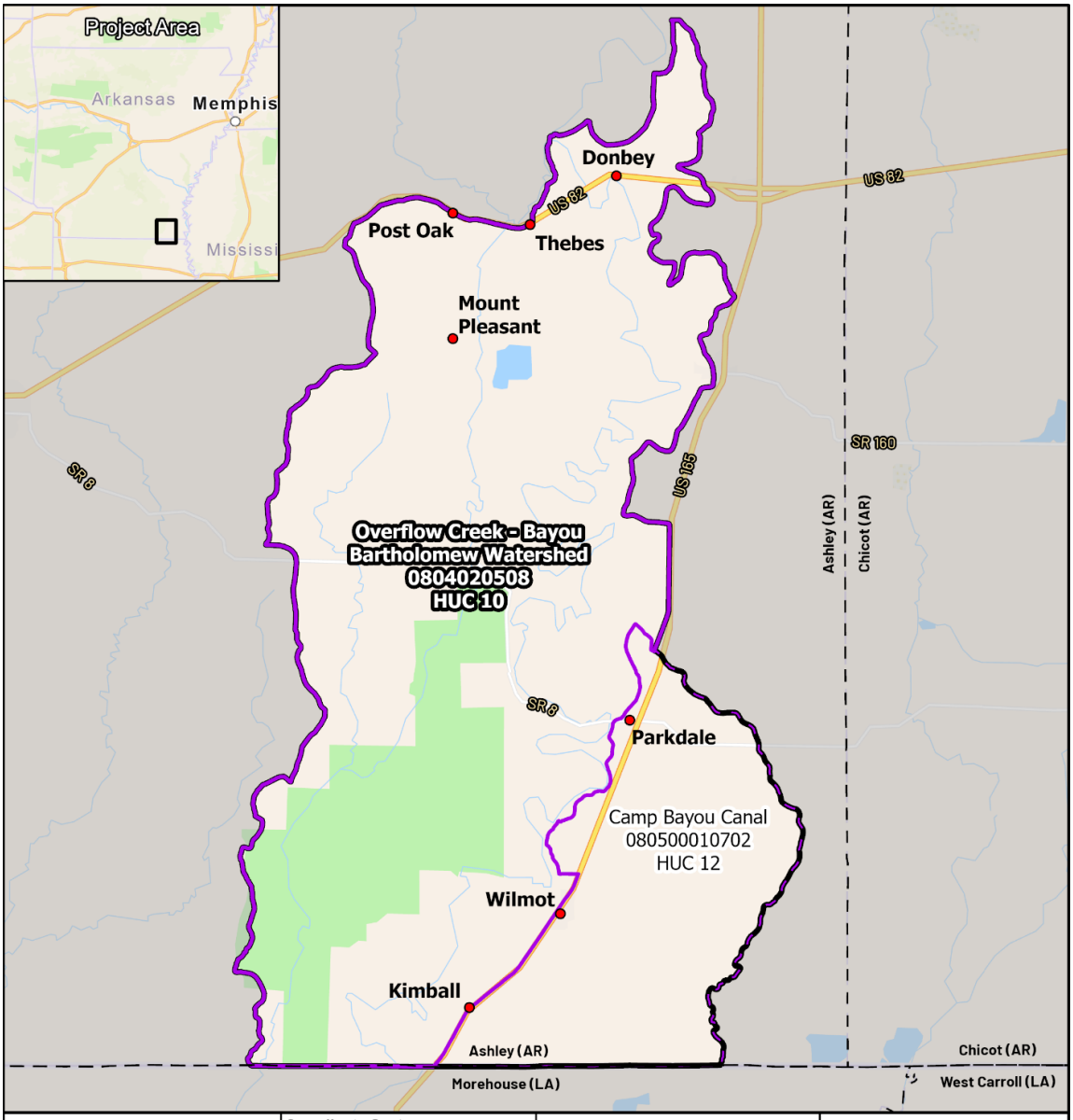


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

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Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

November 16, 2023
6:00 – 7:30 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will be in an open house, come-and-go format, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.

October 19, 2023

Chris Davidson, Acting Field Supervisor
U.S. Fish and Wildlife Service
110 S. Amity Road
Suite 300
Conway, AR 72032

RE: Formal request for USFWS to be a cooperating agency on the City of Wilmot Area Watershed Plan and Environmental Assessment

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is formally requesting that your agency become a cooperating agency in the planning and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency has been identified as having special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project. If permits are required from your agency, you also may have NEPA compliance responsibilities. Therefore, USDA-NRCS' preparation of this Plan-EA could assist in fulfilling environmental review requirements for your agency or other federal agencies and meet NEPA's intent of reducing duplication and delay between agencies.

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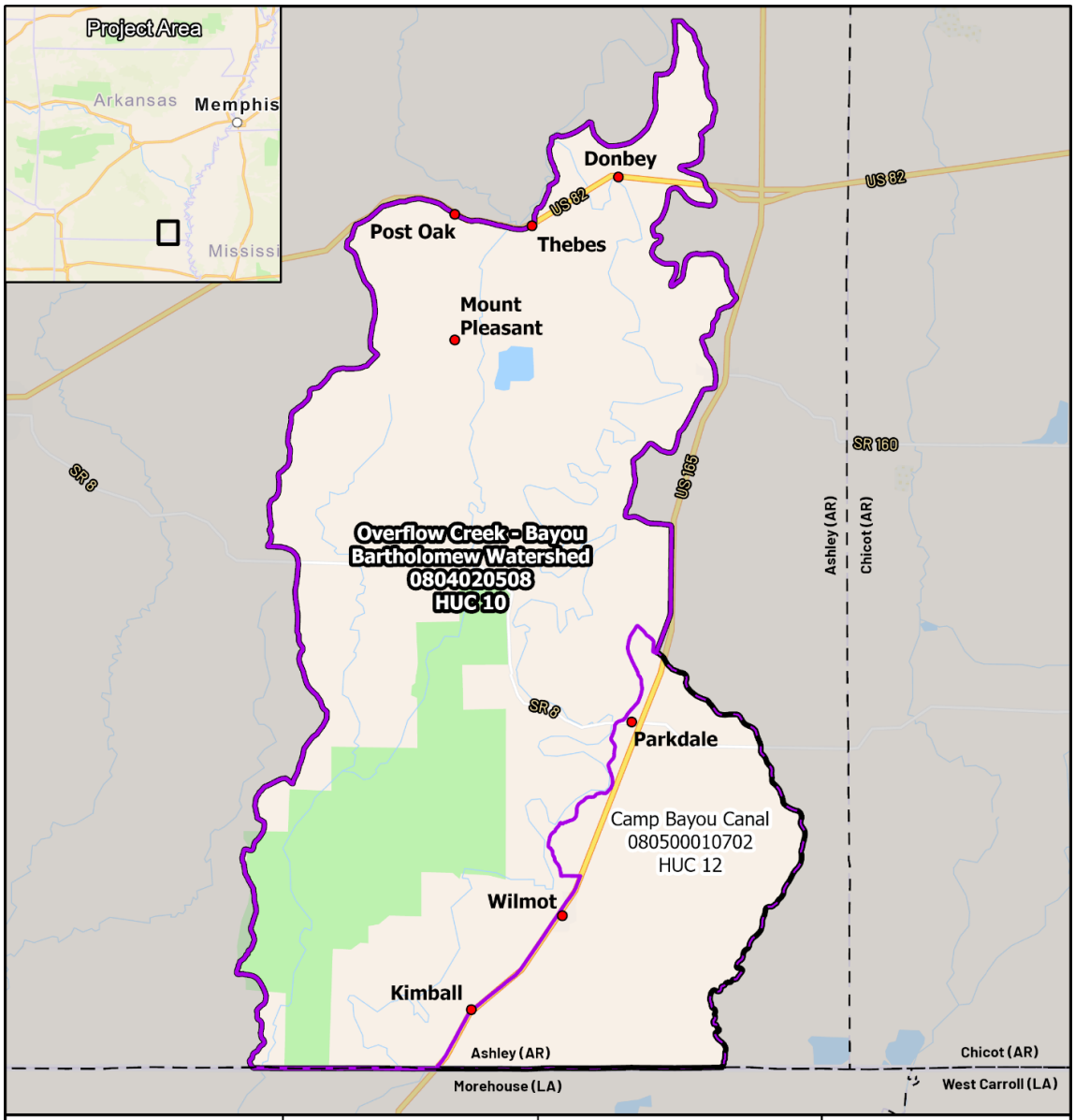
Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Bill Kinkaid of my staff at william.kinkaid@usda.gov or via phone at 501-301-3127.

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

November 16, 2023
6:00 – 7:45 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will include a presentation followed by an open-house, come-and-go forum, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.

a-2. Agency Scoping Invitation Letter

<MONTH><DAY>, 2023

<NAME>
<AGENCY>
<ADDRESS LINE 1>
<ADDRESS LINE 2>
<CITY, STATE ZIP CODE>

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that your agency participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and the one 12-digit and one 10-digit HUC watersheds that encompass the city and surrounding areas of the county. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan-EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm, November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail

or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

A virtual (MS Teams) review of the project area is scheduled for November 21, 2023. The meeting will begin at 10:30 am and conclude at 12:00 pm (central standard time). If your agency plans to participate in the review meeting, please notify Bill Kinkaid at william.kinkaid@usda.gov and Lee Forbes (Headway Environmental – Project Consultant) at lforbes@headwayenviro.com by November 17, 2023.

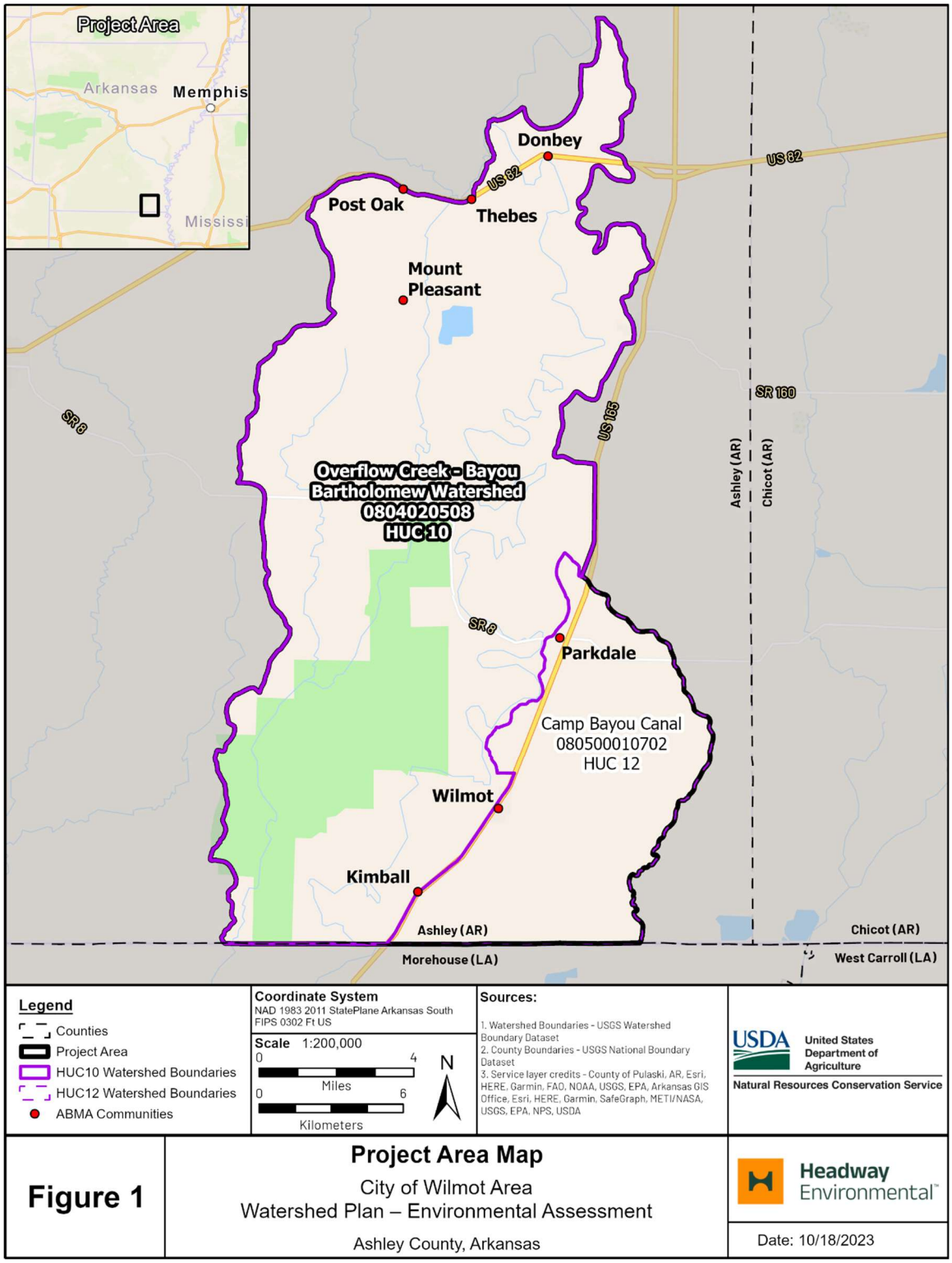
Thank you for your timely response and assistance with the scoping of this project. If you have any questions or comments, please contact Bill Kinkaid of my staff at william.kinkaid@usda.gov or via phone at 501-301-3127.

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

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Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.

a-3. Tribal Scoping Invitation Letter

<MONTH><DAY>, 2023

<NAME>
<AGENCY>
<ADDRESS LINE 1>
<ADDRESS LINE 2>
<CITY, STATE ZIP CODE>

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear <NAME>:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

To satisfy the public involvement and consultation requirements for Section 106 of the National Historic Preservation Act (NHPA), USDA-NRCS is interested in learning whether the project has the potential to impact any significant archaeological, religious or cultural sites so that USDA-NRCS can factor that into its identification and evaluation of feasible alternatives during the NEPA documentation process.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and surrounding small communities in Ashley County, Arkansas, which lie within one 12-digit and one 10-digit HUC watersheds. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm (central standard time), November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot, AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

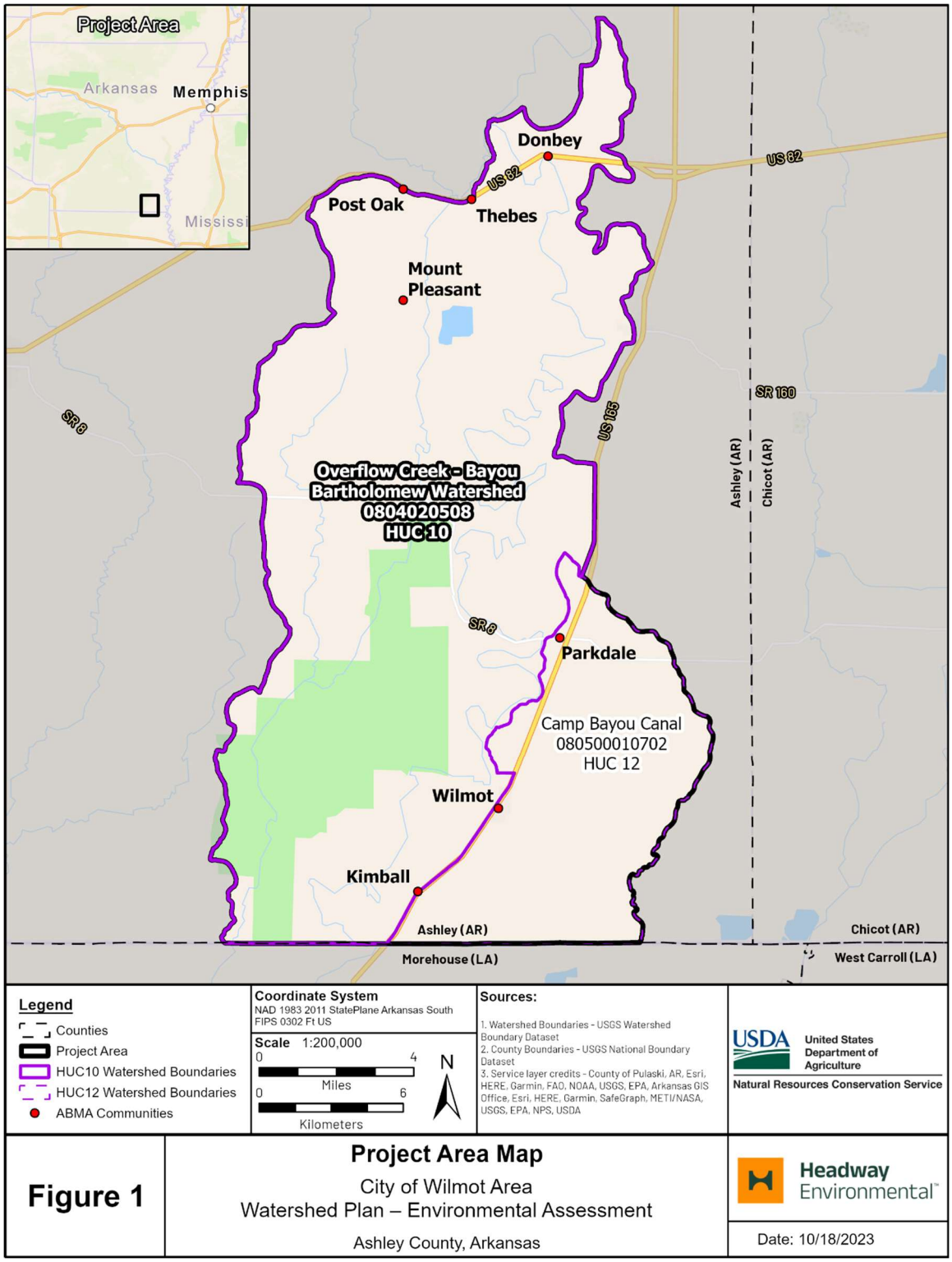
Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Scott Smallwood of my staff at Christopher.Smallwood@usda.gov or via phone at 501-237-3142.

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Location Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.

a-4. Newspaper Publications

Gilmore

(Continued from Page 4)

methods based on the science of reading.

A goal of the act is to ensure that all elementary school teachers have been trained in the science of reading.

The LEARNS Act requires high school students to complete 75 hours of community service in order to graduate.

It allows high school students to choose a curriculum focused on technical and vocational subjects that will further their path toward a well-paid job. If high school students don't believe they are suited for higher education, they won't be limited to the conventional core of academic subjects.

The act directs the state will commit to more school safety measures, continuing the push to provide high speed Internet in all Arkansas schools.

Boozman

(Continued from Page 4)

I want to be clear, however, that this in no way reduces the need for a robust investment in the Farm Bill's trade title. The programs authorized by the Farm Bill aid exporters in accessing, expanding and creating markets for U.S. agricultural products and add billions to the value of American agriculture exports in the process.

New trade deals will go a long way to help our state's economy. In 2021, Arkansas's agricultural exports totaled over $3.8 billion. Natural State producers led exporters of rice in 2021, and were the third highest exporter of cotton and chicken. The global marketplace is clearly hungry for the products grown by Arkansas family farmers.

Protecting existing markets is equally as important as opening new ones because we operate in a global economy and our trading partners don't always live up to our agreements.

Our family farmers are the ones who pay when countries like China use the avian flu as an excuse to block access to virtually all U.S. poultry products or when India heavily subsidizes its domestic rice so it can sell for less on the international market than American farmers can.

Even our neighbors continue to play games at the expense of our farmers. Canada's allocations of dairy tariff-rate quotas for domestic processors prevents U.S. farmers from having true market access and Mexico's policies blocking biotech corn are not grounded in science and are detrimental to our producers.

The administration has stepped up efforts to enforce our agreements as of late, but it must continue to lean on our trading partners to ensure they adhere to the terms of our deals.

And while we aim to resolve these trade disputes, we must continue to do more to increase our farmers access to the 95 percent of the world's consumers that exist outside of our borders. A Farm Bill with a strong focus on trade can enable us to reach those customers and help our family farmers thrive.

Rep. Beaty

(Continued from Page 4)

caregivers are over the age of 50 and 41 percent of caregivers have an annual household income of less than $50,000.

Members of the committee were also given some alarming statistics regarding Arkansans experiencing early warning signs.

In Arkansas, 11.5 percent of those aged 45 and over report they experience confusion or memory loss that is happening more often or getting worse.

For those with worsening memory, 60 percent say it has created functional difficulties that have caused them to give up day-to-day activities or interfere with work or social activities.

While there is currently no cure for Alzheimer's, research is showing that people can reduce their risks by making key lifestyle changes including maintaining good heart health.

In recognizing the pressing need to address Alzheimer's, the 94th General Assembly strengthened with Advisory Council with Act 102. This act adds two members from underrepresented healthcare providers. They include a representative from Arkansas Home-based Services Association and the Arkansas Residential Assisted Living Association.

The 94th General Assembly also passed Act 682 which establishes the position of Dementia Coordinator within the Division of Aging at the Department of Human Services.

We will continue to review the information and recommendations coming from the Advisory Council.

The Alzheimer's Disease and Dementia Advisory Council was to meet again on Monday, Oct. 30 at 12:30 p.m. in the State Capitol, room 151. The meeting was to be live-streamed at arkansashouse.org.

Westerman

(Continued from Page 4)

es in the future. The resolution declaring October as National Dyslexia Awareness Month is an important first step in making sure that educators and parents across the country are aware of the prevalence of dyslexia and are encouraged to ask questions and get their students and children the learning assistance they need. That's why I also cosponsored the 21st Century Dyslexia Act, which will pull dyslexia out of the overly broad category of "Specific Learning Disability," making it easier for educators to apply the science of reading and help students get tested earlier and find solutions instead of floundering in schools with no resources.

I believe every American student should have access to the tools they need to thrive in their education, even when learning disabilities pose a challenge. The bipartisan effort we've seen backing the solutions in Congress will hopefully prevent any parent or child from feeling alone. I will continue to advocate for methods and means which give our nation's children their best step forward in learning to read.

Obituaries

Ashley Boykin

Ashley Jo Boykin, 41, of El Dorado, formerly of Crossett, died Tuesday, Oct. 24, 2023. She was born Sept. 17, 1982, and was a 2000 graduate of Crossett High School.

She was a member of New Chapel Hill Baptist Church.

She earned an associate degree in nursing from Louisiana Tech University and worked at St. Francis Medical Center in the ICU and Glenwood Medical Center in the Adult ICU.

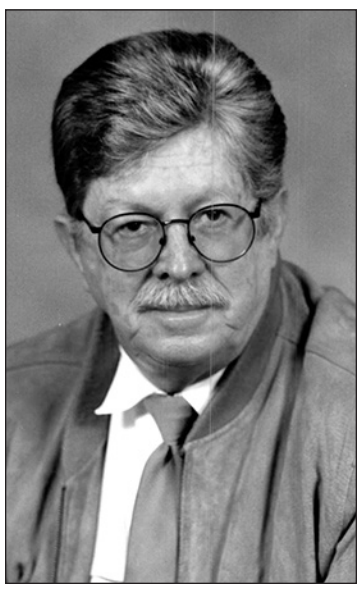
She was preceded in death by her stepfather, Roger Orr, and two stepsisters, Mendy Gossett and Sonya Orr.

She leaves behind two sons, Shaun McCallum of Monroe, La., and Mason McCallum of Baton Rouge, La.; her parents, Bobby and Trisha Boykin Jr. of Minden, La., and Clyde and Debbie Farmer of Crossett; two brothers, Deron Boykin (Kristah) of Redfield and Brian Farmer (Tammy) of Crossett; and two sisters, Allison Howell (David) of Monroe and Hester Hickman (Schon) of Crossett.

A memorial service was held at 1:30 p.m. Monday, Oct. 30, at Mt. Olive Baptist Church in Crossett with Pastor Doug Hibbard officiating.

In lieu of flowers, donations may be sent to St. Jude Children's Research Hospital, 501 St Jude Place, Memphis TN 38105.

-



Bobby Collier

Bobby Louis Collier, 86, of Crossett, formerly of North Little Rock, died Saturday, Oct. 28, 2023. He was born Jan. 14, 1937, and worked for many years at Little Rock Wastewater facility.

He helped form Morgan Full Gospel Church in Morgan and was active in southern gospel worship music in his community. He was also a member of the church band.

He was preceded in death by his parents, Thomas Ralph and Myrtle Burcham Collier; one daughter, Janet Collier Murphy; one brother, Kenneth Collier; one daughter-in-law, Donna Collier; and one great-grandson, John Anderson.

He leaves behind two sons, Tim Collier of Hamburg and Rusty Collier (Charlotte) of North Little Rock; one daughter, Shannon Sisk (Chris) of Crossett; eight grandchildren; 14 great-grandchildren; and two great-great-grandchildren.

A celebration of life service will be held at 11 a.m. Thursday, Nov. 2 at Medders Funeral Home with Bro. Rocky Hickman officiating. Burial will follow in Carlock Cemetery.

Pallbearers are Tim Collier Jr., Allen Collier, Chris Collier, Thomas Rice, Caleb Anderson, and Nick Anderson.

Visitation will be from 6 p.m. to 8 p.m. Nov. 1 at Medders Funeral Home.

-



Marsha Funderburg

Marsha Lynn Smith Funderburg, age 68, of Crossett, died Friday, Oct. 27, 2023, at St. Vincent Hospital in Little Rock. She was born Oct. 30, 1954, in Crossett and was a homemaker.

She was preceded in death by her parents, Edd Smith and Ethel Blackwell, and one brother, Johnny Blankenship.

She is survived by her husband of 52 years, Rickie Funderburg of Crossett; two daughters, Shannon Michel (Ben) of Monticello and Monica Williams (Wesley) of Hamburg; one sister, Deborah McKeegan (John) of Las Vegas, Nev.; two brothers, Michael Smith (Connie) of Crossett and Edward Smith (Mary) of Miles City, Mon.; six grandchildren; and two great-grandchildren.

A celebration of life will take place Wednesday, Nov. 1 at 2 p.m. at Mt Olive Baptist Church. The service will be under the direction of Medders Funeral Home of Crossett with Bro. Eric Hodge and Eddie Smith officiating. Burial will follow in Cross Road Cemetery.

A public visitation was scheduled for Tuesday, Oct. 31 from 5 p.m. to 7 p.m. at Medders Funeral Home.

The pallbearers for the service will be Philip Jones, Conley Williams, Kent Kilcrease, Michael Mathews, Colton Williams, and Wade Barnett.

In lieu of flowers, donations may be sent to Mt. Olive Baptist Church.

-

Doyle Glennon Sr.

Doyle Merrell Glennon Sr., 83, of Crossett, died Wednesday, Oct. 25, 2023. He was born Feb. 8, 1940, was a former member of Possum Valley community, and was a member of Cloverdale Assembly of God Church.

He graduated from Crossett High School in 1958, worked in the construction industry, and retired from Georgia Pacific after 33 years of service.

He was preceded in death by his wife of 56 years, Marilyn "Janell" Glennon, and his parents, Terrell and Letha Brown Glennon.

He leaves behind two sons, Doyle "Bodie" Glennon Jr. (Paula) of Marion, La., and Richard "Ricky" (Karen) of Milo; one sister, Dianne Cochran (Benny) of Crossett; nine grandchildren; and 18 great-grandchildren.

A celebration of life graveside service was held at 2 p.m. on Sunday, Oct. 29 in Sixteenth Section Cemetery in Drew County with Bro. Wes Miller and James Harrington officiating. Pallbearers were Caleb Martin, Kory Steen, Logan Glennon, Caleb Glennon, Devin Ross, and Jim Carter.

Honorary pallbearers were Benny Cochran and Oscar Carr.

Services were under the direction of Medders Funeral Home.

-

Steve Haygood

Steve Haygood, 60, a lifelong resident of Crossett, died Monday, Oct. 23, 2023. He was born July 25, 1963, and was a member of Cloverdale Assembly of God Church.

He was a 1981 graduate of Crossett High School and for 18 years, worked for Georgia Pacific and eventually at Steve's Body and Frame.

He earned a bachelor of science degree in psychology from University of Arkansas at Monticello and was working towards his master's degree in social work before his health declined.

He was preceded in death by his father, Jerald Wayne Haygood, and one son, Jerrick Sellers.

He leaves behind his wife of 30 years, Sonya Peterson Haygood; seven children, Lee Sellers, Tiffany Sellers, Whitney Sellers, Brittney Reeves, Alaizia and Alyssa Haygood, and Layla Sellers; his mother, Linda Haygood; two brothers, John Haygood (Terri) and Mike Haygood; and six grandchildren.

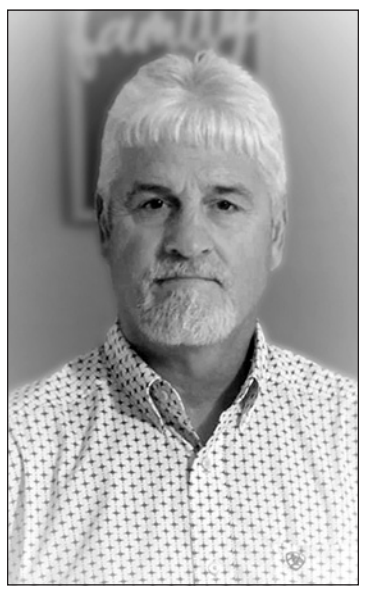
A celebration of life service was held at 2 p.m. Friday, Oct. 27, at Cloverdale Assembly of God Church with Pastor David Williams and Bro. Wes Miller officiating. Burial followed in Crossroads Cemetery under the direction of Medders Funeral Home.

Pallbearers were Paul Weems, Mike Chisholm, Curt Cagle, Bill Rice, Steven Henderson, and Bob Tuggle.

Honorary pallbearers were Wayne Keeth, Ricky Pruitt, and Greg Burnside.

In lieu of flowers, donations may be sent to Hope at Home, PO Box 1001, Crossett AR 71635.

-



Paul "Tony" Meeks

Paul Anthony "Tony" Meeks, 55, of Hamburg, died Wednesday, Oct. 25, 2023, at his home. He was born March 15, 1968, in Monticello. He was a welder in the construction industry.

He was preceded in death by his father, Richard "Dickie" Meeks Sr.; one sister-in-law, Sonya Meeks; and his former father-in-law, Bill Cason.

He leaves behind his wife, Lizzie Shelton Meeks of Hamburg; six children, Tyler Meeks of Crossett, Bryson Meeks (Trish) of Paragould, Ryne Axton of Ruston, La., Hope Sharpe (Matt), Drew Grubbs, and Cason Meeks; his mother and stepfather, Diane and Eddie Black of Hamburg; his stepmother, Shirley Meeks of Hamburg; three siblings, Ricky Meeks Hamburg, Danon Bauer (John) of Grenada, Miss., and Shannon Black of Portland, Ore.; and six grandchildren.

A celebration of life service was held at 11 a.m. Saturday, Oct. 28, at Medders Funeral Home with Pastor Keith Boseman and Brandon Meeks officiating. Burial followed in Carter Cemetery under the direction of Medders Funeral Home.

Pallbearers were Ralph Ware, Wayne Cruce, Talan Carter, Jeff Meeks, Chad Moffatt, C.W. Tyson, Bruce Meeks, and Matt Sharpe.

Honorary pallbearers were Pete Meeks, Todd Edwards, and the Burkes Mechanical group.

-



Mareen Vann

Mareen Vann, age 69 of Little Rock, formerly of Hot Springs, died Friday, Oct. 27, 2023, at Encore Healthcare and Rehabilitation in Little Rock. She was a native of Portland, where she worked most of her life as a secretary and was of the Baptist faith.

She was preceded in death by her mother, Christine Holmes; her father, Gene Spencer; and four brothers, Ivory Curtis, Burl Franklin, Bruce Adams, and William Richardson.

She is survived by one brother, Leroy McDaniel of Detroit, Mich., and four sisters, Bessie Jackson of Oak Park, Mich., Emma Jean Allen of Crossett, Fairillia Turner of San Jose, Calif., and Jacqueline Bynum husband Charles of Portland.

Funeral service will be Friday, Nov. 3 at 11 a.m. at Brown Temple Baptist Church with Rev. Kentrell Woods officiating.

Pallbearers are Ricky Holmes, Roy Lee Holmes, Kordale Brown, Willie Robinson Sr., Maxx Webb, and Jeffery Davis.

Burial will follow in Jones Chapel Cemetery in Portland and under the direction of Cromwell Funeral Home Inc.

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Find Your Local Newspaper At
ashleycountyledger.com

Public Input needed on:

FLOOD PROTECTION

On behalf of:

- Natural Resources Conservation Service, USDA
- Arkansas Black Mayors Association
- City of Wilmot, Carolyn Harris, Mayor
- Headway Environmental ™

YOU are invited to a public meeting to discuss flood risk and flood protection in the following communities in Ashley County:

Donbey
Thebes
Post Oak
Mt Pleasant
Parkdale
WILMOT
Kimball

Thursday November 16, 2023
6:00 pm to 7:45pm
Wilmot Community Center
2764 Hwy 15 South
Wilmot Arkansas

ON THE SQUARE IN HISTORIC DOWNTOWN HAMBURG

CAREFirst
pharmacy and wellness center

113 East Adams
Hamburg, AR 71646
870-831-6163
1-888-385-2977 (Fax)
Email
CareFirstpharmacyandwellness@gmail.com
www.carefirstpharmacy.live



We CARE First!

PHARMACY
Friendly and knowledgeable staff of Board Certified pharmacists are here and ready to serve you.

IMMUNIZATIONS
We can provide you with access to all of your immunizations, and we have a private immunization room.

DELIVERY
We will make deliveries within a 30 mile radius, of the pharmacy, to residents, businesses, assisted living centers, and even local area schools. To take advantage of this service, simply request delivery of your monthly prescription by calling (870) 831-6163.

PATIENT CARE
We offer an excellent patient consultation program designed to fully educate each patient. We believe that an educated patient is a more compliant patient. Offering patient care such as blood pressure checks, medicine payment assistance, and more.

MARY'S GIFTS
ON THE SQUARE
Come see us for all your gift needs.

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a-5. Project Publicity Flyer

Public Input needed on:

FLOOD PROTECTION

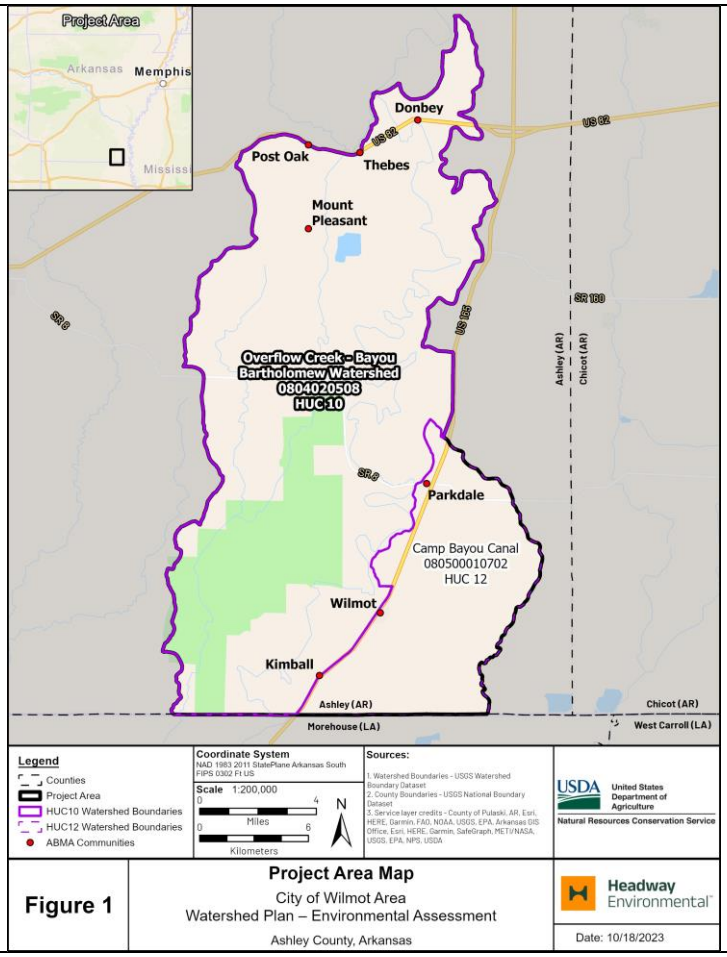
On behalf of

- Natural Resources Conservation Service, USDA
- Arkansas Black Mayors Association
- City of Wilmot, Carolyn Harris, Mayor
- Headway Environmental ™

YOU are invited to a public meeting to discuss flood risk and flood protection in the following communities:

Donbey
Thebes
Post Oak
Mount Pleasant
Parkdale
Wilmot
Kimball

… and surrounding areas, as shown in map at right



Thursday November 16, 2023
6:00 pm to 7:45pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot AR

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a-6. Project Fact Sheet

USDA United States Department of Agriculture

City of Wilmot Area Watershed Plan-EA Project - Ashley County Arkansas

Scoping Notice - Fact Sheet



Project Information

The United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS), with assistance of the Arkansas Black Mayors Associatiation as the project sponsor, is considering proposed improvements for the City of Wilmot, the surrounding small communities of Post Oak, Thebes, Donbey, Mount Pleasant, Parkdale, and Kimball located in the one 12-digit (Camp Bayou) and one 10-digit (Overflow Creek) HUC watersheds that encompass these communities in Ashley County, Arkansas. A wide range and combinations of both structural and non-structural improvement alternatives, including nature-based solutions (NBS) will be developed and evaluated to provide flood prevention of both the communities and the surrounding agricultural areas, along with ancillary benefits of improvements to watershed protection, water quality management, and agricultural water management within the project area watersheds.

USDA-NRCS will hold a public meeting to provide information about the proposed project and to collect comments. Technical studies are scheduled to take place during the first winter of 2023-2024, with a Draft Plan-EA circulated to the public and agencies for review in the summer 2024.

At this time, USDA-NRCS is requesting comments on the project to identify issues and resource sensitivities. Written comments can be submitted during the open period starting July 18, 2023, and ending on December 18, 2023. Comments must be received or post-marked by December 18, 2023.

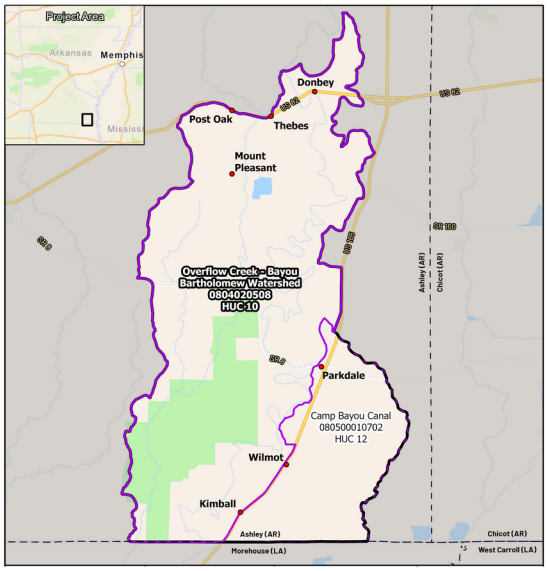
Public Meeting

The public is invited to attend, discuss, and submit a comment during the public meeting:

Thursday, November 16
6:00 to 7:45 pm

Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

Project Area Overview



Additional information can be found at the ABMA's project website:

https://www.abmawatershedproject.com/projects/city-of-wilmot

How to Submit a Comment

All comments should be directed to Lee Forbes

Headway Environmental

P.O. Box 1282
Humble, TX 77347
E-Mail:
WilmotWatershedProject
@headwayenviro.com
Phone: (832) 544-0482

Comments may be mailed or emailed to the addresses listed above or submitted during the public meeting.

Arkansas State Office
Natural Resources Conservation Service
nrcs.usda.gov/

USDA is an equal opportunity provider, employer, and lender.

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Attachment B.
Scoping Meeting Materials

b-1. Meeting Presentation Slides
b-2. Public Comment Flooding Survey

b-1. Meeting Presentation Slides



ARKANSAS BLACK MAYORS ASSOCIATION

CITY OF WILMOT AREA WATERSHED IMPROVEMENT PROJECT

Ashley County, Arkansas

Headway Environmental™

DATE: November 16, 2023

LOCATION: Wilmot Community Center, 2764 Hwy 165 South, Wilmot , AR

Arkansas Black Mayors Association

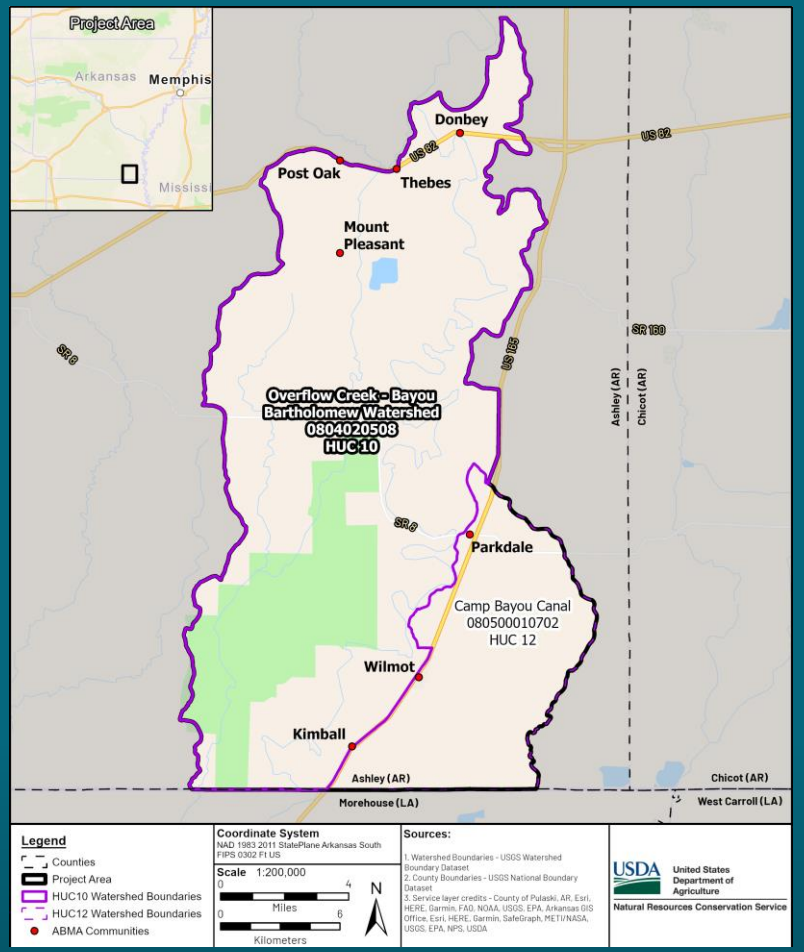


Presentation Outline

- Project Background
- Summary of Preliminary Investigation Findings Report (PIFR)
- The Watershed Planning- Environmental Assessment (Plan EA) Process
- Potential Impacted Resources
- Potential Alternatives
- Plan-EA Project Schedule
- Next Steps

Project Background

- Watershed Projects funded through U.S. Dept. of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Watershed and Flood Prevention Operations (WFPO) Program grants
- Watershed: an area of land where all water flows to a common destination, such as a lake, river, or ocean
- Arkansas Black Mayors Association (ABMA) was awarded $95.9 million for 14 watershed projects, including the City of Wilmot Area and surrounding watersheds and small communities
  - City of Wilmot Area Project funded through current Watershed Plan – Environmental Assessment (Plan-EA) phase
  - Projects with finalized/authorized Plan-EAs more likely to get funded through design & construction
- Project Purpose – Reduce the negative impacts of natural disasters, such as floods, droughts, landslides, and erosion, in targeted areas throughout Arkansas
- Watershed Mitigation projects typically involve a combination of engineering, natural resource management, and community engagement strategies to improve the health and resilience of a watershed.



CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

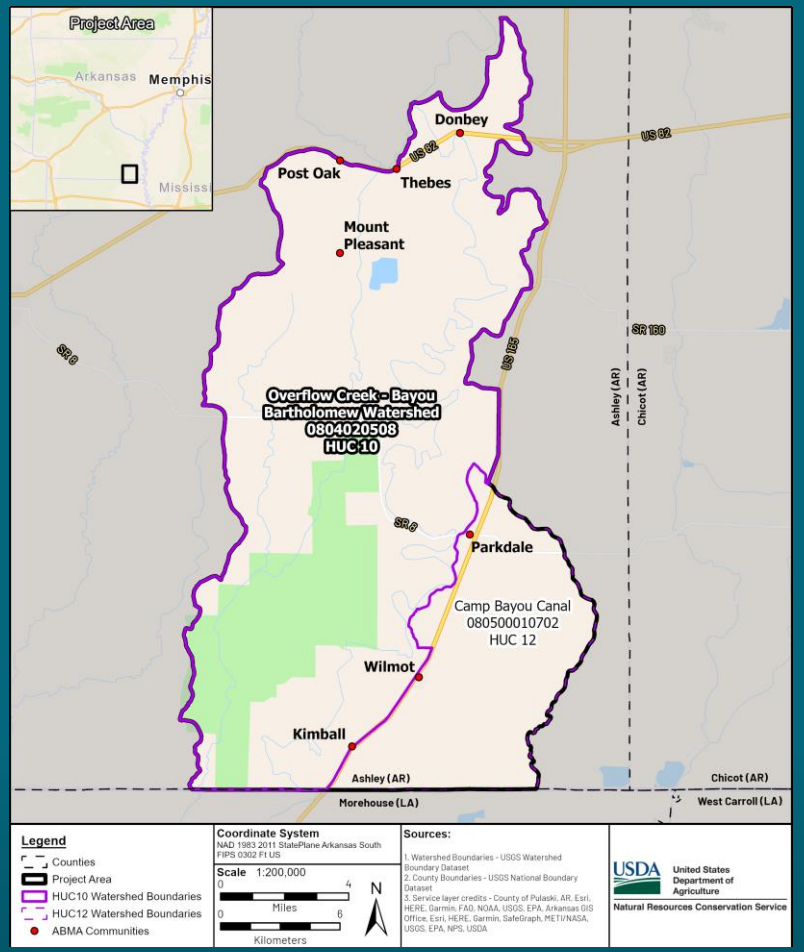
Arkansas Black Mayors Association

Project Background

- Projects involve four phases
  - Preliminary Investigation Findings Report (PIFR) - COMPLETED
  - Watershed Plan – Environmental Assessment – CURRENT PHASE
  - Design
  - Construction

- Project Watersheds
  - Overflow Creek (HUC – 10 #0804020508)
  - Camp Bayou (HUC – 12 #080500010702)

- Project Communities
  - Wilmot
  - Post Oak
  - Thebes
  - Donbey
  - Mount Pleasant
  - Parkdale
  - Kimball

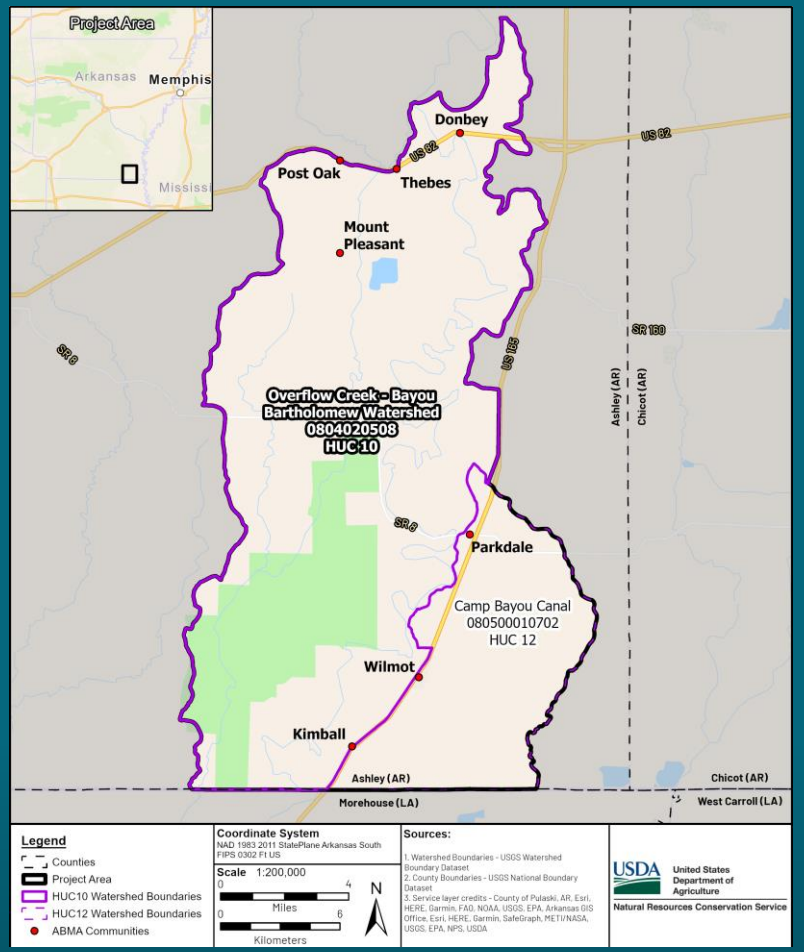


CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayors Association

Summary of PIFR

- Objective of PIFR – confirm the proposed project meets the general authorized purposes of the NRCS WFPO funding
- Purpose: The primary purpose of this project is flood prevention (flood damage reduction) for landowners, agricultural producers, communities and municipalities. This project may contribute to reduction of downstream flood peaks and the effects of erosion and sedimentation by floodwaters.
- Need: Watersheds have been identified by landowners, agricultural producers, communities and municipalities experiencing reported recurring flooding. Community leaders have indicated that runoff water from surrounding agricultural properties may contribute to flooding. Citizens have reported flooding to private property potentially caused by inadequate drainage infrastructure.



CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayors Association

Summary of PIFR

PIFR Alternatives

Alternative No. 1 - No Action/Future Without Project

Alternative No. 2 – Structural

- Cleanout /enlargement of existing drainage ditches/canals, excavation of new ditches
- Replacement of undersized culverts, culvert cleanout, new culverts
- Construction of detention ponds or off-channel storage (including irrigation reservoirs) to detain floodwaters (to reduce peak flows farther downstream and for settling sediment).

Alternative No. 3 – Non-Structural

- Conservation/Regenerative Agriculture (e.g., no-till, cover crops)
- Riparian corridor restoration (i.e., floodplain reconnection and vegetation)
- Floodproofing structures (watertight shields for windows and doors, sealants and membranes to reduce seepage of floodwaters through walls, reinforcement of walls to withstand the pressures from floodwaters)
- Buyouts

Alternative No. 4 – "Pie-in-the-Sky" (All of Alts. 2 & 3 – Unlimited Funding)



The Watershed Planning-Environmental Assessment (Plan-EA) Process

NRCS Nine-Step Watershed Project Planning Protocol

1. Identify problems (e.g., flooding) and opportunities (PIFR)
2. Determine reasonable objectives (PIFR)
3. Inventory resources (Plan-EA)
4. Analyze resource data (Plan-EA)
5. Formulate alternatives (Plan-EA)
6. Evaluate alternatives (Plan-EA)
7. Make decisions and complete the plan (Plan-EA)
8. Implement the plan (Design → Construction)
9. Evaluate the plan

CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayors Association

Potential Impacted Resources

Affected Environment/Existing Conditions

1. Physical environment
2. Biological environment
3. Ecological environment
4. Economic environment
5. Social environment



CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayors Association

Potential Alternatives

Federal Principals, Requirements, and Guidelines (PR&G) Relative to Alternatives

Federal Objectives

- Federal water resources investments shall reflect national priorities, encourage economic development, and protect the environment by the following:
  - Maximize sustainable economic development;
  - Avoid the unwise use of floodplains and flood-prone areas
  - Protect and restore the functions of natural systems and mitigate any unavoidable damage to natural systems
- Federal investments in water resources should strive to maximize public benefits, with appropriate consideration of costs
- Public benefits encompass the following goals (with NO hierarchal relationship) :
  - Environmental
  - Economic
  - Social

Guiding Principles

- Healthy and Resilient Ecosystems
- Sustainable Economic Development
- Floodplains (avoid unwise use)
- Public Safety (reduce risks to public health and safety)
- Environmental Justice
- Watershed Approach

Potential Alternatives

Multi-Criteria Decision Analysis (MCDA) Tool

Scoring
(How well does alternative meet the criteria)

5 = Excellent
4 = Good
3 = Satisfactory/Average
2 = Below Average
1 = Poor

Alternatives	CRITERIA																				Weighted Criteria Score Totals	Ranking
	Implementation Practicability		Relative Cost		Economic Feasibility		Ability to Fund		Net Hydrologic Effects		Sustainability		Impacts to Water Rights and Existing Compacts		Ease of Permitting		Public Acceptability		Synergy			
	WF=15%		WF=13%		WF=15%		WF=2%		WF=13%		WF=5%		WF=8%		WF=0%		WF=18%		WF=11%			
	Score	Score x WF	Score	Score x WF	Score	Score x WF	Score	Score x WF	Score	Score x WF	Score	Score x WF	Score	Score x WF	Score	Score x WF	Score	Score x WF	Score	Score x WF		
Water Management Opportunites																						
Storage and Flood Control																						
"Small" Reservoir "A" - Irrigation & Recreation	2	0.30	1	0.13	2	0.30	3	0.06	5	0.65	2	0.09	1	0.08	1	0.00	2	0.36	3	0.34	6.76	8
"Small" Reservoir "B" - Flood Control & Irrigation	3	0.45	1	0.13	1	0.15	4	0.07	4	0.52	2	0.09	2	0.17	2	0.00	3	0.53	5	0.56	8.94	7
Other Water Management Opportunities																						
Upland Well "A" with AST	3	0.45	3	0.39	3	0.45	2	0.04	4	0.52	3	0.14	3	0.25	3	0.00	4	0.71	3	0.34	11.07	5
Upland Well "B" with Stock Tank	4	0.60	2	0.26	3	0.45	2	0.04	3	0.39	2	0.09	3	0.25	4	0.00	5	0.89	3	0.34	11.91	3
Irrigation Rehabilitation Opportunities																						
Farm "A" - Replace Diversion Structure	5	0.75	5	0.65	5	0.75	5	0.09	3	0.39	2	0.09	3	0.25	4	0.00	5	0.89	1	0.11	17.89	1
Farm "B" - Line Conveyance Channels	4	0.60	3	0.39	4	0.60	5	0.09	2	0.26	1	0.05	2	0.17	4	0.00	4	0.71	2	0.22	10.63	6
Best Management Practices																						
Site '"A" - Wetland Restoration	2	0.30	2	0.26	3	0.45	4	0.07	2	0.26	5	0.23	5	0.42	3	0.00	5	0.89	4	0.45	12.79	2
Site "B" Stream Restoration/Stabilization	1	0.15	2	0.26	3	0.45	4	0.07	4	0.52	4	0.19	5	0.42	4	0.00	4	0.71	4	0.45	11.90	4

CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayors Association

Potential Alternatives

Multi-Criteria Decision Analysis (MCDA) Tool

OBJECTIVES

Weighting Factor (How important is this objective, on a scale of 1 thru 5, where: 5 = Most Important, 1 = Least Important)

Score (How well does alternative meet the objective, on a scale of 1 thru 5, where: 1 = Strongly, 5 = Poorly/Not At All)

Alternative Description	GOAL 1 Regional Demonstration of Multi-Function Watershed Restoration Project Feasibility						GOAL 2 Flood Risk Mitigation							GOAL 3 Infrastructure Protection									
Objective	Tie Other Project Goal Success to Watershed-Scale Project	Maximize Urban Naturalized Channel Design	Incorporate Innovative/NBS Stormwater BMPs	Provide Access for Teachable Spaces	Potential for Stormwater/Flood Resiliency Funding	Incorporate "Fly Links" Fishing Course	Reduce "Base Flood Elevation (BFE)	Prevent Increase in Velocity of BFE Discharge	Widen Floodway Corridor	Beneficial Use of Ineffective Flow Areas	Increase Flood Storage	Increase Stormwater Infiltration	Increase Opportunities for Flood Mitigation Buyout	Provide Grade Control for Bridges	Provide Grade Control for Buried Pipe/Utility Crossings	Prevent Lateral Channel Migratrion Near Wiers	Prevent Lateral Channel Migration Near Trails/Structures	Conserve Flood Conveyance Capacity	Minimize Maintenance of Sediment Deposits	Minimize Impacts to Power Lines	Protect and Maintain Utility crossings	Protect and Maintain Trail Crossings	Minimize Removal of Traffic Bridges
Weighting Factor	5	3	3	2	2	5	2	3	2	3	3	5	3	3	5	5	3	1	2	3	5	5	3
Do nothing	5	5	5	4	5	5	4	1	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5
4 Stage Urban Channel Restoration	1	1	2	1	1	4	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1
River Restoration, Raised Floodplain and Side Channel Restoration with Oxbow ponds and Revegetation (Priority 1)	1	4	1	1	1	1	3	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1	1
River Restoration at the Existing Bankfull and Floodplain Stage and Side Channel Restoration with Oxbow ponds and Revegetation (Priority II)	1	1	2	2	2	4	1	1	1	1	2	2	2	2	1	1	2	1	1	2	2	1	1
River Restoration and Enhancements to Floodplain and Side Channel Restoration with Oxbow Ponds and Revegetation with Limited Re-Alignment (Priority III)	3	2	4	2	3	5	2	2	2	2	4	3	3	3	1	1	2	2	2	2	2	2	2
Channel Armoring and Protection without Floodplain Reconnection	4	4	4	4	3	5	4	2	5	3	5	5	4	3	1	1	1	2	2	2	2	2	3
Buffer Planting	4	3	5	5	5	5	4	2	5	4	3	3	3	5	5	4	4	2	3	4	4	4	2
Floodplain Restoration	3	3	4	4	5	3	4	1	1	4	1	1	4	3	4	4	3	1	3	3	3	3	3
Beaver Dam Analog	4	4	4	3	5	1	4	2	2	3	2	2	3	2	2	4	3	2	3	3	3	3	2

Alternative Description	GOAL 4 Community Connectivity										GOAL 5 Aesthetic/Visual Improvement											
Objective	Contiguous Trail Connectivity	Tie Into Regional Trails	Stimulate Community Excitement	Enhance Lighting and Saftey	Provide/Maintain 5 ft. Buffer Between Trails and Channel	Provide ADA-Compliant Access	Improve Recreational Biking Access	Improve Recreational Fishing Opportunities	Provide Soft Trails with Spurs to Natrual Vistas/Features	Provide In-Channel Stream Crossing Structures	Reduce Unsightly Bank Erosion	Increase Meandering Channels	Removal of Concrete	Removal of Steel Reinforcement	Daylighting of Piped Stream Reaches	Improve Riparian Planting	Beautification of Stormsewer Outfalls	Install Educational Signage	Increase Polinator Plantings	Increase Forage Plantings	Deadfall Removal or Incorporation	Surfical Riprap Removal
Weighting Factor	5	5	3	1	3	3	5	5	3	5	2	3	3	2	2	2	3	1	1	1	1	2
Do nothing	4	4	4	3	3	3	3	5	5	3	5	4	5	5	5	5	5	5	5	5	5	5
4 Stage Urban Channel Restoration	1	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1
River Restoration, Raised Floodplain and Side Channel Restoration with Oxbow ponds and Revegetation (Priority 1)	1	1	1	3	1	2	1	1	2	1	1	1	1	1	1	1	2	1	2	2	1	1
River Restoration at the Existing Bankfull and Floodplain Stage and Side Channel Restoration with Oxbow ponds and Revegetation (Priority II)	1	1	1	1	1	1	1	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1
River Restoration and Enhancements to Floodplain and Side Channel Restoration with Oxbow Ponds and Revegetation with Limited Re-Alignment (Priority III)	1	1	2	2	1	1	1	4	2	1	2	3	3	1	1	2	1	1	1	3	1	2
Channel Armoring and Protection without Floodplain Reconnection	3	3	3	2	2	2	3	5	2	1	4	4	5	1	1	4	1	1	1	1	1	4
Buffer Planting	3	3	3	4	3	4	2	4	3	3	2	4	4	5	5	1	5	2	5	5	5	3
Floodplain Restoration	3	3	2	4	4	3	4	5	4	4	3	5	4	3	2	3	2	1	1	2	4	4
Beaver Dam Analog	2	2	2	3	4	4	4	3	4	4	2	4	4	3	2	3	3	1	2	2	5	3

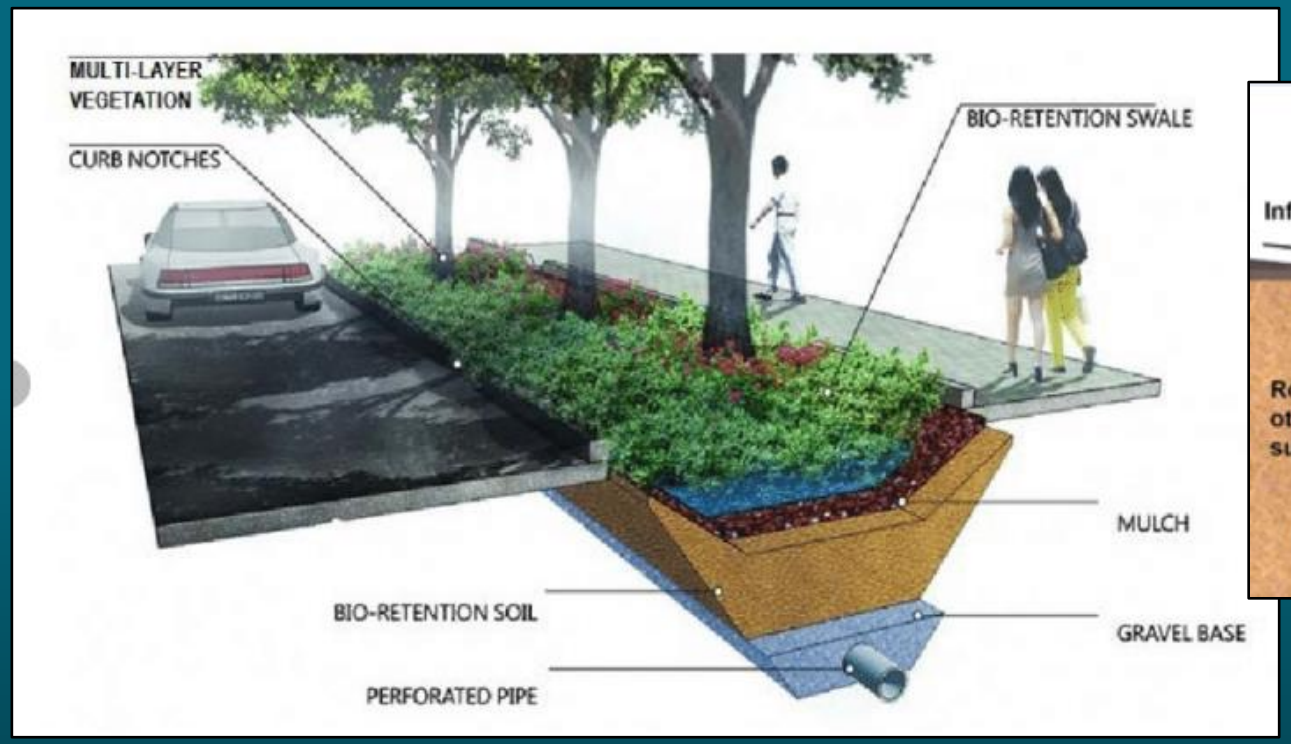
Alternative Description	GOAL 6 Water Quality Improvement						GOAL 7 Local and Regional Land Management and Conservation Goals Implementation								GOAL 8 Riparian Corridor Functional Improvement				GOAL 9 River Morphology Optimization									MCDA Matrix Score	MCDA RANKING
Objective	Phosphorus Reduction	Clean Sediment	Nitrogen Reduction	Metals Reduction	Trash Reduction	Temperature Redution	Avoid Tree Takings on Private Land	Avoid Grading Private Property Lines	Avoid Taking Homes	long term stewardship	Create No-Mow Zones	Reduce Need for Adaptive Management	Decrease Land Acquisition Easements	Eliminate Lateral Channel Migraiton	Increase Riparian Buffer Width	Increase Buffer Plant Diversity	Establish Minimum Buffer	Eradicate Invasive and Exotic Plant Species	Eliminate Aggradation	Maintain Grade Control	Eliminate Degradation	Optimize Sediment Transport	Optimize Floodplain Connectivity	Optimize Pool-Pool Spacing	Optimize Substrate Gradation for Habitat and Morphology	Incorporate Bank Protection/Armoring	Incorporate Nested Channel Features		
Weighting Factor	3	5	3	1	3	2	1	1	1	5	3	5	3	3	3	3	3	1	2	3	3	2	3	3	2	3	3		
Do nothing	5	5	5	5	5	5	1	1	1	3	5	3	2	5	4	4	3	4	3	5	5	4	5	5	4	5	3	912	9
4 Stage Urban Channel Restoration	1	1	2	2	1	1	5	5	4	1	1	2	4	1	2	1	1	1	1	1	1	1	2	1	1	1	1	282	1
River Restoration, Raised Floodplain and Side Channel Restoration with Oxbow ponds and Revegetation (Priority 1)	1	1	1	1	1	1	3	3	5	2	3	2	5	1	1	1	1	1	1	1	1	1	1	1	2	1	3	285	2
River Restoration at the Existing Bankfull and Floodplain Stage and Side Channel Restoration with Oxbow ponds and Revegetation (Priority II)	1	1	2	2	1	1	5	5	4	1	1	2	4	1	2	1	1	1	1	1	1	1	2	1	1	1	2	306	3
River Restoration and Enhancements to Floodplain and Side Channel Restoration with Oxbow Ponds and Revegetation with Limited Re-Alignment (Priority III)	2	2	2	2	2	2	2	3	3	2	1	3	3	2	3	1	1	2	1	1	2	3	3	4	2	1	2	443	4
Channel Armoring and Protection without Floodplain Reconnection	3	2	4	5	4	4	2	1	1	3	3	2	2	2	4	4	3	4	3	3	3	4	5	5	4	1	3	622	6
Buffer Planting	4	2	5	5	3	2	1	1	1	2	2	2	2	3	1	1	3	2	3	3	4	4	5	5	4	3	4	712	8
Floodplain Restoration	1	2	1	1	3	1	2	3	2	3	1	3	4	4	2	1	1	1	5	1	1	5	1	5	5	2	4	613	5
Beaver Dam Analog	1	2	2	2	4	3	3	3	4	4	4	3	3	4	3	3	1	3	4	2	3	5	2	4	4	3	3	622	6

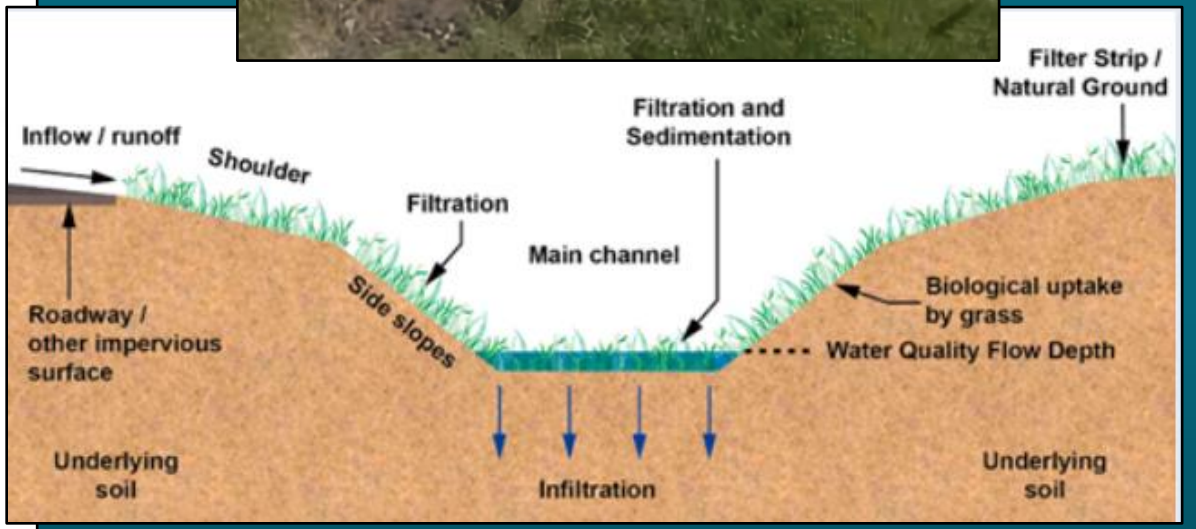
Potential Alternatives

Initial Concepts for Preferred Alternatives

- Ditch cleanout & culvert replacement/repair on drainage ditches
  - Focus on non-natural channel conveyances (e.g., roadside ditches)
  - Use Nature-Based Solutions (NBS) techniques on ditches (e.g., grassed swales, bioretention, etc.)







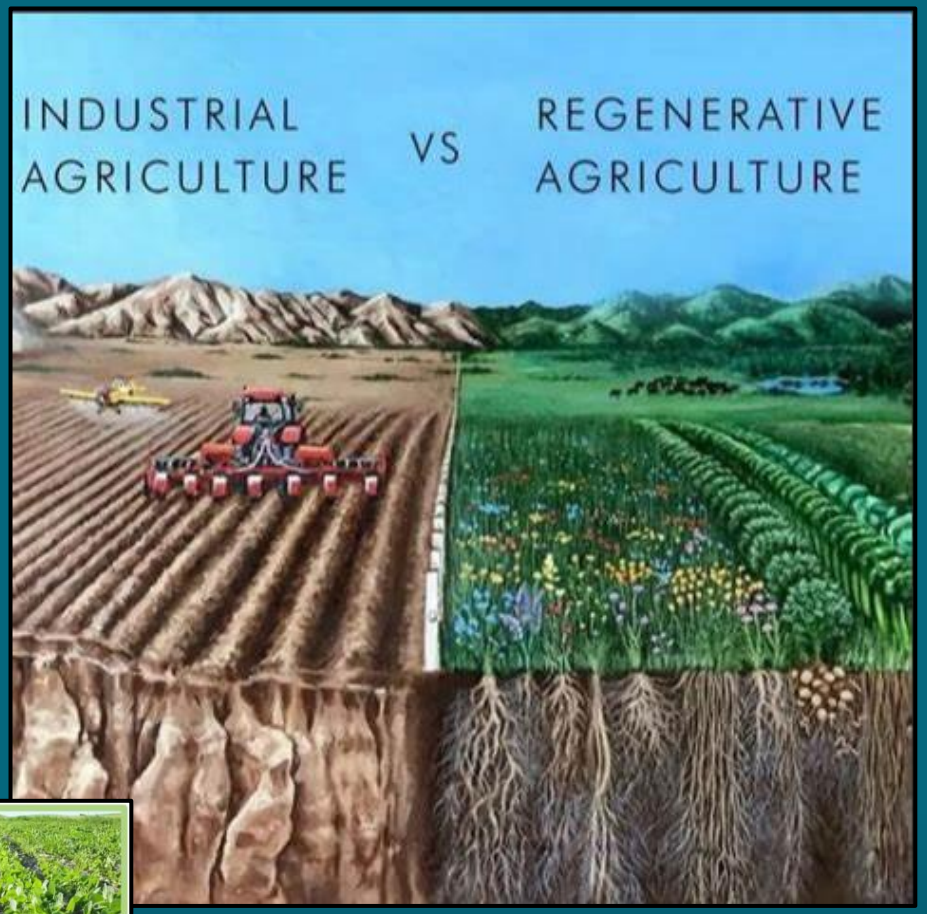
CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

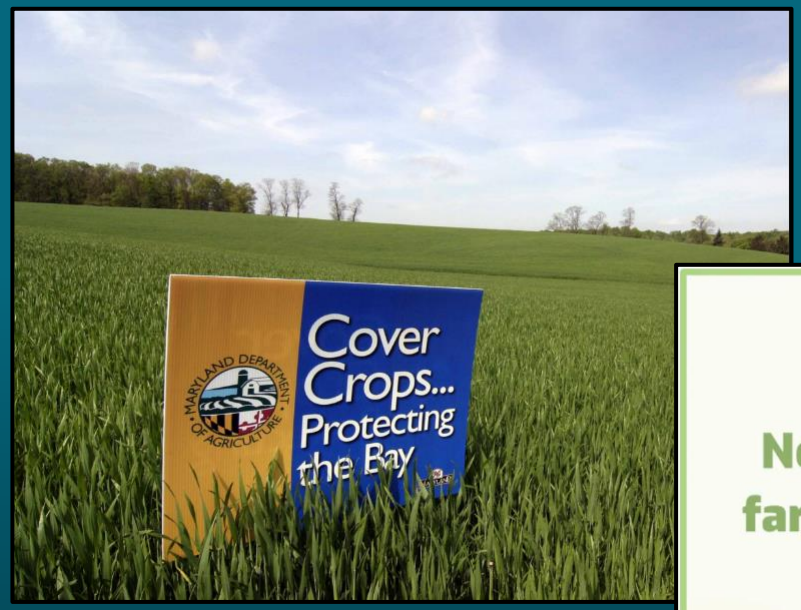
Arkansas Black Mayors Association

Potential Alternatives

Initial Concepts for Preferred Alternatives

- Regenerative agriculture (cover crops, no-till, etc.)
  - Already being implemented in Ashley County with NRCS support (NRCS provided assistance for over 3,000 acres of cover crops in Ashley County in 2020)
  - Restore topsoil and reduce upland erosion and excess sediment in stream/river systems







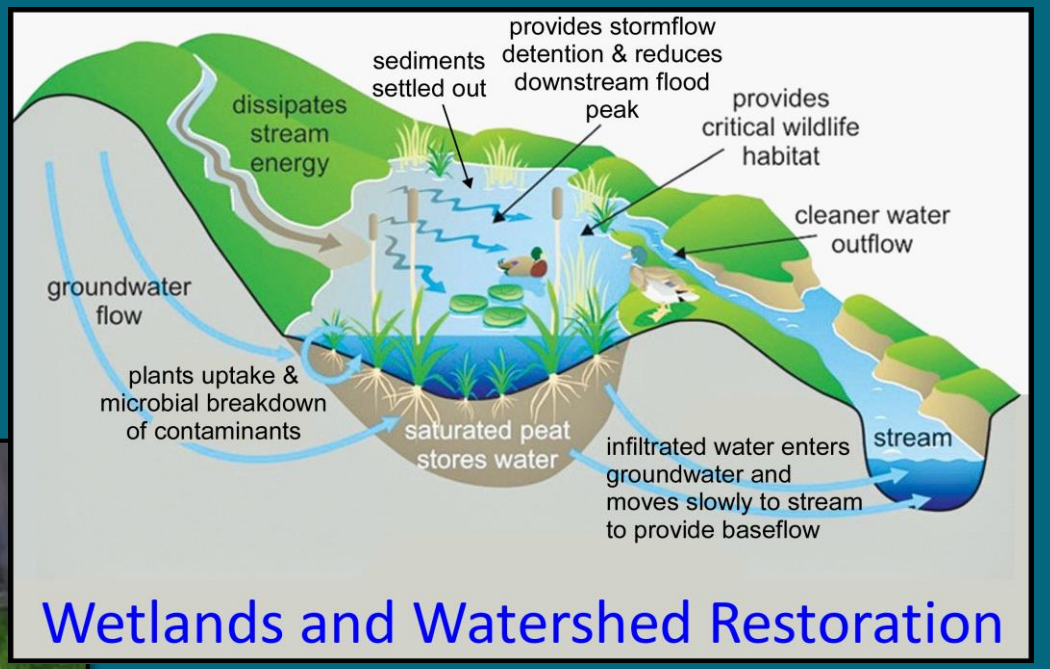
CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayors Association

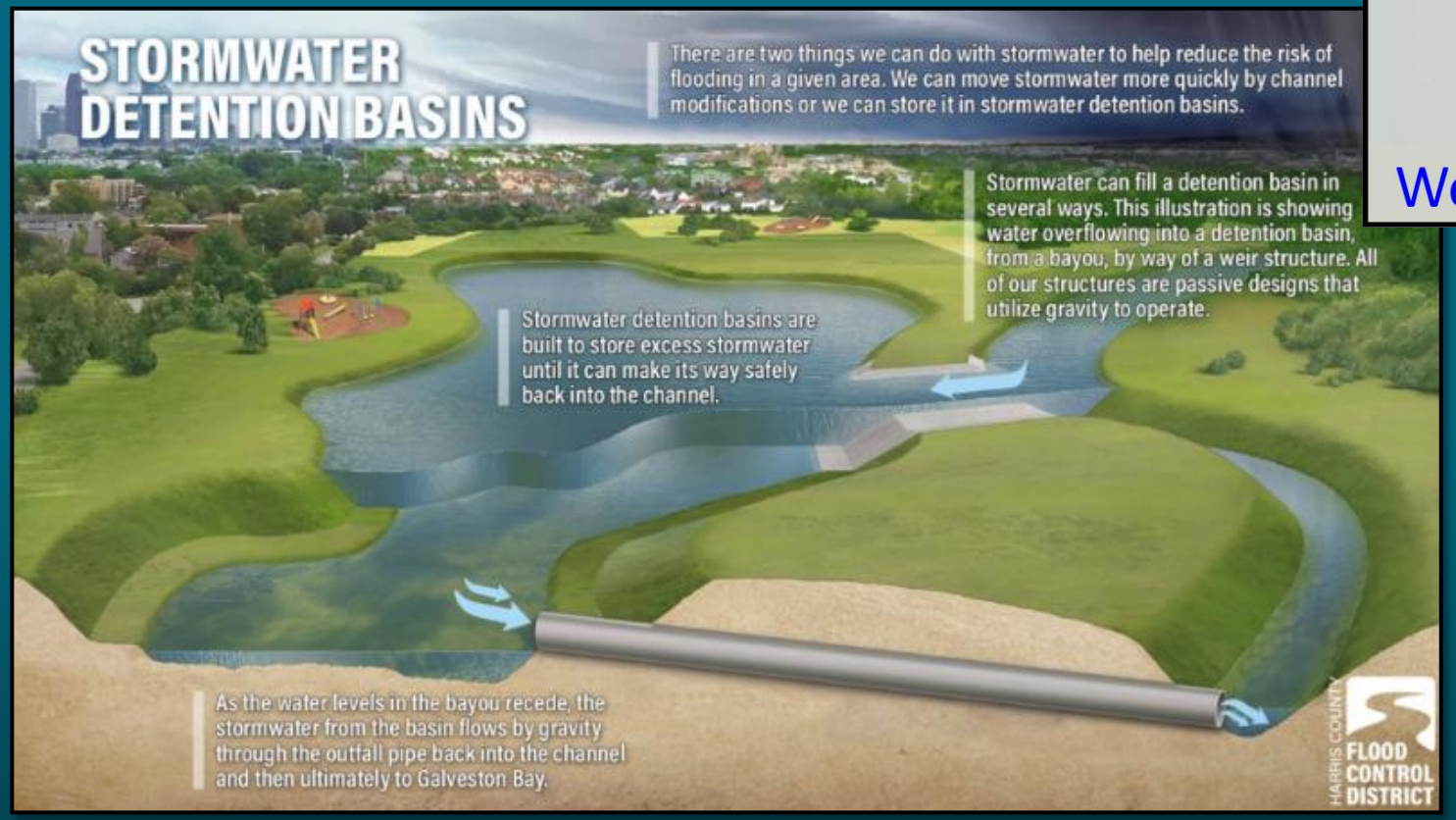
Potential Alternatives

Initial Concepts for Preferred Alternatives

- Headwater wetland restoration and stormwater detention
  - Increased agriculture irrigation and groundwater recharge potential



Wetlands and Watershed Restoration



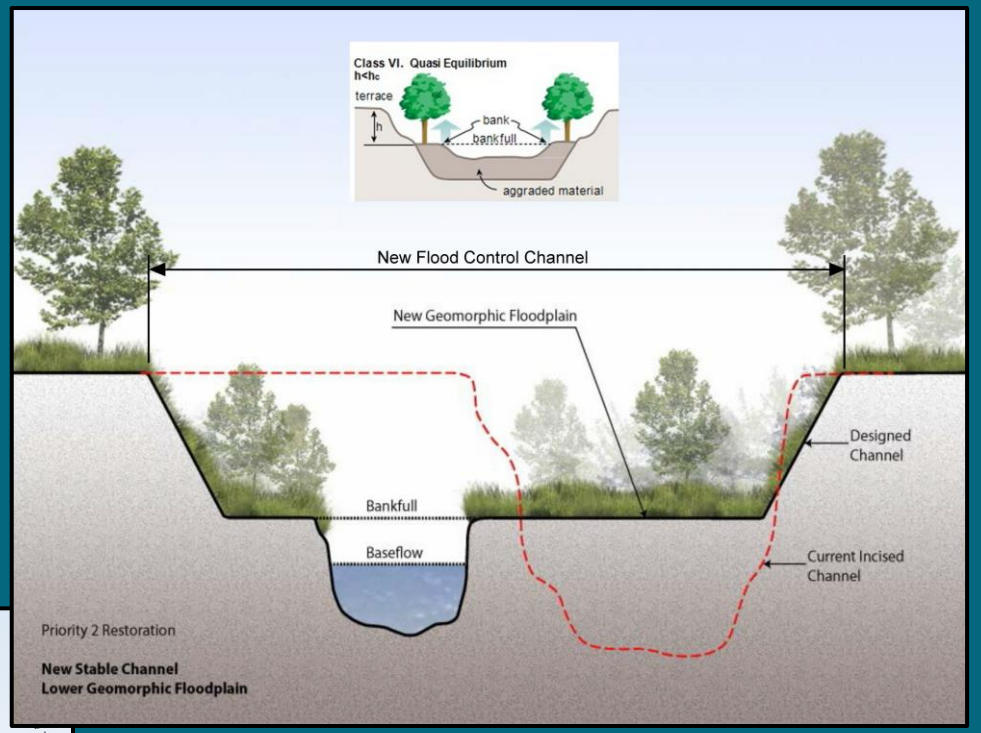
CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

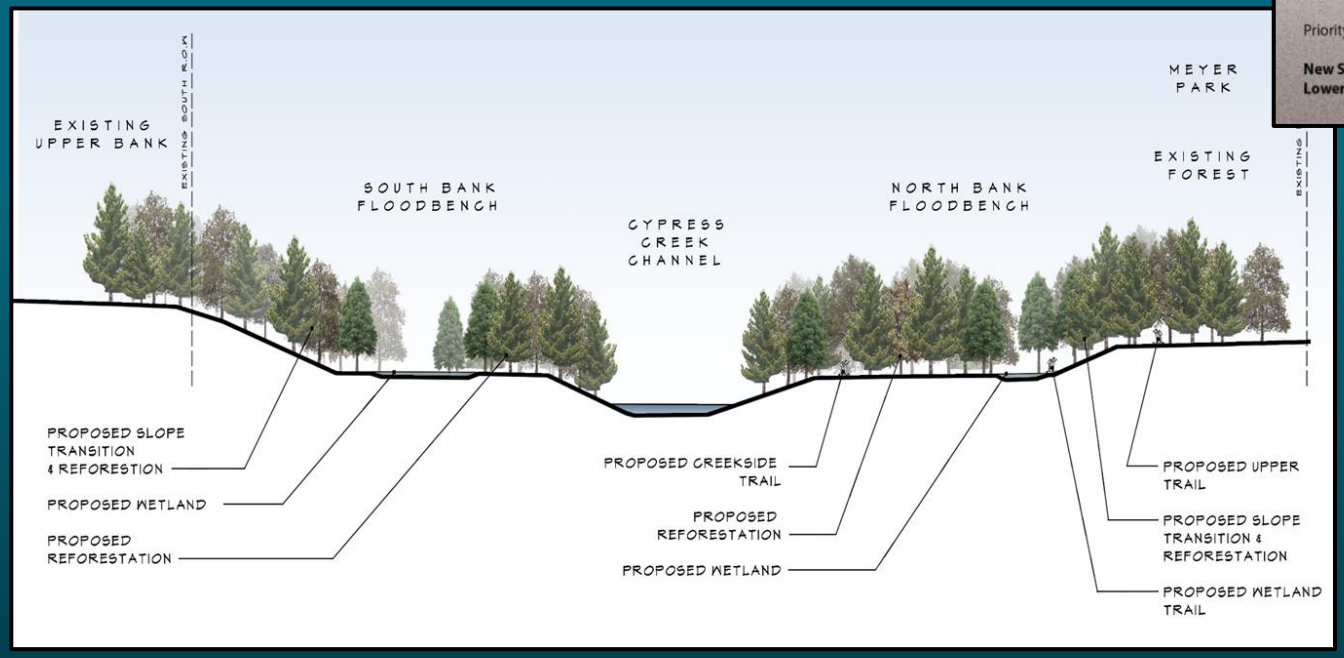
Arkansas Black Mayors Association

Potential Alternatives

Initial Concepts for Preferred Alternatives

- Stream and riparian corridor restoration
  - Re-establish stream connection to active floodplain
  - Reduce in-channel erosion and excess sediment in stream/river systems
  - In developed areas, typically increases in-channel stormwater conveyance capacity and online stormwater storage
  - Riparian wetlands for stormwater detention
  - Potential for greenways and associated connectivity and recreational opportunities





CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

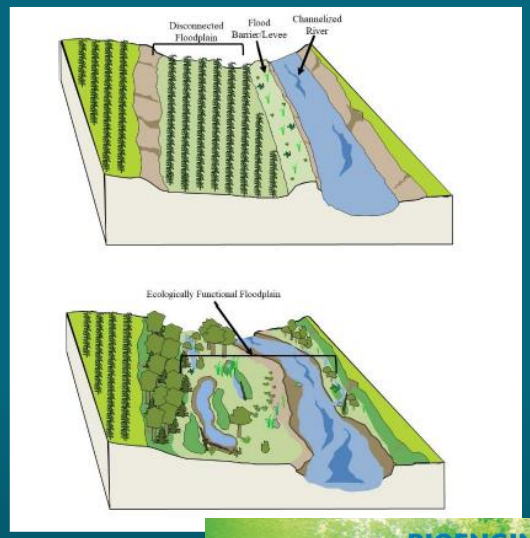
Arkansas Black Mayors Association

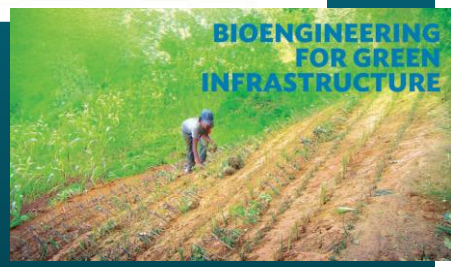
Potential Alternatives

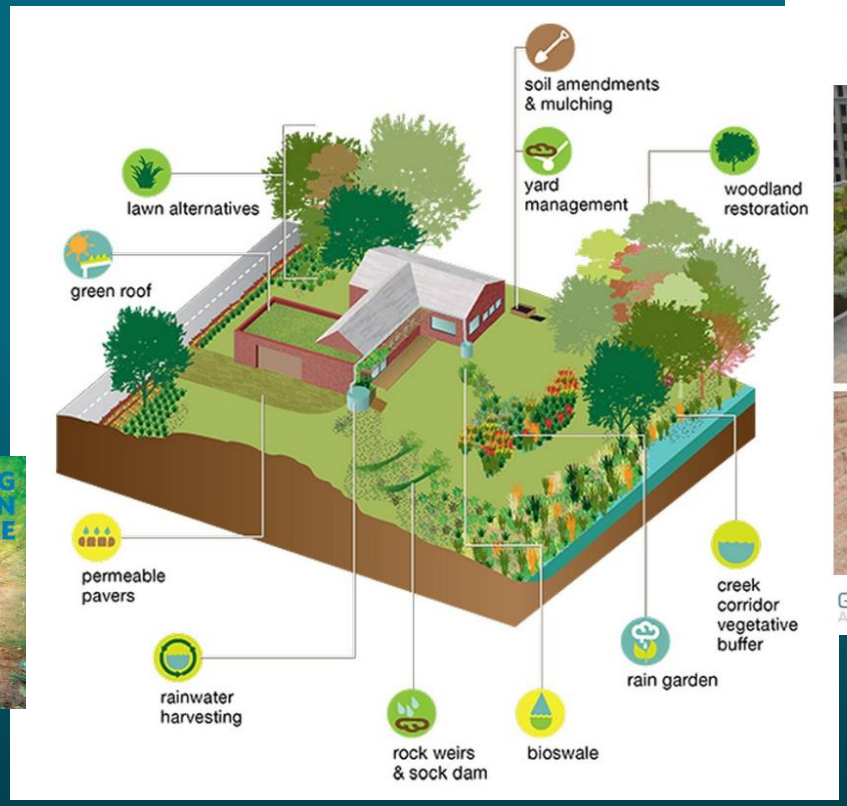
Initial Concepts for Preferred Alternatives

- Floodplain stormwater storage on park and recreational lands
- Other nature-based solutions (NBS – e.g., green infrastructure, low-impact development onsite stormwater mgmt., bioengineering, etc.)

















green infrastructure toolkit

GEORGETOWN CLIMATE CENTER
A Leading Resource for State and Federal Policy

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Arkansas Black Mayors Association

Potential Alternatives

Initial Concepts for Preferred Alternatives

- Re-Establishment of natural drainage paths where past rectification is working against natural topography
- Buyouts
- Inclusion of jobs and training programs focused on NBS/ecological restoration, clean energy, conservation, and climate resiliency

THE WHITE HOUSE

SEPTEMBER 20, 2023

FACT SHEET: Biden-Harris Administration Launches American Climate Corps to Train Young People in Clean Energy, Conservation, and Climate Resilience Skills, Create Good-Paying Jobs and Tackle the Climate Crisis





Plan-EA Project Schedule

Plan-EA Milestones	Date
Complete public scoping meeting	11/14/23
Identify resource concerns	12/1/2023
Identify and evaluate alternatives	3/1/2023
Submit Draft Plan-EA for NRCS State Office review	5/1/2024
Revise and submit Draft Plan-EA for NWMC review	6/1/2024
Revise and distribute Plan-EA for public comment	12/1/2024
Prepare final Plan-EA for Authorization	2/1/2025.

CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayors Association

Next Steps

- Identify problem areas and potential resource concerns and impacts
- Develop and evaluate alternatives
- Finalize Plan-EA for NRCS and public comment



CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayors Association

We need your help and input!

Identify problem areas



COMMUNITY SURVEY

Contact Us:

WilmotWatershedProject@headwayenviro.com

Please send us any additional information, photos, or important information to the email address above.

ARKANSAS BLACK MAYORS ASSOCIATION

City of Wilmot Area Watershed Improvement Project

How To Use This Survey:
Please answer the questions to describe a single incident related to drainage challenges or flooding. You may make more than one submission, but please submit only one survey per location.

Full Name:

Phone: Email Address:

Address: City:

Zip Code: Push Pin Color & Number:

1. What is your preferred way for us to keep in touch with you?
   - ☐ Email ☐ Text ☐ Phone Call
2. Are you interested in being an active member of the outreach team?
   - ☐ Yes ☐ No
3. What type of drainage challenges or flooding are you experiencing at this location?

Select all that apply:

- ☐ Standing water on road
- ☐ Roadside ditch clogged or damaged
- ☐ Standing water in unpaved areas
- ☐ Roadside ditch culvert damaged or undersized
- ☐ Creek/River under road through culverts out of banks upstream
- ☐ Creek/River under road through bridge out of banks upstream
- ☐ Creek/River out of its banks
- ☐ Detention pond overflowing
- ☐ Water in home or business

4. How long have you experienced flooding at this address?
   - ○ 1-5 years ○ 6-10 years ○ 11 years or more
5. How frequently does this happen?
   - ○ Only after a very heavy (or record) rainfall ○ Occasionally when it rains, but not every time ○ Every time it rains
6. Are you experiencing direct flooding or is the flooding nearby?
   - ○ Direct ○ Nearby
7. On a scale of 1-5, how would you rate the worst case scenario you've seen in this location? (Where 1 is a nuisance and 5 is major damage or hazard?)
   - ○ 1 ○ 2 ○ 3 ○ 4 ○ 5
8. What kinds of impact or damage do you see in this location?

Select all that apply:

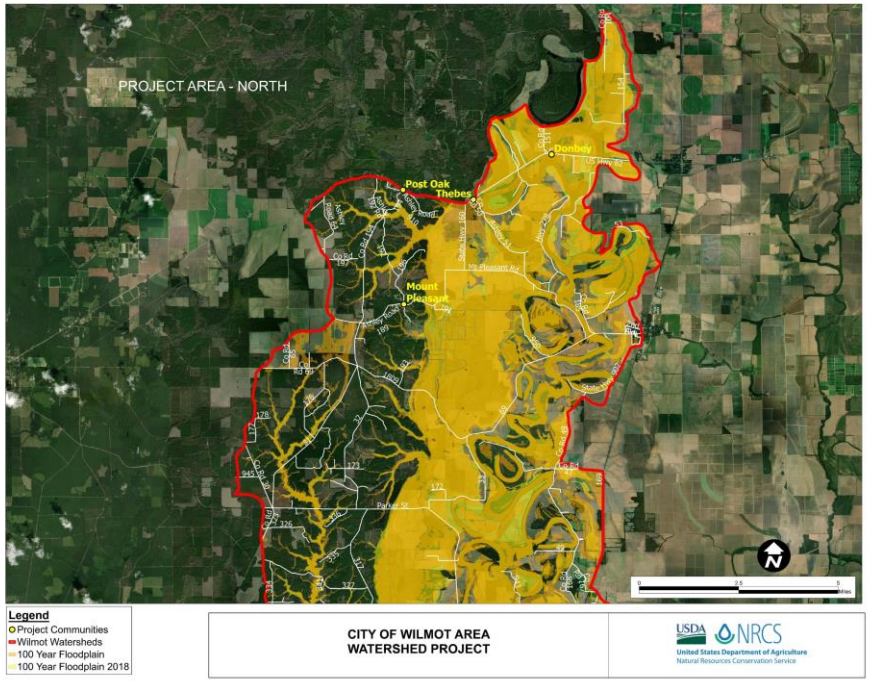
- ☐ No permanent damage
- ☐ Some damage to buildings and/or infrastructure
- ☐ Erosion and damage to buildings and/or infrastructure
- ☐ Safety hazard
- ☐ Creek out of its banks
- ☐ Erosion

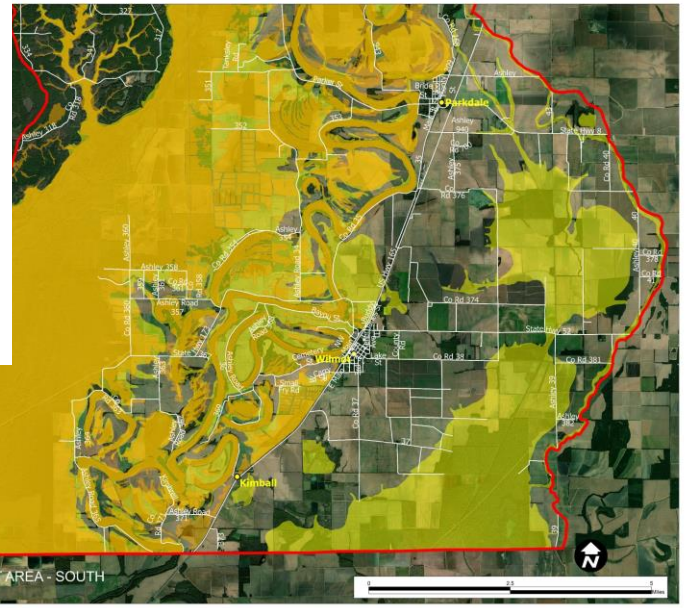
9. Please email any digital photos of the problem along with your name and address to: WilmotWatershedProject@headwayenviro.com

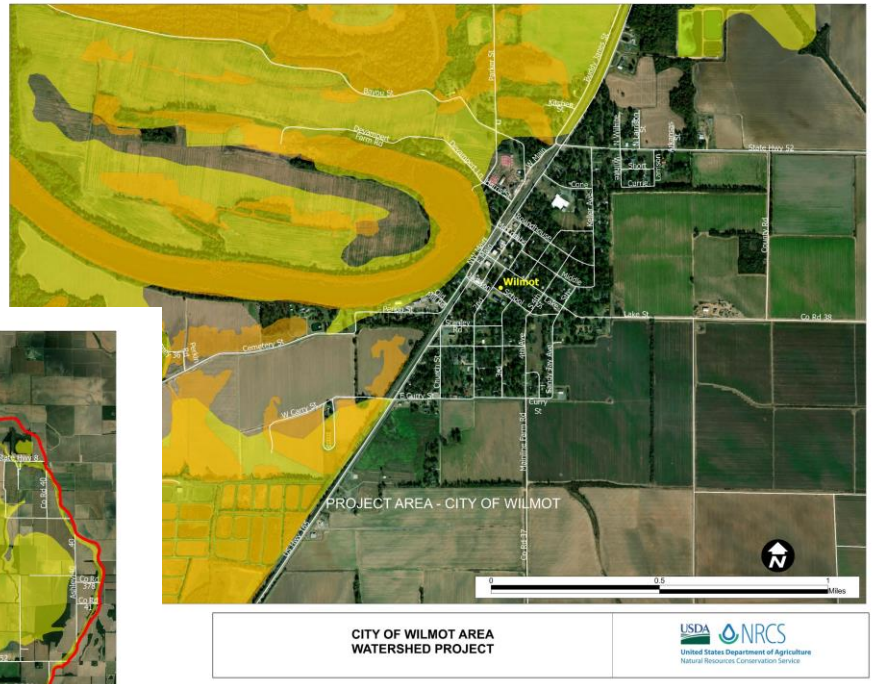
CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

We need your help and input!

Identify problem areas







CITY OF WILMOT AREA
WATERSHED IMPROVEMENT PROJECT

Arkansas Black Mayor Association

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b-2. Public Comment Flooding Survey



COMMUNITY SURVEY

Contact Us:

WilmotWatershedProject@headwayenviro.com

Please send us any additional information, photos, or important information to the email address above.

ARKANSAS BLACK MAYORS ASSOCIATION

City of Wilmot Area Watershed Improvement Project

How To Use This Survey:
Please answer the questions to describe a single incident related to drainage challenges or flooding. You may make more than one submission, but please submit only one survey per location.

Full Name:

Phone:

Email Address:

Address:

City:

Zip Code:

Push Pin Color & Number:

1. What is your preferred way for us to keep in touch with you?

☐ Email ☐ Text ☐ Phone Call

2. Are you interested in being an active member of the outreach team?

☐ Yes ☐ No

3. What type of drainage challenges or flooding are you experiencing at this location?

Select all that apply:

- ☐ Standing water on road
- ☐ Roadside ditch clogged or damaged
- ☐ Standing water in unpaved areas
- ☐ Roadside ditch culvert damaged or undersized
- ☐ Creek/River under road through culverts out of banks upstream
- ☐ Creek/River under road through bridge out of banks upstream
- ☐ Creek/River out of its banks
- ☐ Detention pond overflowing
- ☐ Water in home or business

4. How long have you experienced flooding at this address?



1-5 years | 6-10 years | 11 years or more

5. How frequently does this happen?



Only after a very heavy (or record) rainfall | Occasionally when it rains, but not every time | Every time it rains

6. Are you experiencing direct flooding or is the flooding nearby?



Direct | Nearby

7. On a scale of 1-5, how would you rate the worst case scenario you've seen in this location? (Where 1 is a nuisance and 5 is major damage or hazard?)



1 | 2 | 3 | 4 | 5

8. What kinds of impact or damage do you see in this location?

Select all that apply:

- ☐ No permanent damage
- ☐ Some damage to buildings and/or infrastructure
- ☐ Erosion and damage to buildings and/or infrastructure
- ☐ Safety hazard
- ☐ Creek out of its banks
- ☐ Erosion

9. Please email any digital photos of the problem along with your name and address to: WilmotWatershedProject@headwayenviro.com

Attachment C.
Public Comments

c-1. Public Comments

c-1. Public Comments

City of Wilmot Watershed Plan-Environmental Assessment Public Scoping Comments

Respondent	Approximate Location of Flooding		What type of drainage challenges or flooding are you experiencing at this location?											How long have you experienced flooding at this address?			How frequently does this happen?			Are you experiencing direct flooding or is the flooding nearby?	
	X coordinate	Y coordinate	Standing water on road	Roadside ditch clogged or damaged	Creek/River out of its banks	Water in home or business	Some water in home or business	Lots of water in home or business	Roadside ditch culvert damaged or undersized	Standing water in unpaved areas	Detention pond overflowing	Creek/River under road through culverts out of banks upstream	Creek/River under road through bridge out of banks upstream	Road underwater	1-5 Years	6-10 Years	11 years or more	Only after a very heavy (or record) rainfall	Occasionally when it rains, but not every time	Every time it rains	Direct	Nearby
1	-93.487093	33.350636												X	X			X				X
2	-91.566772	33.062823	X				X			X						X			X		X	
3	-91.564268	33.055922	X											X			X			X		X
4	-91.572018	33.053309	X				X			X	X			X			X		X			X
5	-91.299547	33.347257	X		X		X	X		X	X			X			X			X	X	
6	-91.576770	33.053812	X											X		X		X				X
7	-91.567102	33.062293								X						X		X				X
8	-91.566180	33.062793						X							X					X	X	
9	-92.275317	34.745348	X								X			X			X			X		X
10	-91.570150	33.063440	X														X	X			X	
11	-91.571390	33.053158	X							X							X	X		X	X	
12	-91.570150	33.063440					X										X			X	X	
13	-91.570493	33.056016	X			X				X				X		X	X			X	X	X
14	-91.568439	33.055492	X											X		X		X			X	
15	-91.548081	33.122230	X		X					X				X		X			X		X	
16	-91.615720	33.011291								X							X		X			X
17	-91.605793	33.049245	X													X		X				X

City of Wilmot Watershed Plan-Environmental Assessment Public Scoping Comments

Respondent	Approximate Location of Flooding		What kinds of impacts or damage do you see in this location?						How would you rate the worst case scenario you have seen at this location?	Please provide a description or any additional information you would like to share
	X coordinate	Y coordinate	No permanent damage	Safety Hazard	Erosion	Some damage to buildings and/or infrastructure	Creek out of its banks	Erosion and damage to buildings and/or infrastructure		
1	-93.487093	33.350636			X				3	
2	-91.566772	33.062823		X		X			5	Home flooded in March 9 2016. Storm drainage flows through sewer system. Water.
3	-91.564268	33.055922		X	X				4	
4	-91.572018	33.053309		X	X		X		3	
5	-91.299547	33.347257		X	X		X		5	
6	-91.576770	33.053812	X	X	X				1	
7	-91.567102	33.062293		X					5	
8	-91.566180	33.062793				X	X		4	
9	-92.275317	34.745348	X						3	
10	-91.570150	33.063440				X			5	
11	-91.571390	33.053158	X	X					3.5	
12	-91.570150	33.063440		X					4	
13	-91.570493	33.056016		X	X	X			4	
14	-91.568439	33.055492		X	X				2	
15	-91.548081	33.122230		X					5	
16	-91.615720	33.011291	X						4	
17	-91.605793	33.049245		X					3	

City of Wilmot Watershed Plan-Environmental Assessment Public Scoping Comments

Respondent	Approximate Location of Flooding		What type of drainage challenges or flooding are you experiencing at this location?											How long have you experienced flooding at this address?			How frequently does this happen?			Are you experiencing direct flooding or is the flooding nearby?	
	X coordinate	Y coordinate	Standing water on road	Roadside ditch clogged or damaged	Creek/River out of its banks	Water in home or business	Some water in home or business	Lots of water in home or business	Roadside ditch culvert damaged or undersized	Standing water in unpaved areas	Detention pond overflowing	Creek/River under road through culverts out of banks upstream	Creek/River under road through bridge out of banks upstream	Road underwater	1-5 Years	6-10 Years	11 years or more	Only after a very heavy (or record) rainfall	Occasionally when it rains, but not every time	Every time it rains	Direct	Nearby
18	-91.570150	33.063440	X													X	X			X	
19	-91.570150	33.063440	X		X					X				X			X			X		X
20	-92.275327	34.745506	X				X	X		X				X			X		X		X	
21	-91.570150	33.063440	X	X	X	X	X	X	X	X							X			X	X	
22	-91.570150	33.063440	X												X	X		X		X		X
23	-91.546580	33.121270					X								X			X			X	
24	-91.546884	33.124492					X								X					X	X	
25	-91.551351	33.122868	X											X			X		X			X
26	-91.570319	33.059048		X													X			X		X
27	-91.570004	33.058513	X	X											X			X				
28	-91.546287	33.121265	X	X		X			X	X						X				X	X	
29	-91.575318	33.065420	X	X		X			X		X					X		X			X	
30	-91.571959	33.054471								X					X					X	X	
31	-91.572818	33.057988	X			X			X								X		X		X	
32	-91.573520	33.057166				X			X	X	X		X				X	X			X	

City of Wilmot Watershed Plan-Environmental Assessment Public Scoping Comments

Respondent	Approximate Location of Flooding		What kinds of impacts or damage do you see in this location?						How would you rate the worst case scenario you have seen at this location?	Please provide a description or any additional information you would like to share
	X coordinate	Y coordinate	No permanent damage	Safety Hazard	Erosion	Some damage to buildings and/or infrastructure	Creek out of its banks	Erosion and damage to buildings and/or infrastructure		
18	-91.570150	33.063440				X			4	
19	-91.570150	33.063440		X	X		X		5	
20	-92.275327	34.745506		X					5	
21	-91.570150	33.063440		X	X	X	X	X	5	3 for 43 red and 5 for black 40
22	-91.570150	33.063440		X					2	
23	-91.546580	33.121270				X			5	
24	-91.546884	33.124492				X			5	
25	-91.551351	33.122868		X		X		X	5	
26	-91.570319	33.059048		X	X	X			3	White56
27	-91.570004	33.058513				X			5	Black78
28	-91.546287	33.121265				X			5	Red 54 to Red 65, Red 38 floods N side whole way
29	-91.575318	33.065420						X	5	Red 53
30	-91.571959	33.054471						X	3	Red 50
31	-91.572818	33.057988			X	X				Red 43 (lake st) to Black 40 (school St); Standing water on road (Red 43)/side, Water in home or business (black 40), roadside ditch culver damaged or undersized (red 43 drainage ditches); erosion of 43 red, some damage to buildings and or infrastructure for black 40
32	-91.573520	33.057166	X			X				

City of Wilmot Watershed Plan-Environmental Assessment Public Scoping Comments

Respondent	Approximate Location of Flooding		What type of drainage challenges or flooding are you experiencing at this location?											How long have you experienced flooding at this address?			How frequently does this happen?			Are you experiencing direct flooding or is the flooding nearby?	
	X coordinate	Y coordinate	Standing water on road	Roadside ditch clogged or damaged	Creek/River out of its banks	Water in home or business	Some water in home or business	Lots of water in home or business	Roadside ditch culvert damaged or undersized	Standing water in unpaved areas	Detention pond overflowing	Creek/River under road through culverts out of banks upstream	Creek/River under road through bridge out of banks upstream	Road underwater	1-5 Years	6-10 Years	11 years or more	Only after a very heavy (or record) rainfall	Occasionally when it rains, but not every time	Every time it rains	Direct	Nearby
33	-91.572263	33.056489				X				X							X	X			X	
34	-91.574395	33.054834	X														X	X				
Summary		**Total**	**23**	**5**	**4**	**7**	**8**	**4**	**5**	**15**	**5**	**0**	**1**	**12**	**7**	**10**	**19**	**15**	**7**	**14**	**20**	**13**
		Average																				

City of Wilmot Watershed Plan-Environmental Assessment Public Scoping Comments

Respondent	Approximate Location of Flooding		What kinds of impacts or damage do you see in this location?						How would you rate the worst case scenario you have seen at this location?	Please provide a description or any additional information you would like to share
	X coordinate	Y coordinate	No permanent damage	Safety Hazard	Erosion	Some damage to buildings and/or infrastructure	Creek out of its banks	Erosion and damage to buildings and/or infrastructure		
33	-91.572263	33.056489				X			4	White58 (school) to White68 (Goodwin)
34	-91.574395	33.054834								Red80, White80,Black99,White61
Summary		Total	5	18	11	15	5	4		
		Average							4.02	

A-2.
Agency Consultations

Table A2-1. Agency Consultation Responses and Correspondences

Agency	Date	Correspondence	Section where comments are discussed
USACE	10/27/2023	Email response from Bryton Hixson to initial invitation to participate as a cooperating agency and that the USACE will attend the upcoming Project preliminary agency scoping meeting.	1.3
	11/21/2023	Tarmiko Graham attended the Project preliminary agency Scoping meeting. Requested the Project team contact them for any USACE-related permitting needs as the Project is developed.	N/A
	11/28/2023	Email request to review the Draft EA when available and to reach out to USACE if the Project team has any questions or needs before then.	7.1.2
	1/3/2024	Headway writes to see if USACE is aware of any other related projects or studies within the Study Area that Headway should be aware of for incorporation into the planning and environmental consequences review for these projects.	1.6
	1/3/2024	Tarmiko Graham responded saying the USACE is unaware of any other related projects in the Study Area.	1.6
USFWS	1/24/2024	Garett Huffstutler will be the USFWS point of contact for Arkansas NRCS ABMA Projects. The USFWS requests that the NRCS reach out to him with questions or concerns regarding the Watershed Project plan and EA.	7.1.1
	2/21/2024	Attended a joint meeting with the Project team, NRCS, and other watershed project teams to discuss potential USFWS involvement and ESA-protected species concerns.	7.1.1
ADPHT Outdoor Recreation Grants Program	11/21/2023	Randy Roberson, Environmental Review Coordinator for the Outdoor Recreation Grants Program, attended the Project preliminary agency scoping meeting.	7.1.2
	11/27/2023	ADPHT provided a list of parks in the Study Area that have received ADPHT grant funding. Parks that have received funding are required to maintain public outdoor recreation for certain time periods.	Section 3.2.23 and 5.3.23
	1/20/2024	Headway emails ADPHT to confirm the location of Wilmot City Park	*N/A*
	1/22/2024	ADPHT provided confirmation of Wilmot City Park boundaries.	*N/A*
	4/18/2024	Headway reaches out to ADPHT on behalf of the USDA-NRCS-funded City of Wilmot Area and City of Eudora Watershed Plan-EA projects to share preliminary concept design plans, request feedback	Section 3.2.23 and 5.3.23

Agency	Date	Correspondence	Section where comments are discussed
		on proposed project activities, particularly within Wilmot City Park, and provide information on roadside drainage ditch maintenance near the City of Eudora Park, inviting any questions or comments.	
	5/20/2024	Headway and Randy Roberson had a phone call to discuss potential Project impacts to Wilmot City Park. ADPHT has concerns about potential impacts to the walking trail, trail bridge crossing, and any other facilities/park amenities impacts to Wilmot City Park. The Project design team will provide ADHPT with Project plans as available.	
	5/24/2024	Randy Roberson replied to proposed concept design plans stating, “Based on the information provided for the City of Wilmot, it appears that the proposed drainage improvements will directly affect a public outdoor recreation site in the City of Wilmot. We understand the design team is aware of the existing park and that the proposed project could affect park land and resources to include existing roads, walking trails, parking facility and ballfield We highly recommend working with the City of Wilmot to develop and refine project design to minimize / eliminate negative effects to park land and facilities.”	Section 3.2.23 and 5.3.23
	5/24/2024	Headway replies to Randy Roberson that the Project design team will work with Mayor Harris to avoid or minimize any impacts to Wilmot City Park. The design team will provide update Project plans to ADPHT when available.	Section 3.2.23 and 5.3.23
ArDOT	3/28/2024	ArDOT accepts the invitation to participate in the NRCS NEPA processes for the 14 ABMA Watershed projects. “ArDOT’s anticipated level of NEPA involvement includes the review of proposed alternatives, environmental analyses, and design plans for compliance and compatibility with current highway design standards, hydraulic models, and future construction…” ArDOT permits will be required for projects within ArDOT ROW.	7.1.2
	5/14/2024	Karen McCurdy, on behalf of the NRCS, introduces Susan Staffeld who is the liaison to ARDOT for the ABMA Watershed projects.	N/A
	5/14/2024	Headway responds to Susan Staffeld letting her know that Headway expects to have its 10-percent (Concept/Planning Design) Plan Sets completed by the end of the week and will immediately send to Susan for review along with a KMZ file of the layouts for Google Earth Pro.	N/A
		At this time, the NRCS and ArDOT have a verbal agreement that ArDOT will assume maintenance	7.1.2

Agency	Date	Correspondence	Section where comments are discussed
		costs for any works of improvements permitted in their ROW. The agreement will be added to the attachments of the Plan-EA once complete.	
NRCS	1/3/2024	Headway writes to inquire if NRCS is aware of any related projects or studies that should be considered in the planning and environmental consequences review.	1.6
	1/4/2024	Karen McCurdy, on behalf of the NRCS, provided several watershed plans completed in the 1950's and 1960s in the Study Area.	1.6
Ashley County Judge	1/3/2024	Headway writes to inquire if the County is aware of any related projects or studies that should be considered in the planning and environmental consequences review.	1.6
	1/11/2024	Headway writes to follow up to the email on 1/3/2024.	1.6
	1/30/2024	Headway called the Ashley County Judge's office to follow up on email from 1/3/2024. The Ashley County Judge's Office secretary confirmed that they are not aware of any other projects right now that the Project team should be aware of, but she will reach out to the Headway team if they hear of anything.	1.6
	5/9/2024	Headway writes to Judge Jim Hudson's office asking if the County can share any information about the status or details of Chicot County's Hazard Mitigation Plan, especially regarding flooding hazards, which are relevant to the Plan-Environmental Assessment (Plan-EA).	1.6
	5/23/2024	Headway writes to follow up to the email on 5/9/2024.	1.6
State Clearinghouse	10/26/2023	Headway writes to State Clearinghouse to inform them about two USDA-NRCS-funded projects for the Arkansas Black Mayors Association in the City of Eudora and City of Wilmot areas, inviting agencies to participate in Project Scoping and upcoming public Scoping meetings, and seeking guidance on using the Arkansas State Clearinghouse to distribute this information.	N/A
	11/10/2023	Headway follow up to the email on 10/26 because a response had not been received to date from the State Clearinghouse	N/A
	11/13/2023	The Project team received a phone call from the State Clearinghouse with questions regarding the Project to which the Project team provided responses. No confirmation regarding the actions of the State Clearinghouse with respect to the Project were detailed. No further response was received by	N/A

Agency	Date	Correspondence	Section where comments are discussed
		the Project team regarding coordinating by the State Clearinghouse for agency consultations.	
	11/30/2023	Headway sent a second follow-up to the email on 10/26.	

October 19, 2023

U.S. Army Corps of Engineers – Vicksburg District
Planning Division, Regulatory Functions/Permits
4155 Clay Street
Vicksburg, MS 39183

RE: Formal request for USACE to be a cooperating agency on the City of Wilmot Area Watershed Plan and Environmental Assessment

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is formally requesting that your agency become a cooperating agency in the planning and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency has been identified as having special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project. If permits are required from your agency, you also may have NEPA compliance responsibilities. Therefore, USDA-NRCS' preparation of this Plan-EA could assist in fulfilling environmental review requirements for your agency or other federal agencies and meet NEPA's intent of reducing duplication and delay between agencies.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and surrounding small communities in Ashley County, Arkansas, which lie within one 12-digit and one 10-digit HUC watersheds. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

If your agency is unable to participate as a cooperating agency, please return a written explanation as to why your agency cannot participate. Please note that a response declining to be a cooperating agency also must be submitted to the Council on

Environmental Quality per 40 CFR Part 1501.6(c). Upon acceptance of this invitation, roles can be defined in an informal agreement or formal MOU.

A virtual (MS Teams) review of the project area is scheduled for November 21, 2023. The meeting will begin at 10:30 am and conclude at 12:00 pm (central standard time). If your agency plans to participate in the review meeting, please notify Bill Kinkaid at william.kinkaid@usda.gov and Lee Forbes (Headway Environmental – Project Consultant) at lforbes@headwayenviro.com by November 17, 2023.

A public scoping meeting is scheduled from 6:00 to 7:45 pm, November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot, AR.

Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Bill Kinkaid of my staff at william.kinkaid@usda.gov or via phone at 501-301-3127.

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Area Map

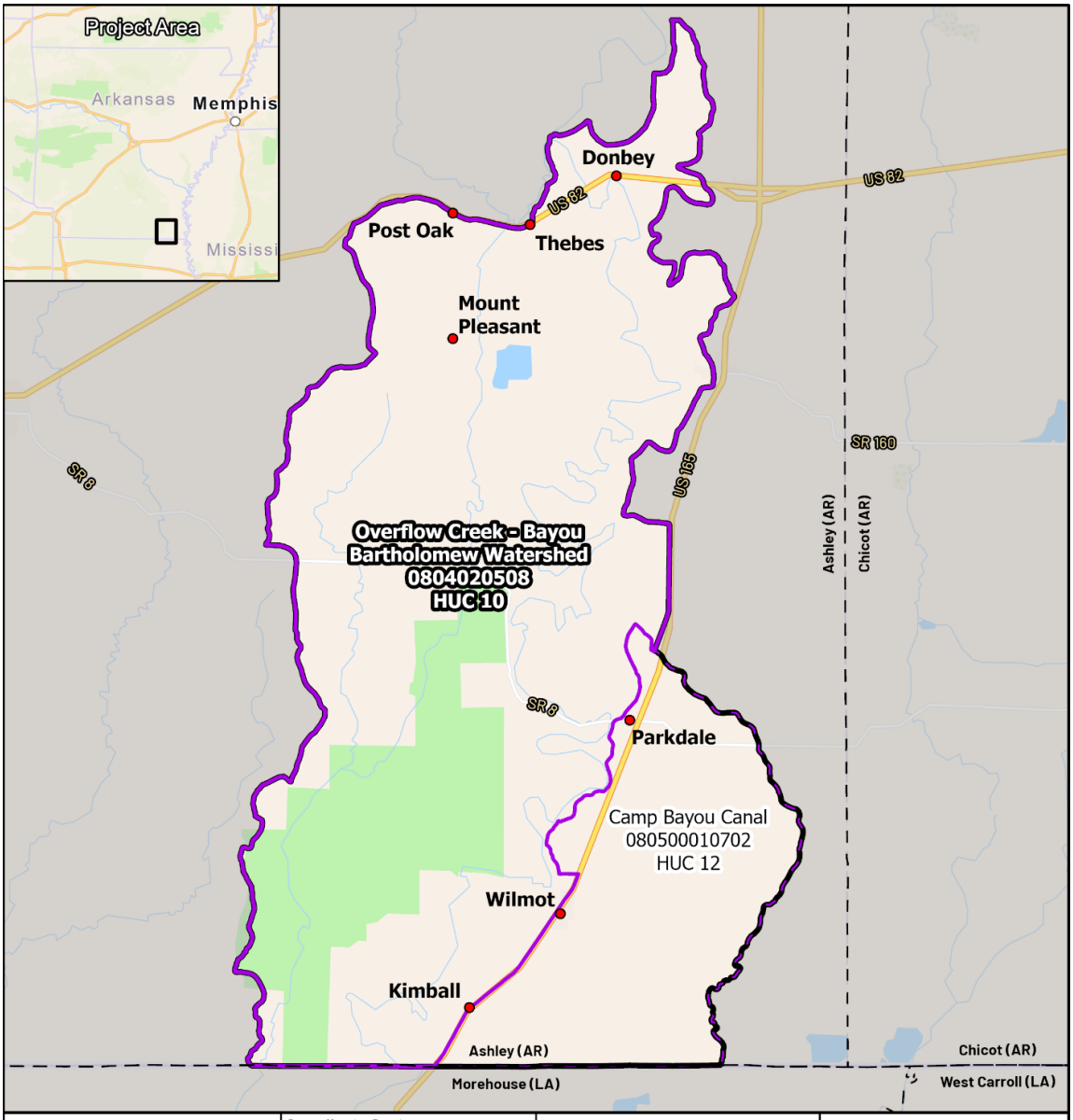


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

November 16, 2023
6:00 – 7:30 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will be in an open house, come-and-go format, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.

October 19, 2023

Chris Davidson, Acting Field Supervisor
U.S. Fish and Wildlife Service
110 S. Amity Road
Suite 300
Conway, AR 72032

RE: Formal request for USFWS to be a cooperating agency on the City of Wilmot Area Watershed Plan and Environmental Assessment

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is formally requesting that your agency become a cooperating agency in the planning and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency has been identified as having special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project. If permits are required from your agency, you also may have NEPA compliance responsibilities. Therefore, USDA-NRCS' preparation of this Plan-EA could assist in fulfilling environmental review requirements for your agency or other federal agencies and meet NEPA's intent of reducing duplication and delay between agencies.

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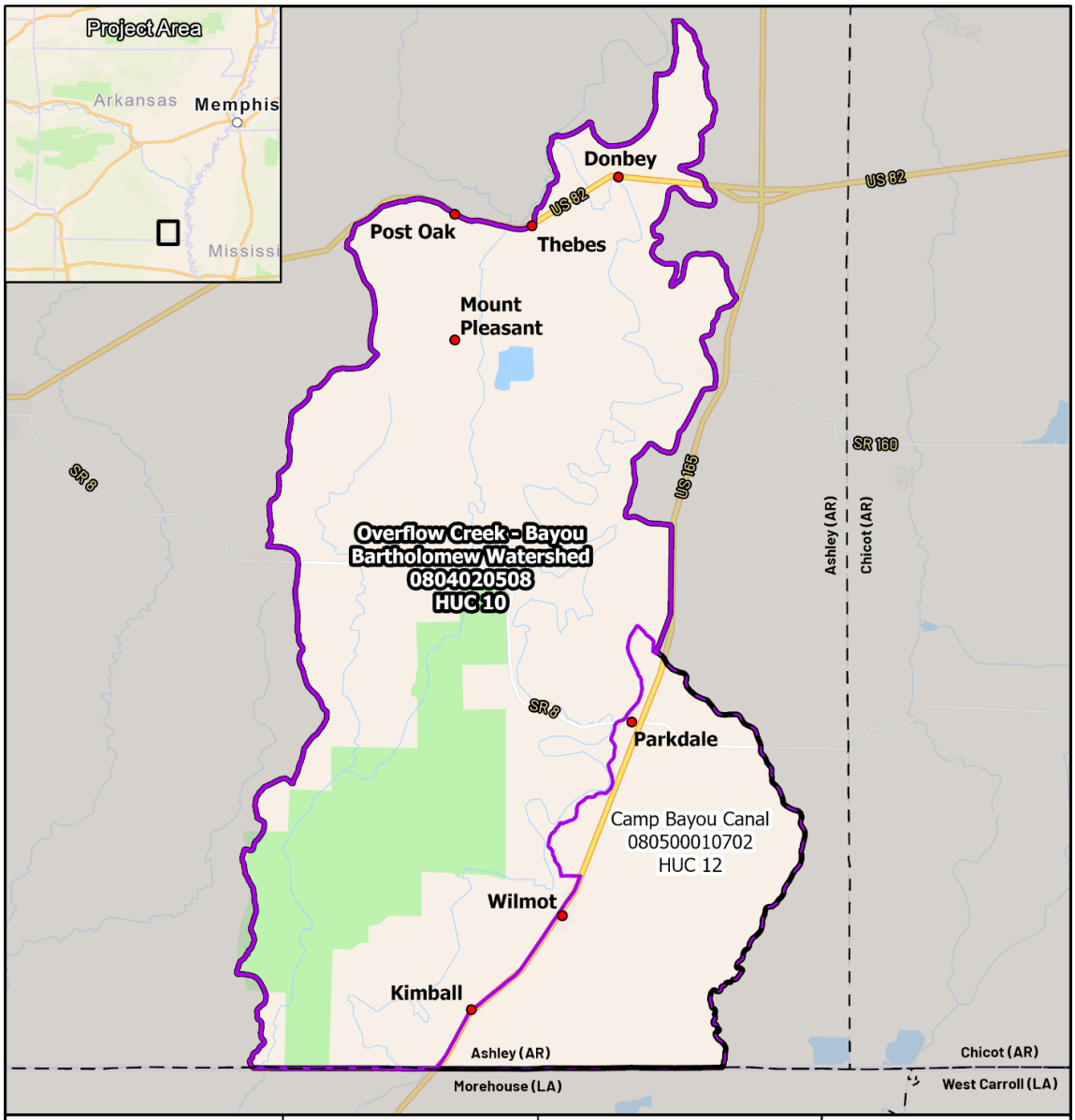
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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will include a presentation followed by an open-house, come-and-go forum, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

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October 19, 2023

Caleb Osborne, Director
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that your agency participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

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With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan-EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm, November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail

or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map

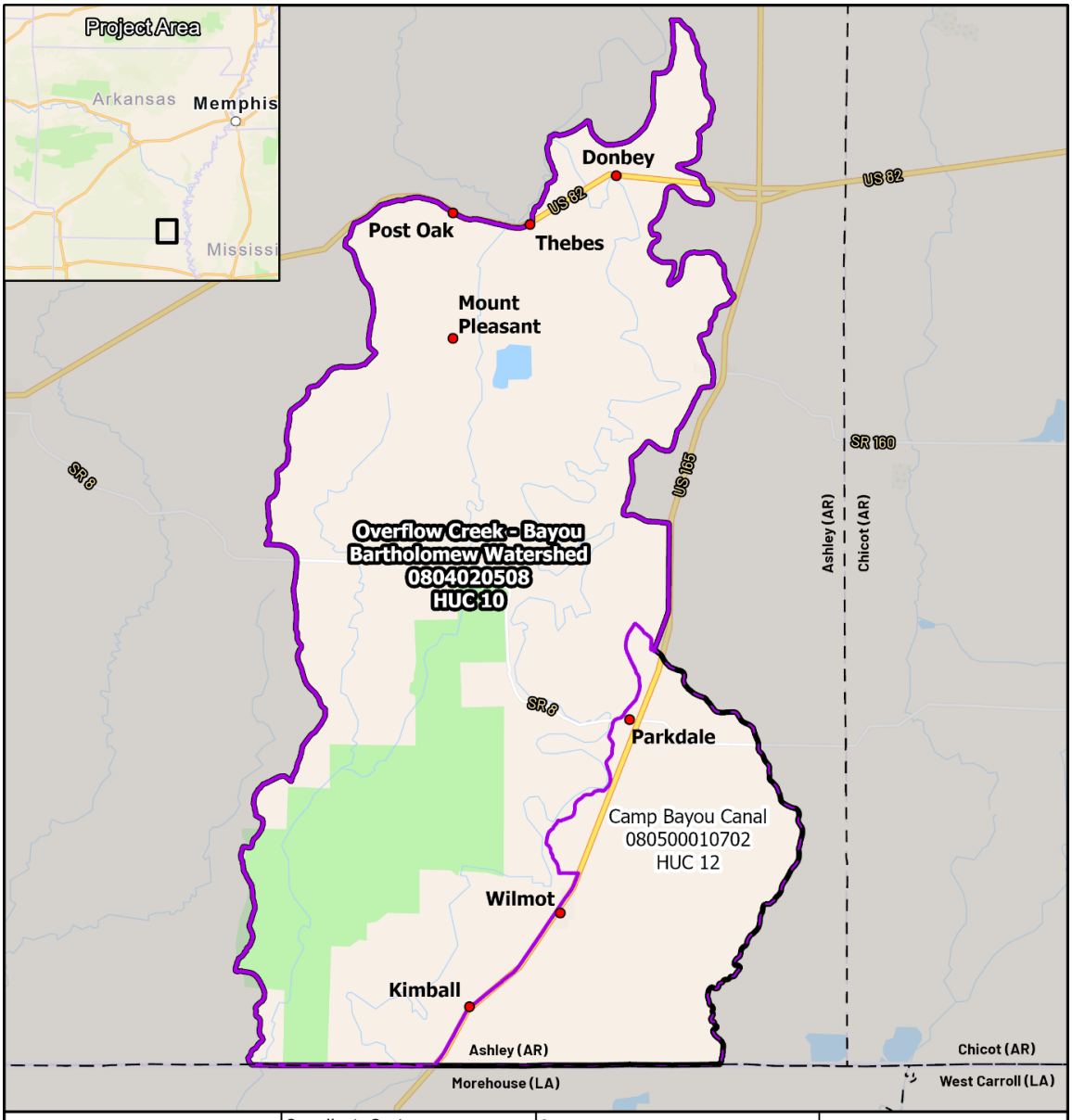


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
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City of Wilmot Area Watershed Project
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October 19, 2023

Arkansas Pollution Control and Ecology Commission
3800 Richards Rd.
North Little Rock, AR 72117

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

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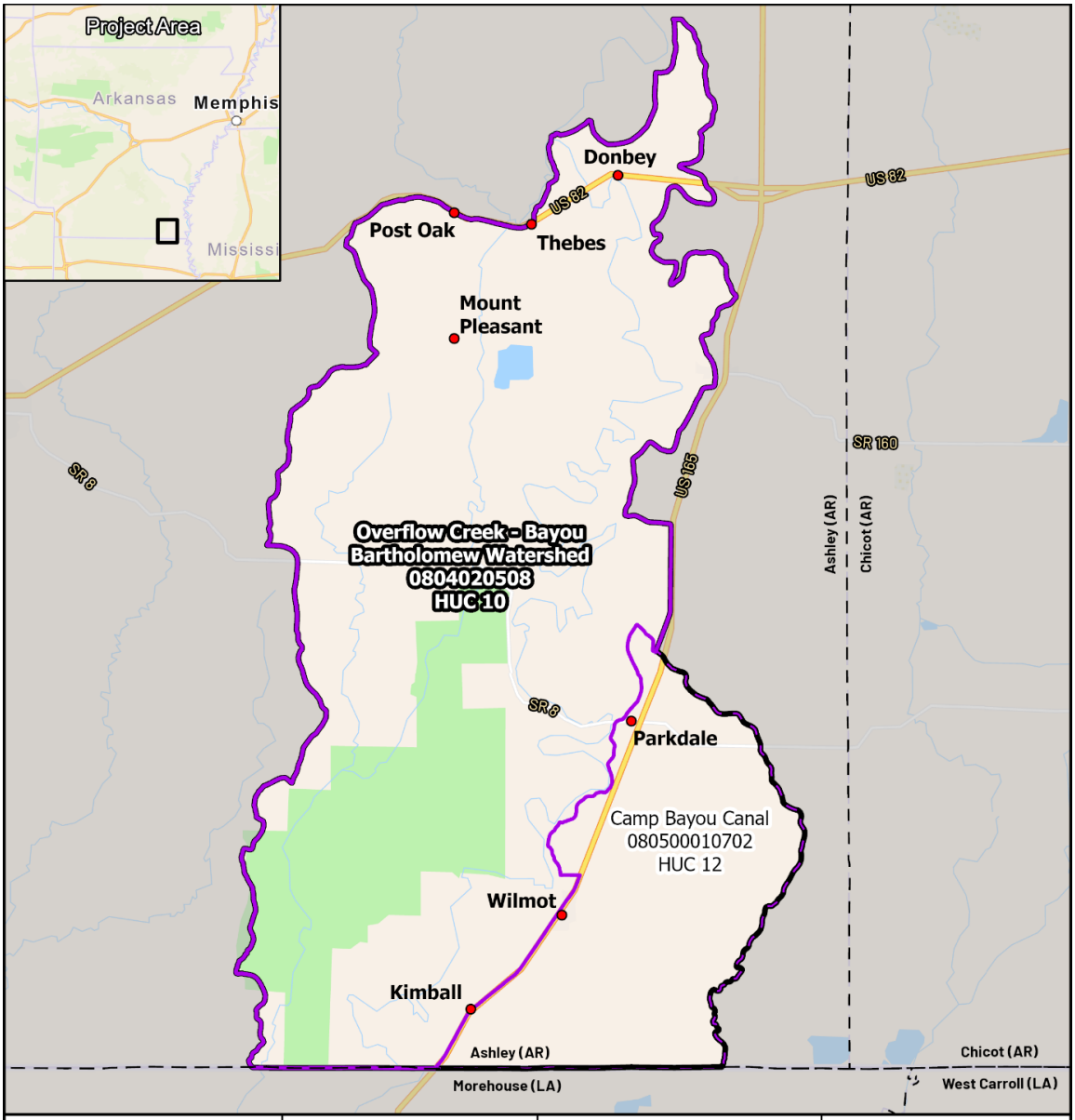
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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Arkansas Department of Health
4815 W. Markham
Little Rock, AR 72205

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that your agency participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

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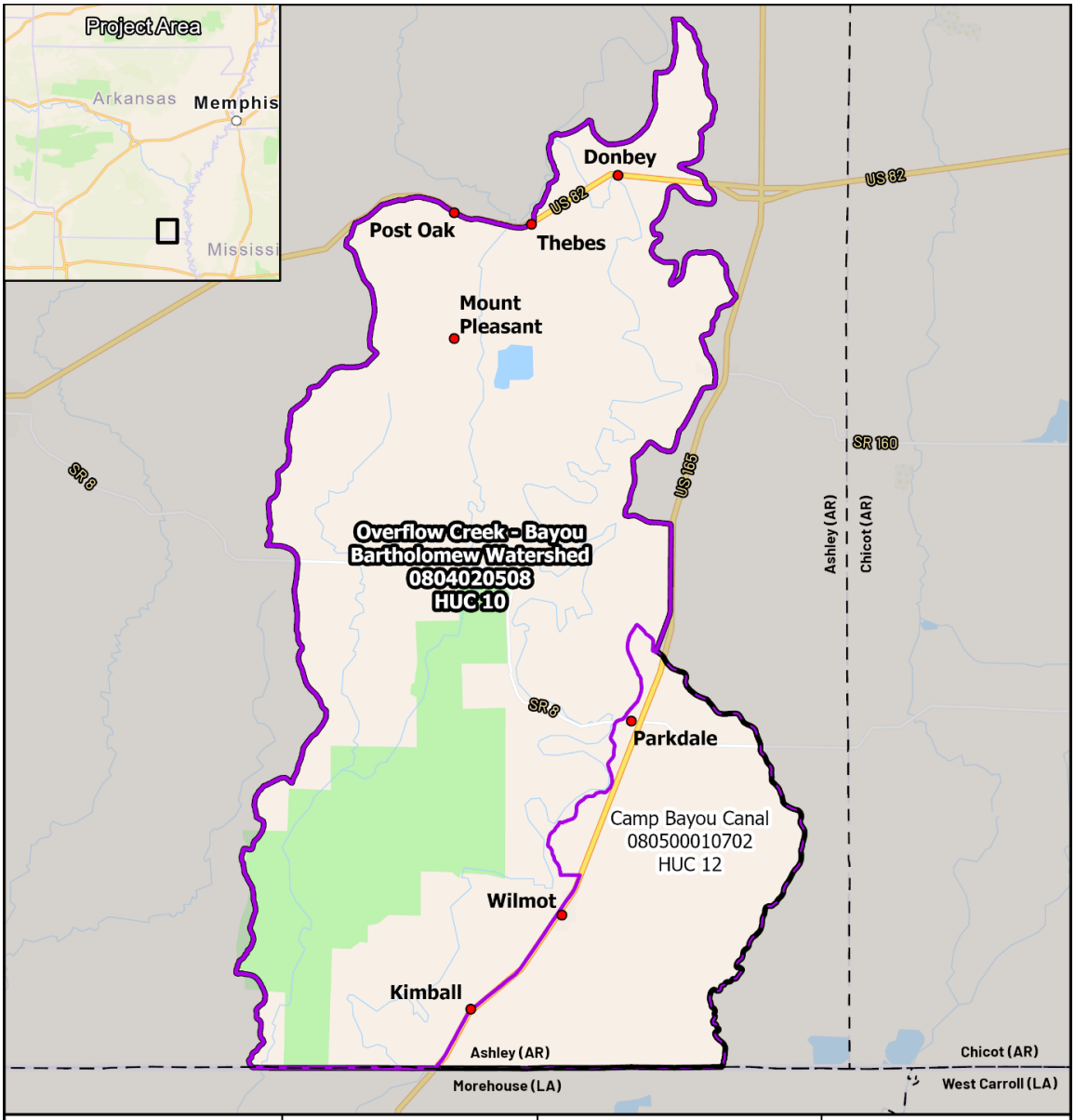
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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Lorie Tudor, Director
Arkansas Department of Transportation
P.O. Box 2261
Little Rock, Arkansas 72203

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

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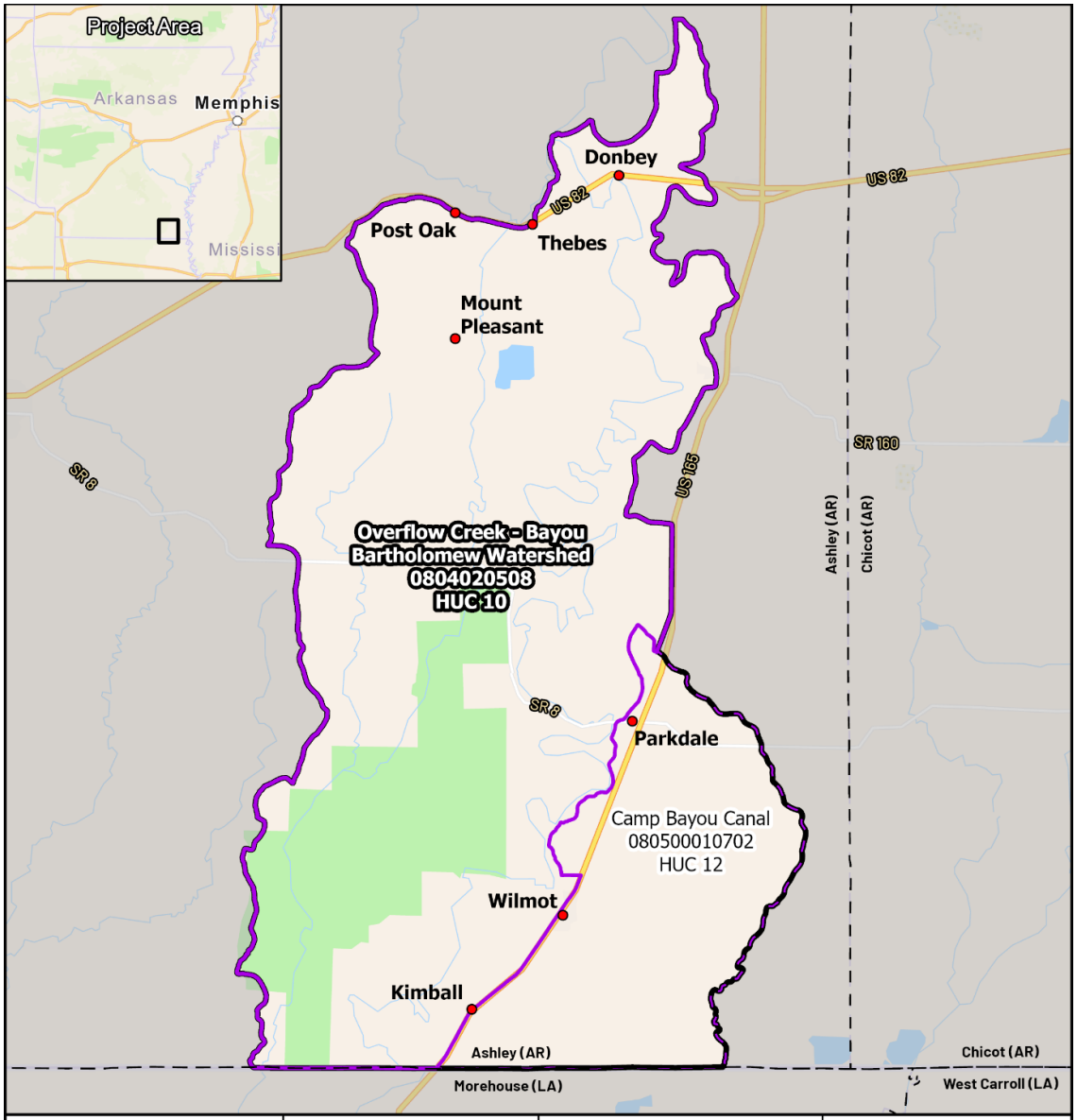
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Michael E. Sullivan, State Conservationist
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Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
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Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Shea Lewis, Director
Arkansas Department of Parks, Heritage, and Tourism
1100 North Street
Little Rock, Arkansas 72201

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
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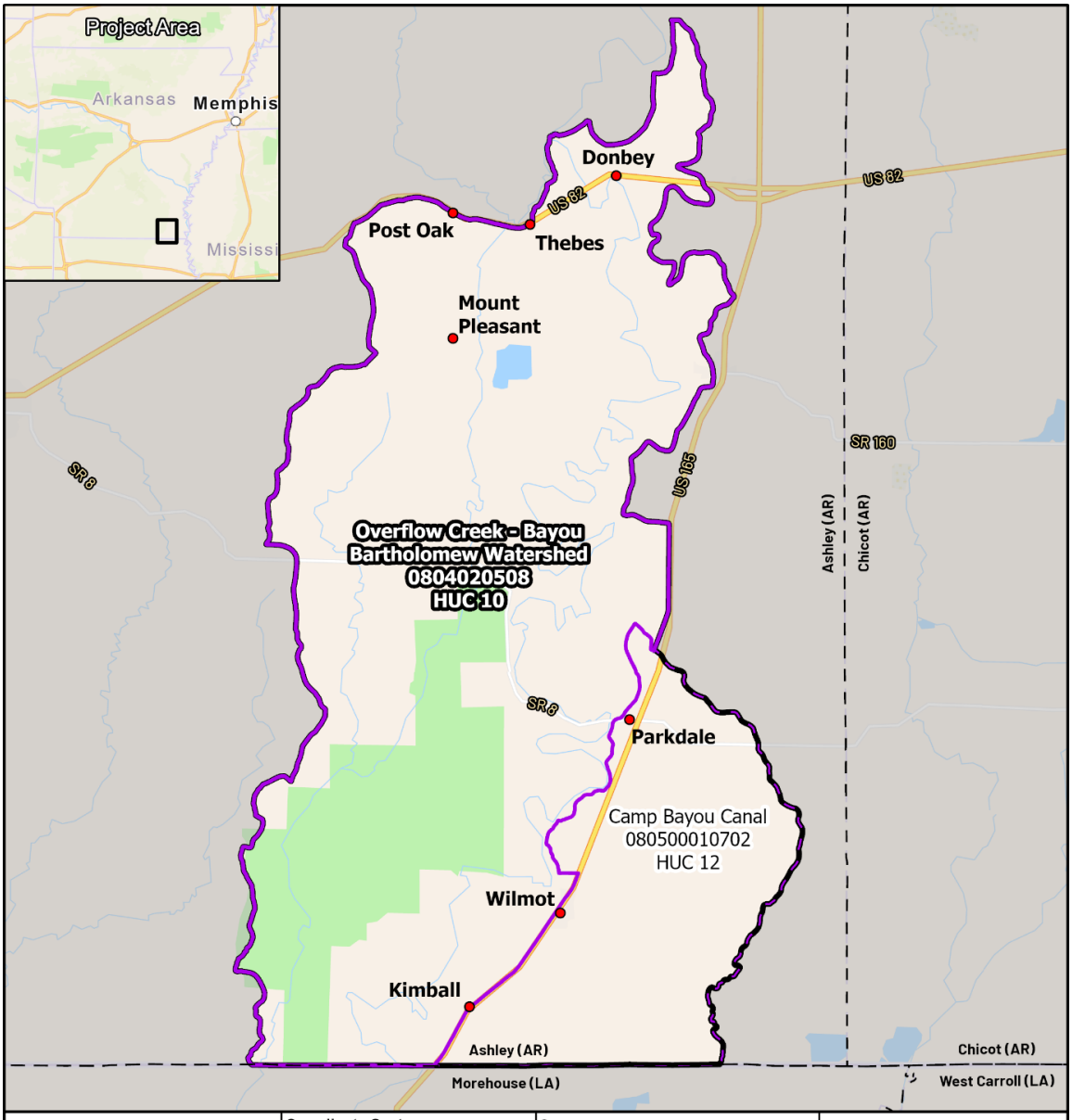


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Clint O'Neal, Executive Director
Arkansas Economic Development Commission
1 Commerce Way, Ste. 601
Little Rock, Arkansas 72202

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
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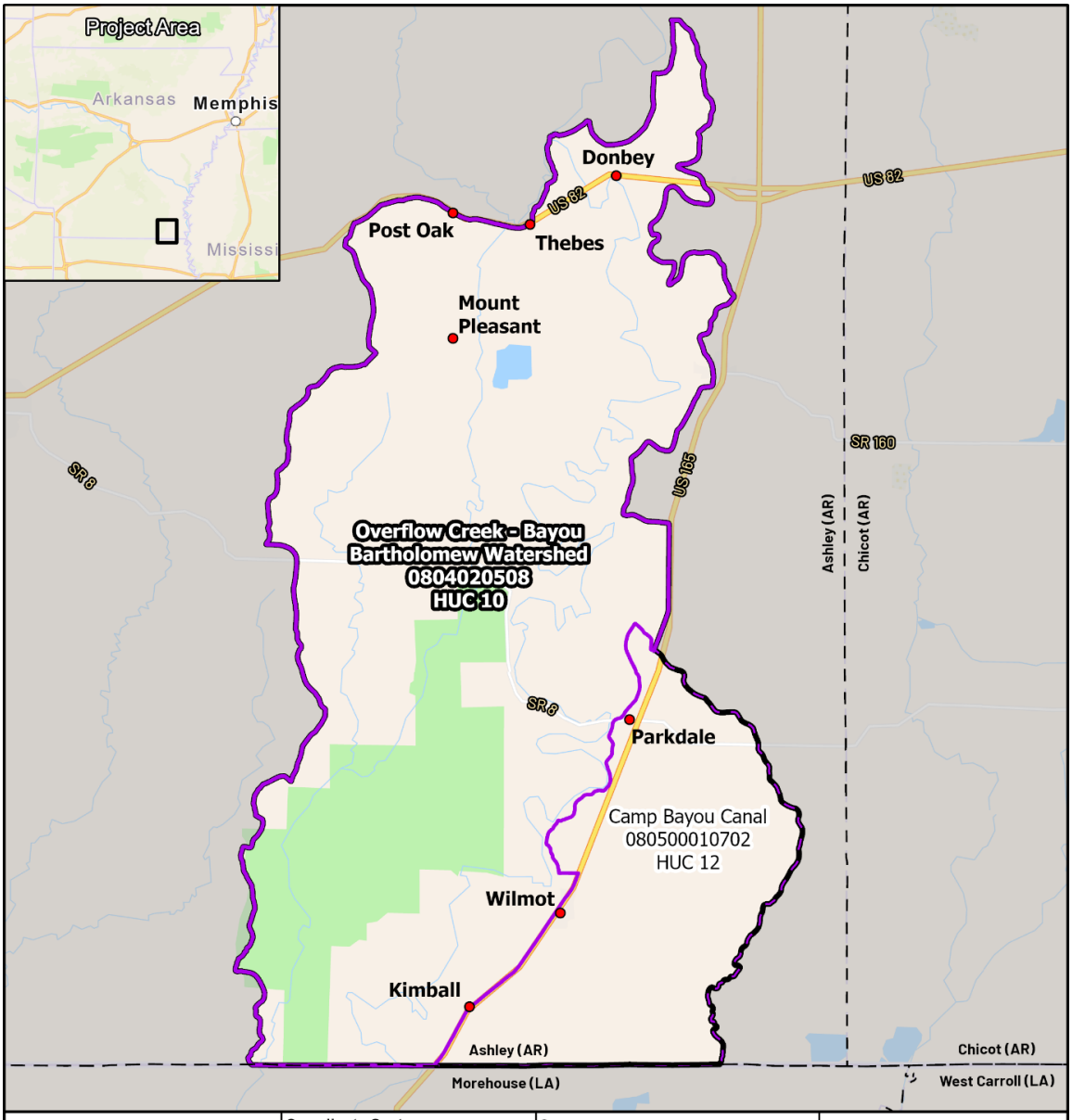


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
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November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Austin Booth, Director
Arkansas Game & Fish Commission
2 Natural Resources Drive
Little Rock, Arkansas 72205

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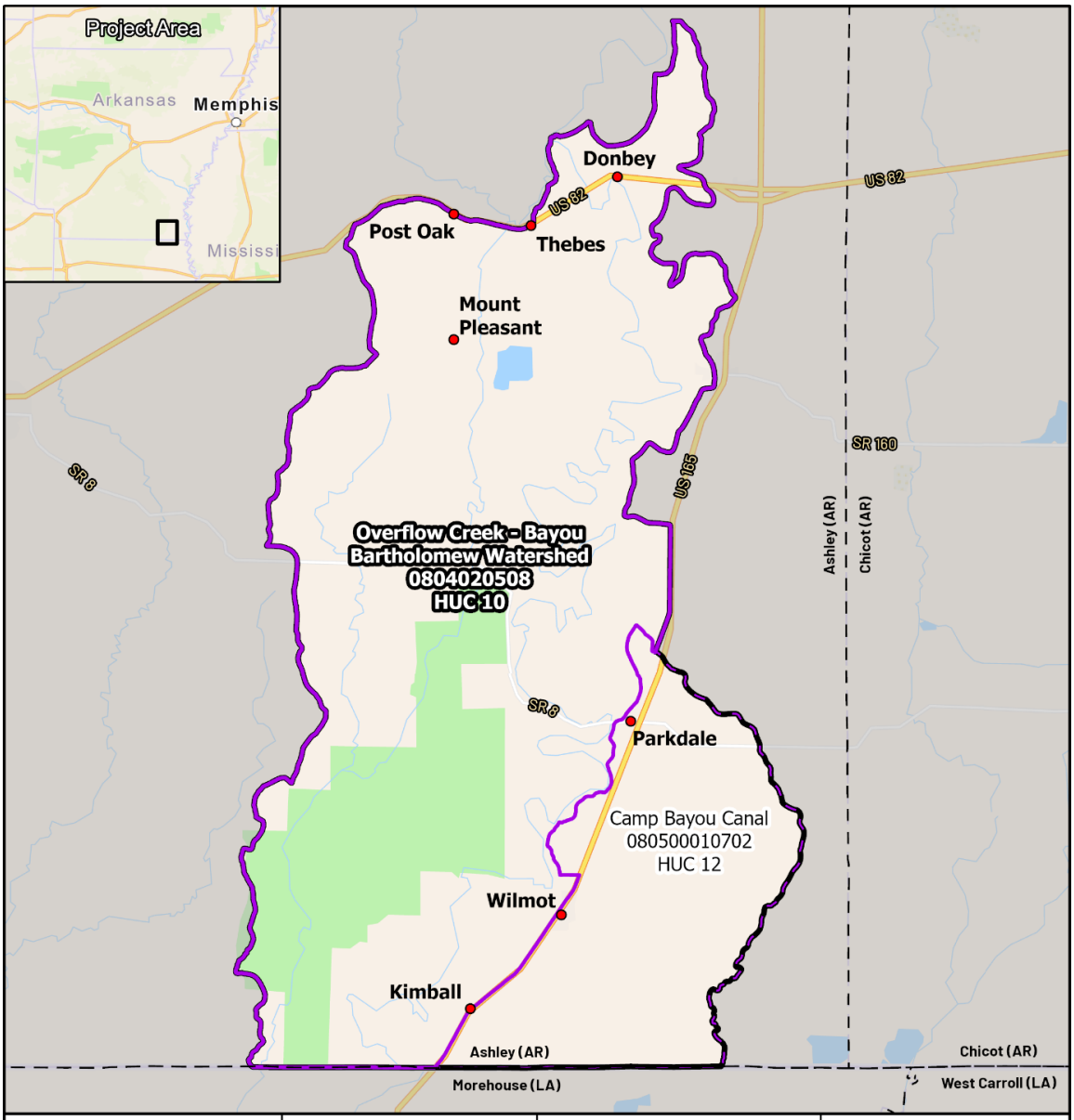


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Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

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700 West Capitol Avenue
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October 19, 2023

Scott Kaufman, State Historic Preservation Officer
Arkansas Historic Preservation Program
1100 North Street
Little Rock, AR 72201

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Scoping Meeting Notice

Project Area Map

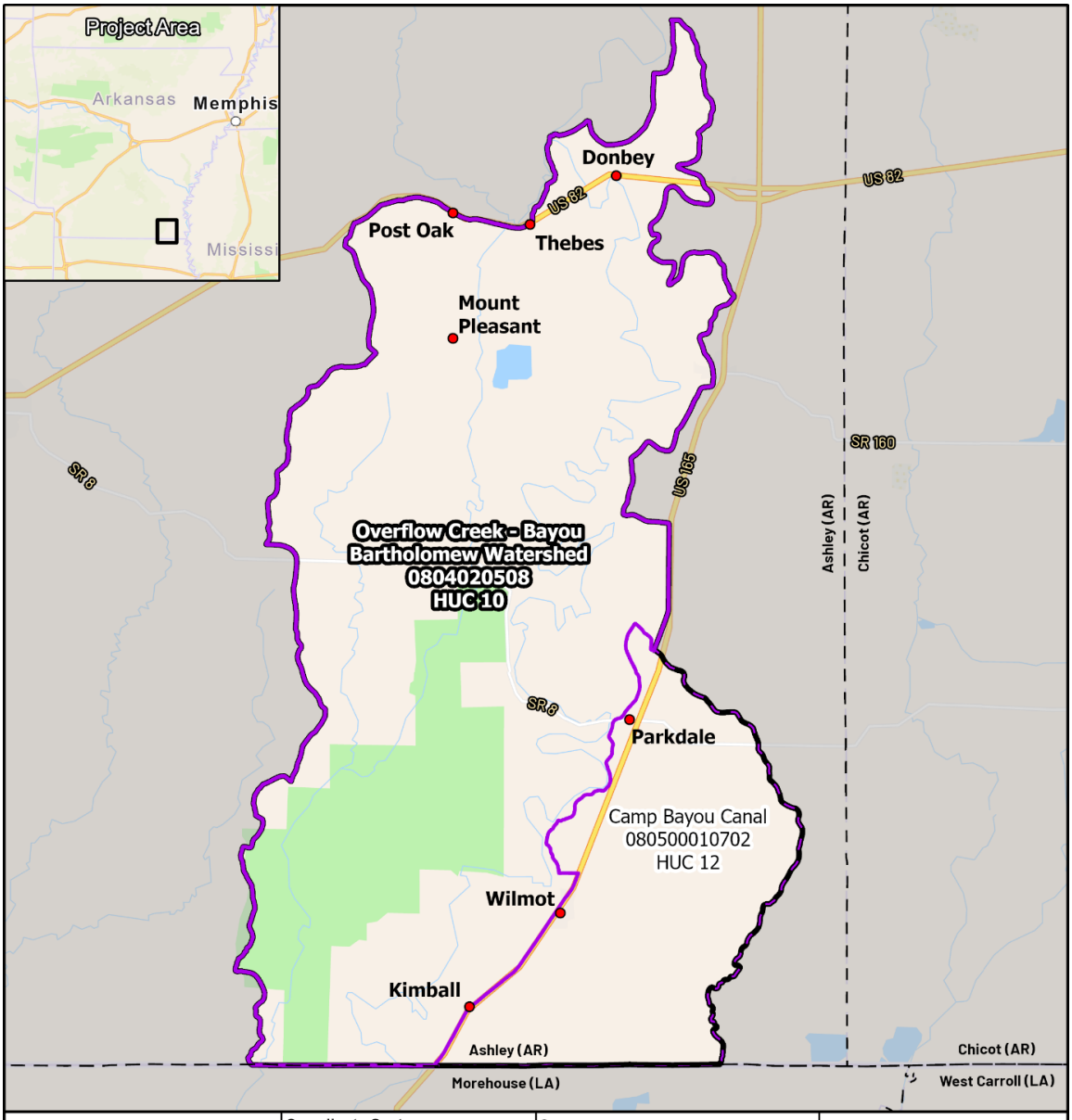


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

November 16, 2023
6:00 – 7:45 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

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October 19, 2023

Bill Holimon, Director
Cindy Osborne, Data Manager/Environmental Review Coordinator
Arkansas Natural Heritage Commission
1100 North Street
Little Rock, AR 72201

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
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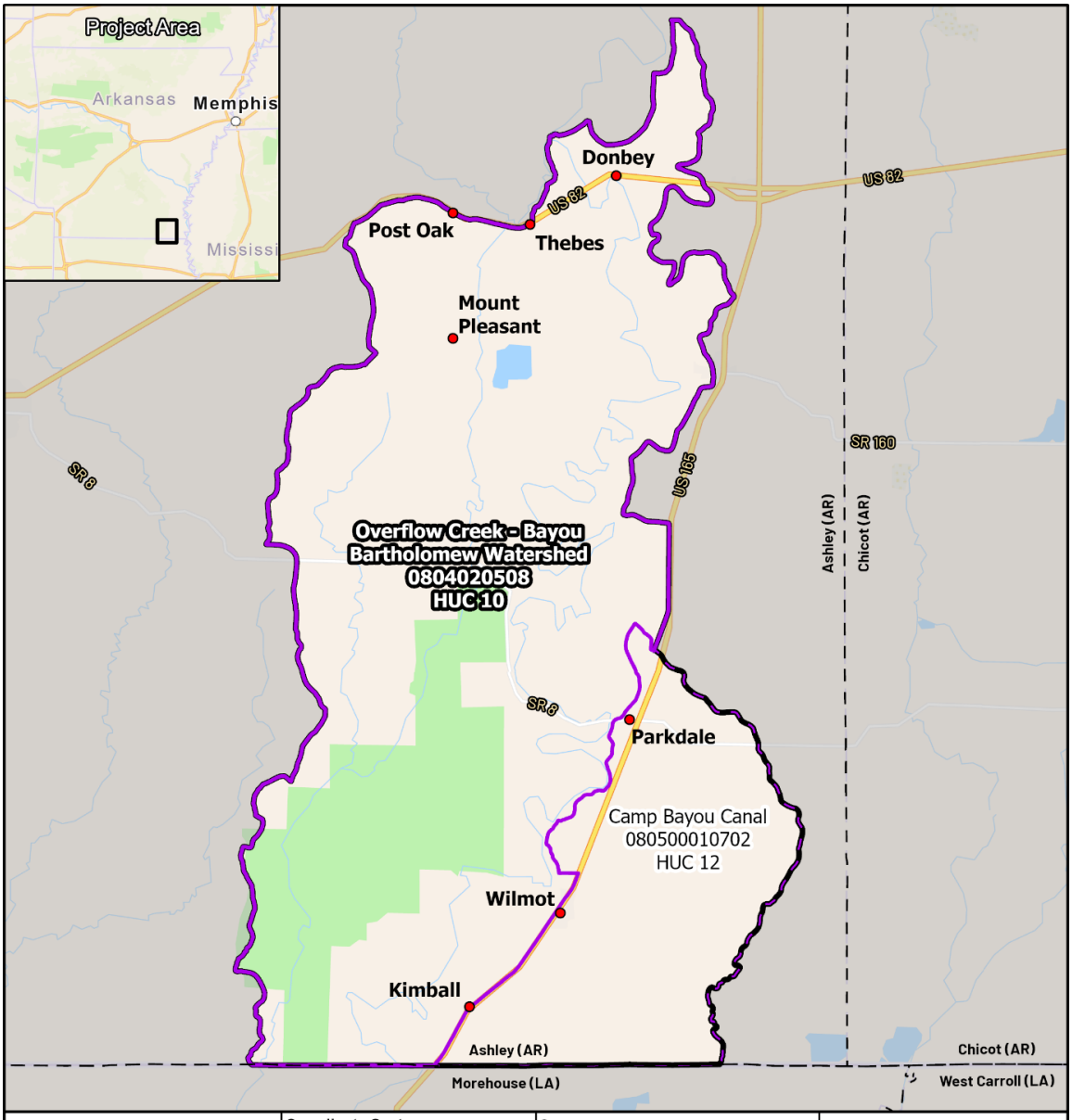


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Ashley County, Arkansas

Headway Environmental

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Helping People Help the Land

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Public Notice
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November 16, 2023
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October 19, 2023

Kyle Cunningham, State Forester
Arkansas Department of Agriculture- Forestry Division
1 Natural Resources Drive
Little Rock, Arkansas 72205

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
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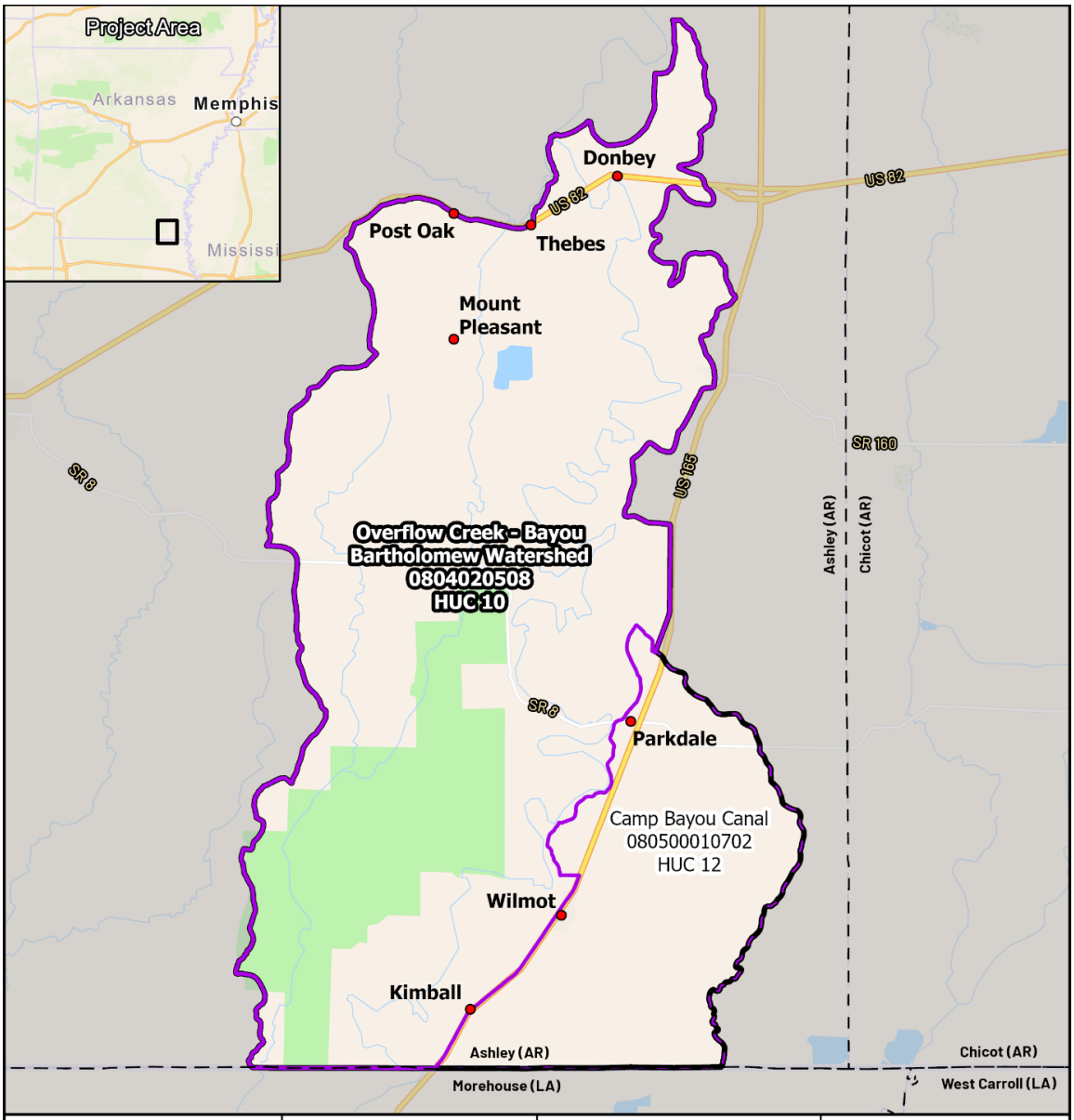


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Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Chris Colclasure, Director
Arkansas Department of Agriculture- Natural Resources Division
1 Natural Resources Drive
Little Rock, Arkansas 72205

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
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Enclosures:

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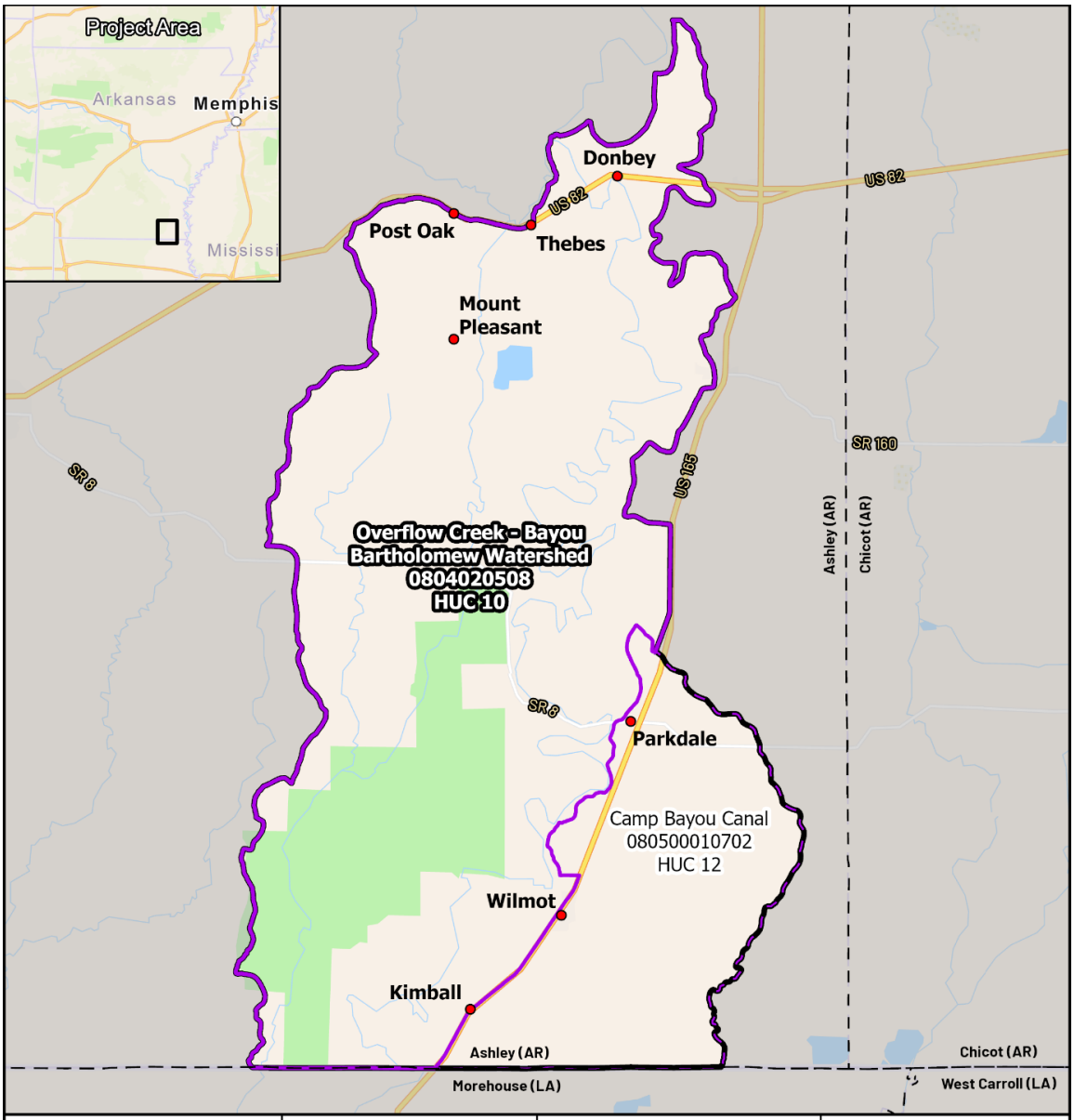


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
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November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Chris Rice, State Clearinghouse POC
Department of Finance and Administration- State Clearinghouse for Agencies
Sent via email: IGSClearinghouse@dfa.arkansas.gov

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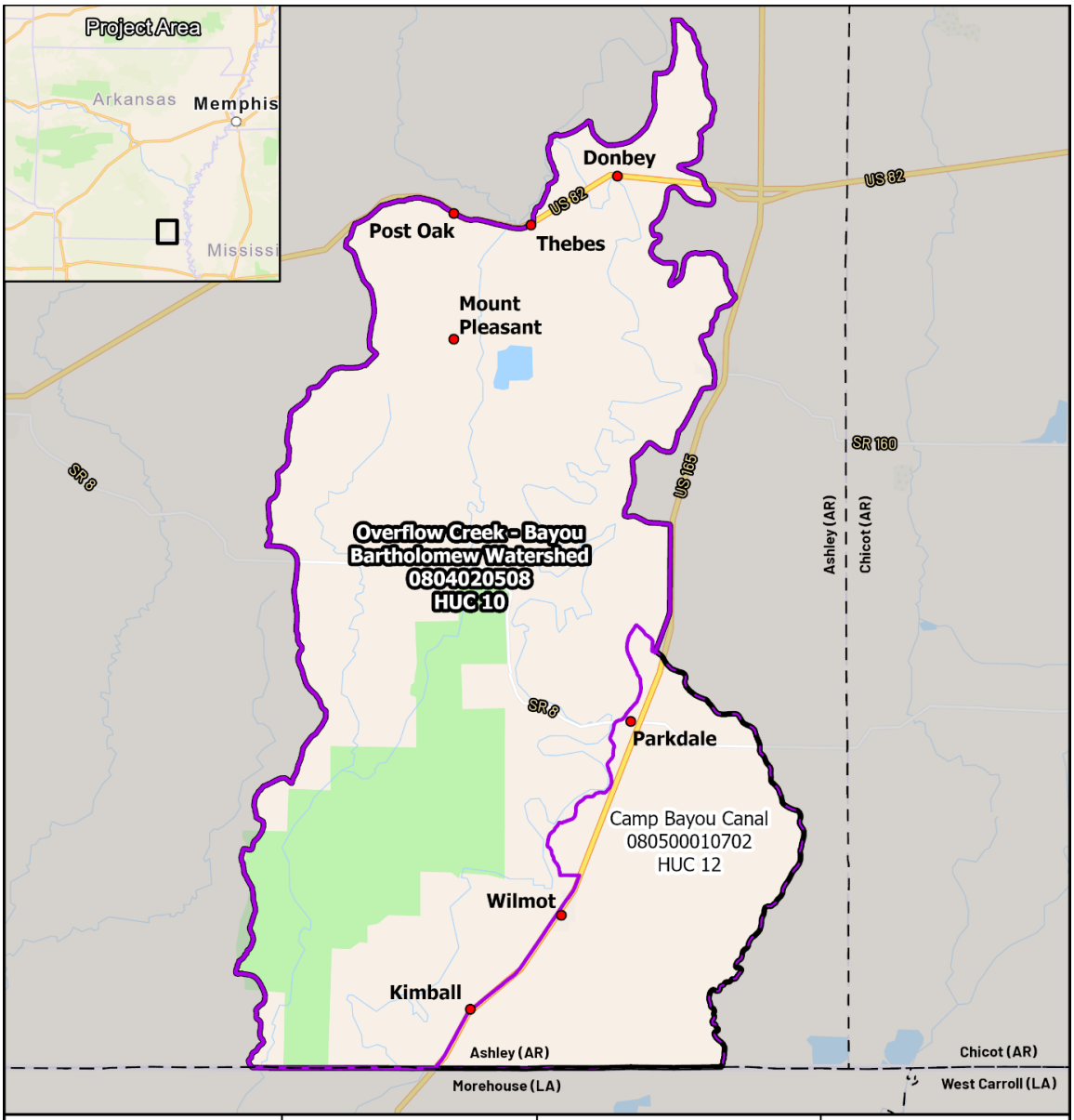


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October 19, 2023

Office of the State Geologist
5301 Northshore Drive
North Little Rock, AR 72118

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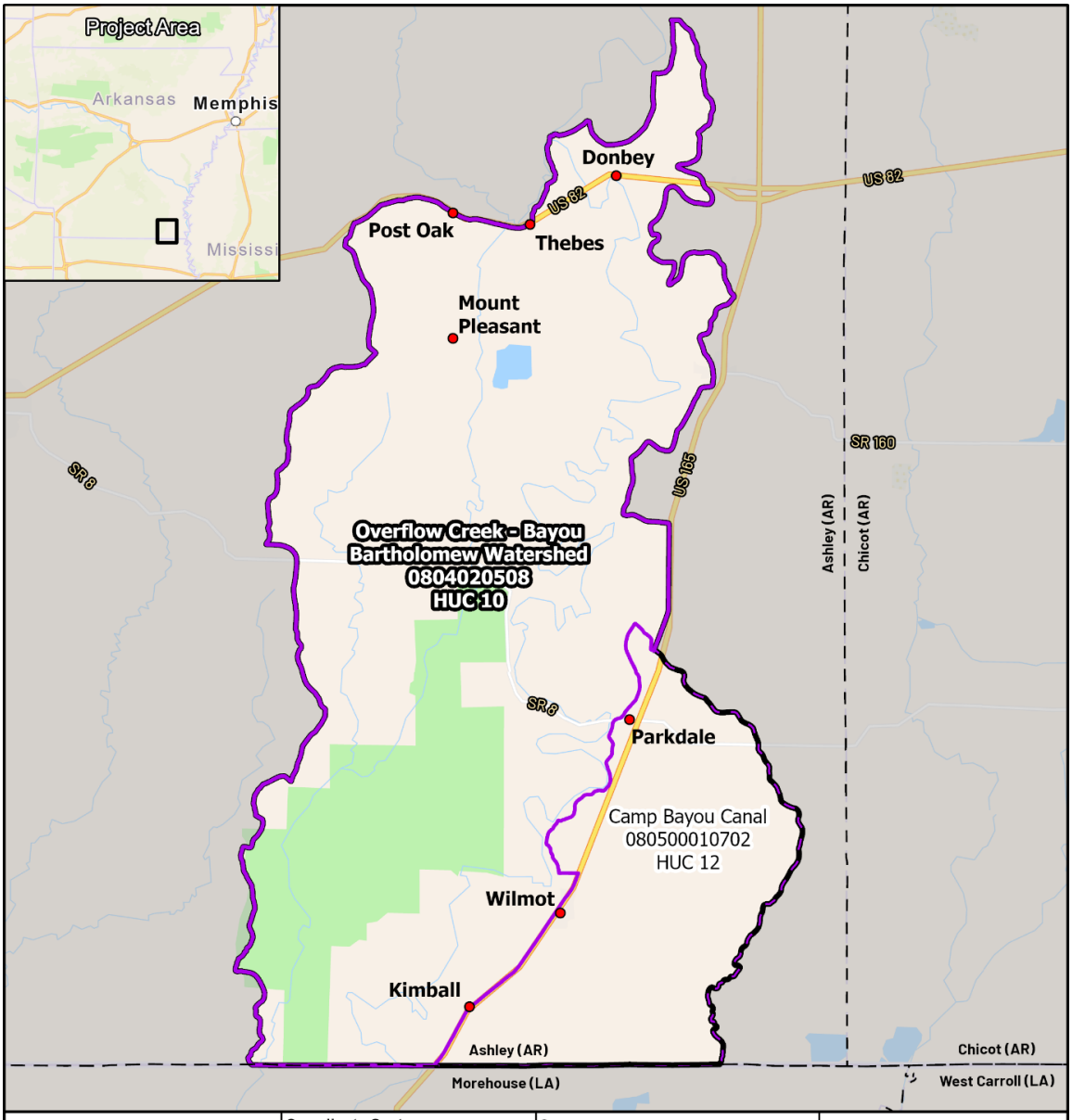


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October 19, 2023

Arkansas Waterways Commission
1 Commerce Way Suite 503
Little Rock, AR 72202

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that your agency participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

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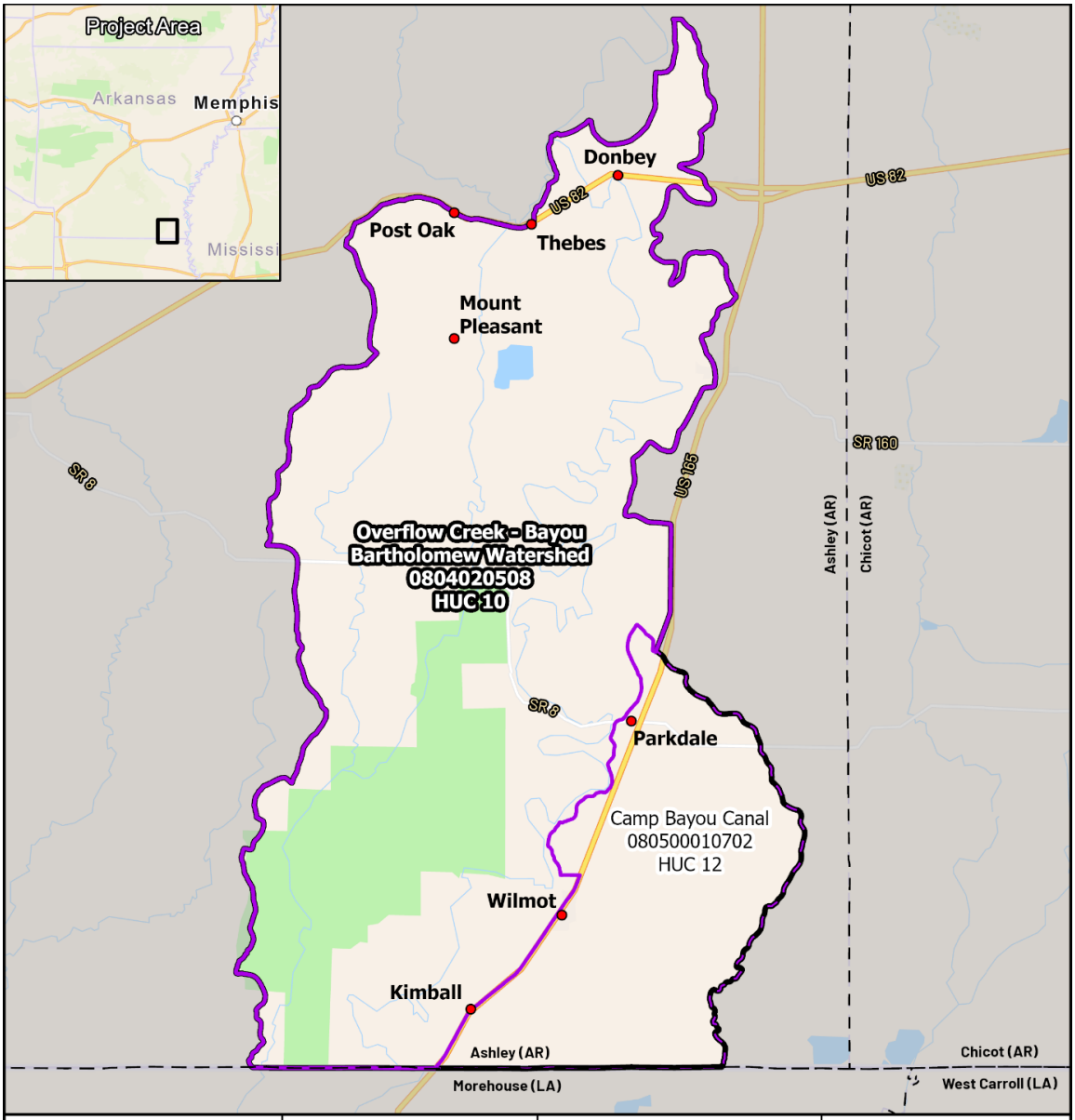
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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Ashley County Judge Jim Hudson
Ashley County Courthouse
205 East Jefferson Street #14
Hamburg, AR 71646

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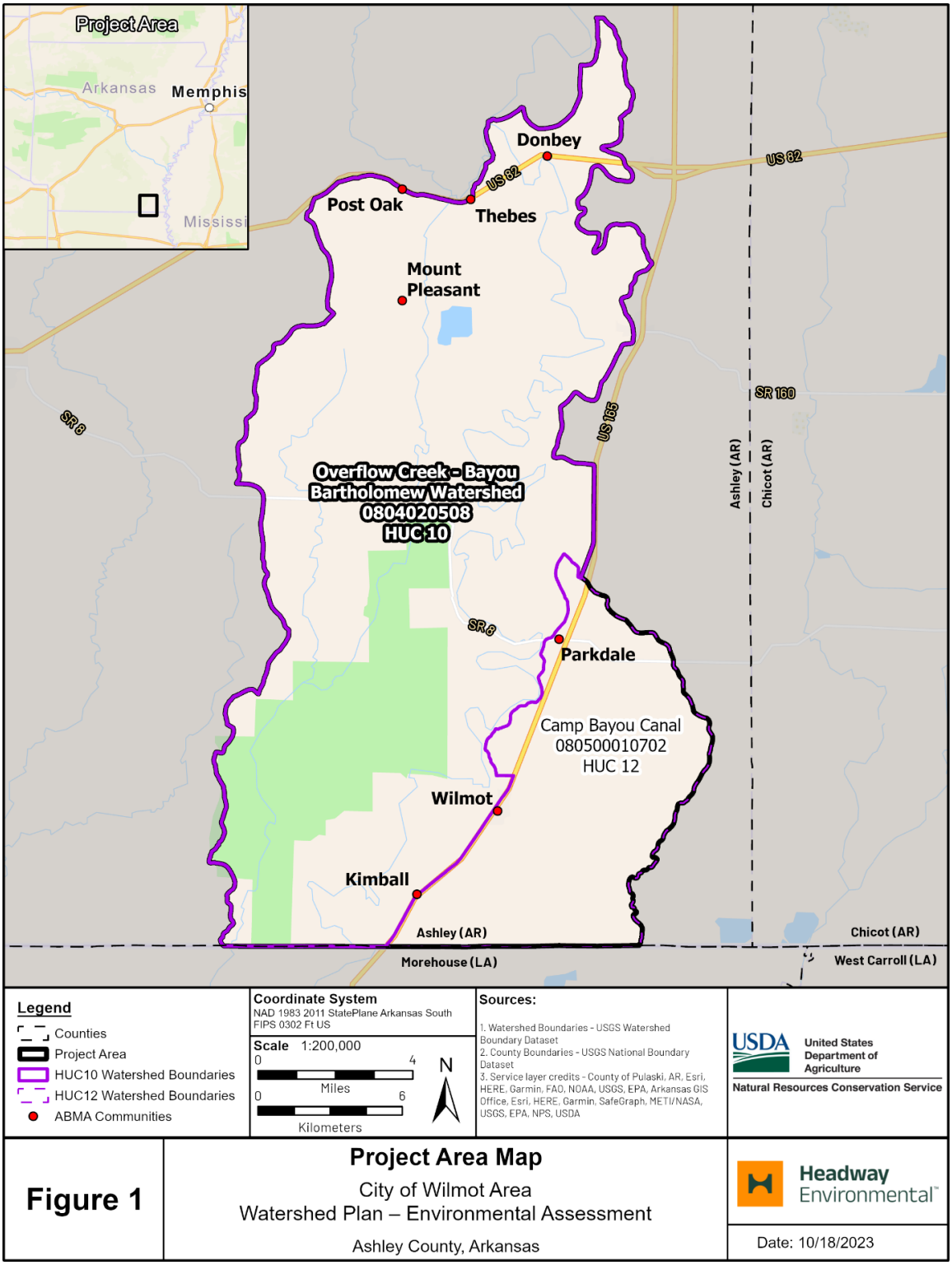
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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
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Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map



Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Mayor Carolyn Harris of Wilmot
116 W Main
P.O. Box 67
Wilmot, AR 71676

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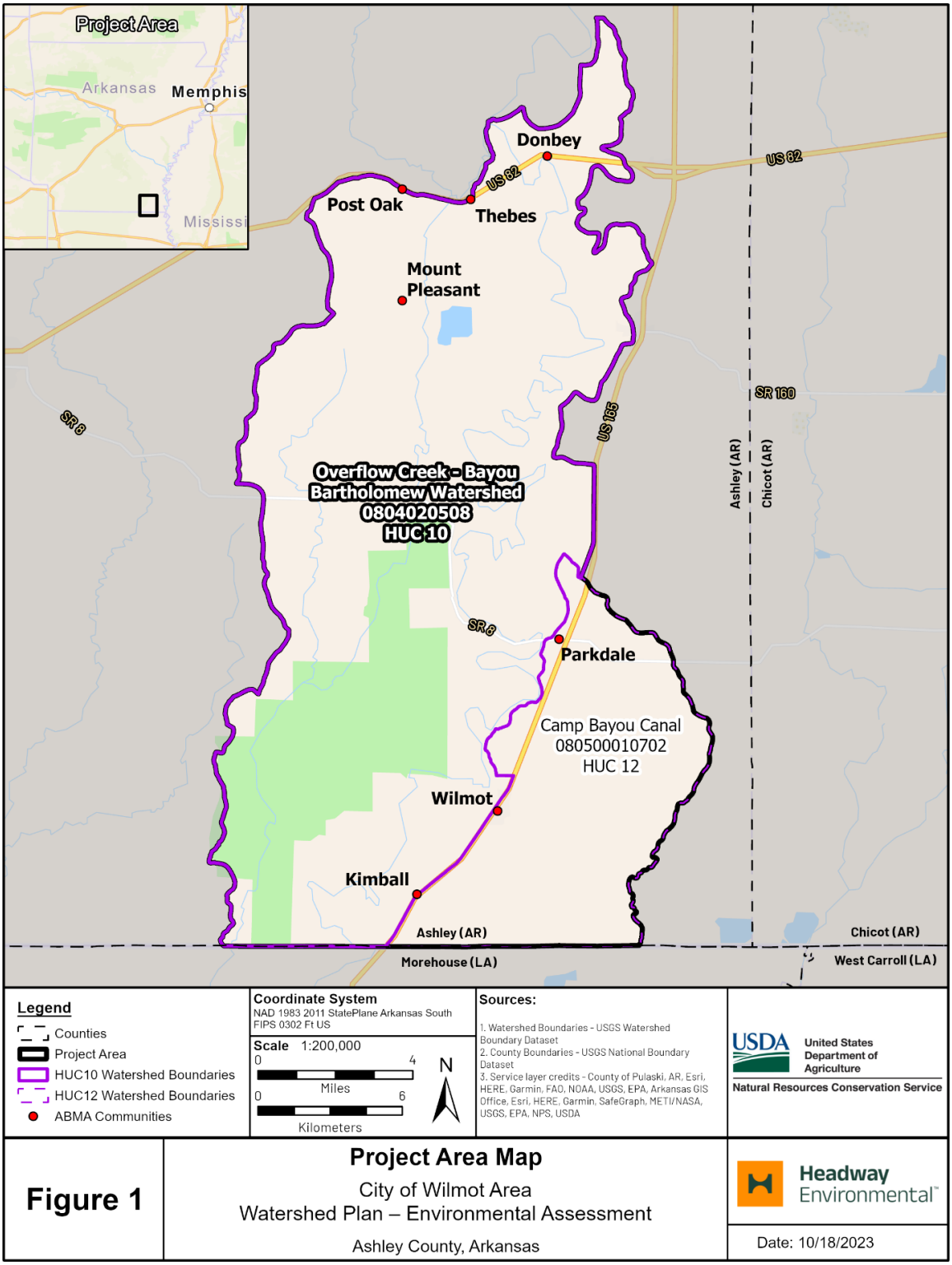
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Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map



Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

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Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

State Representative Howard M. Beaty, Jr.
1001 Elm Street
Crossett, AR 71635-3619

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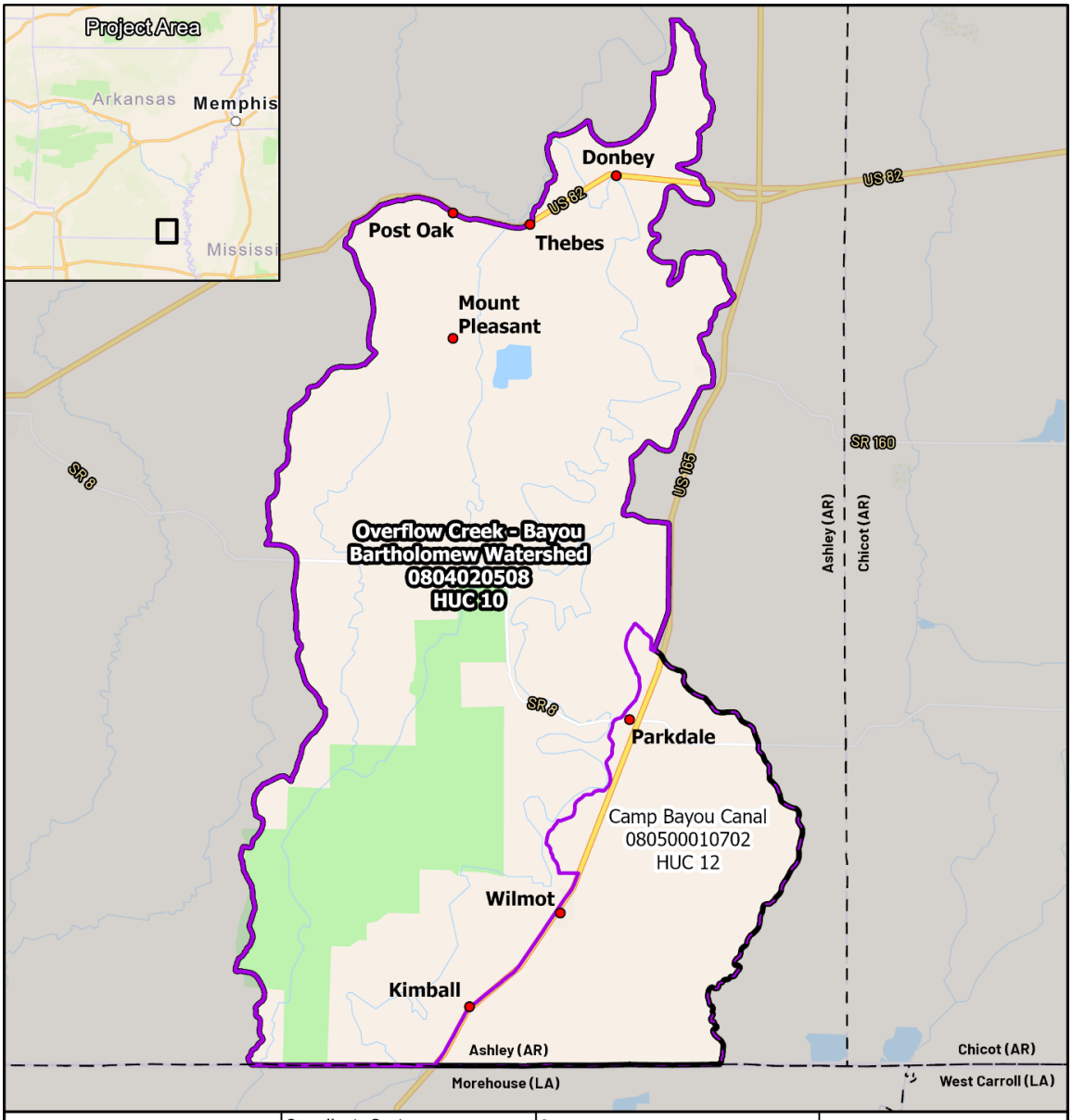


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

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Public Notice
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November 16, 2023
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October 19, 2023

State Senator Ben Gilmore
P.O. Box 1197
Crossett, AR 71635

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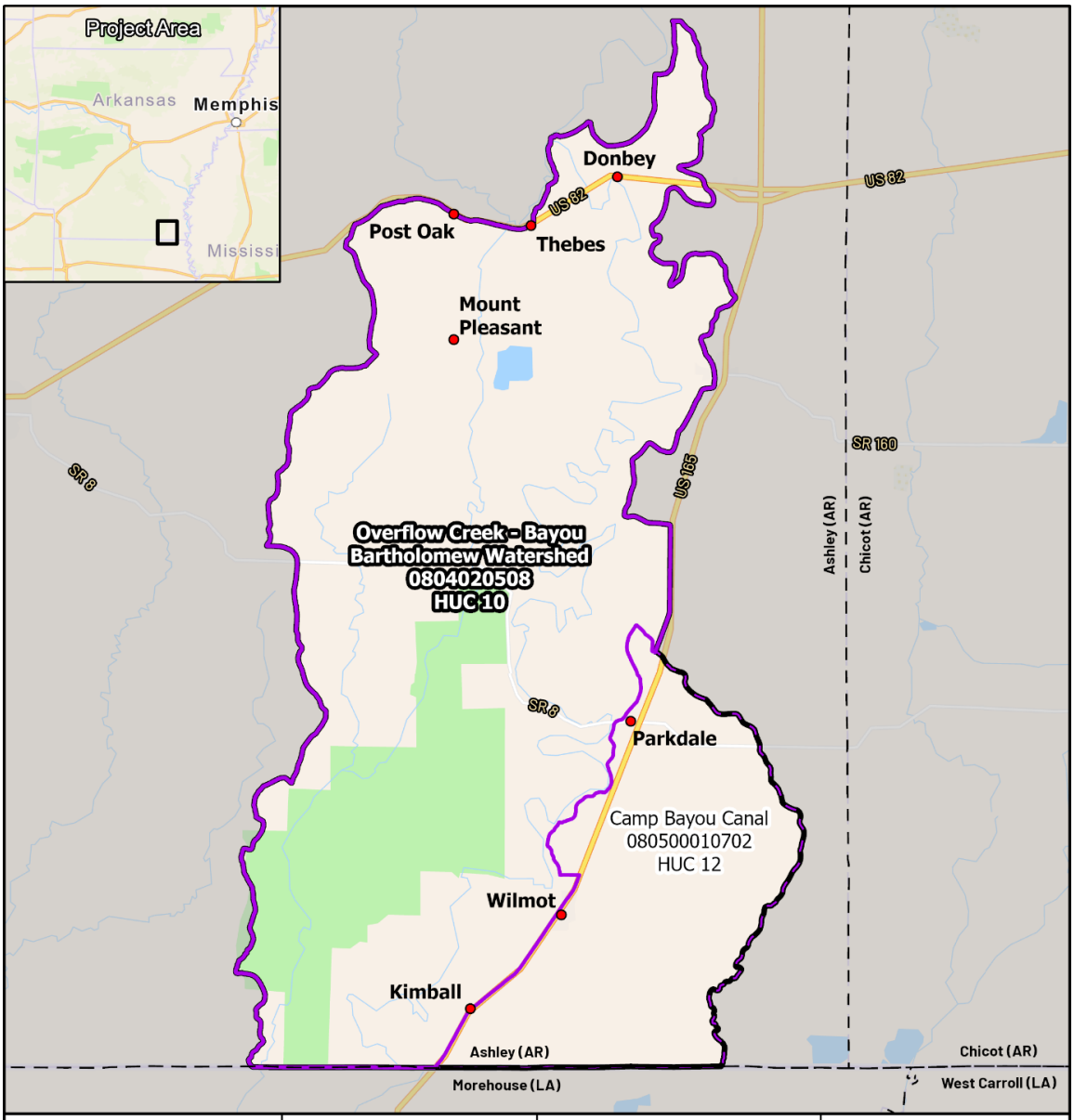


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Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

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U.S. Representative Bruce Westerman
101 Reserve Street
Suite 200
Hot Springs, AR 71910

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map

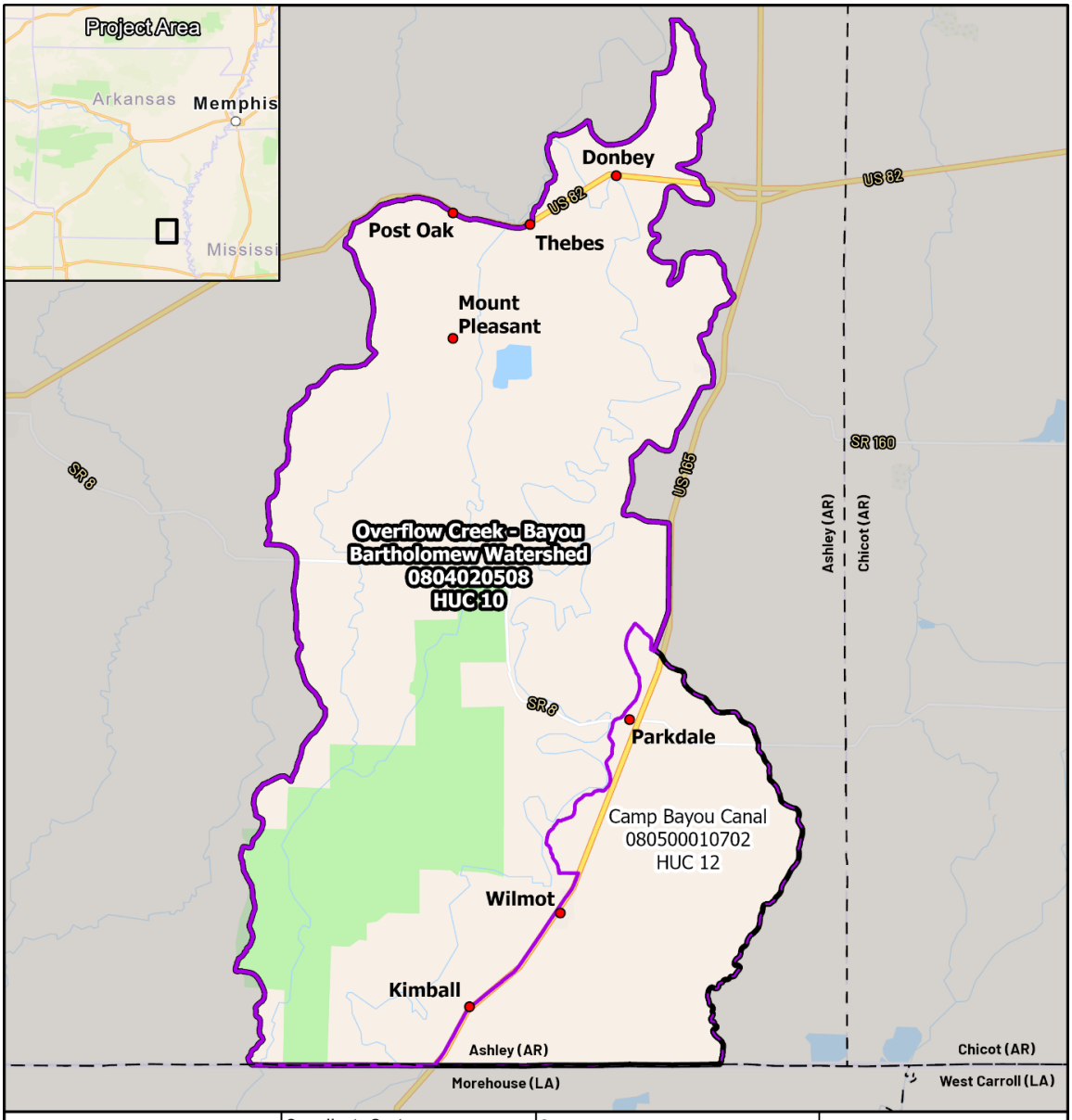


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

U.S. Senator John Boozman
1401 W. Capitol Ave.
Suite 155
Little Rock, AR 72201

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

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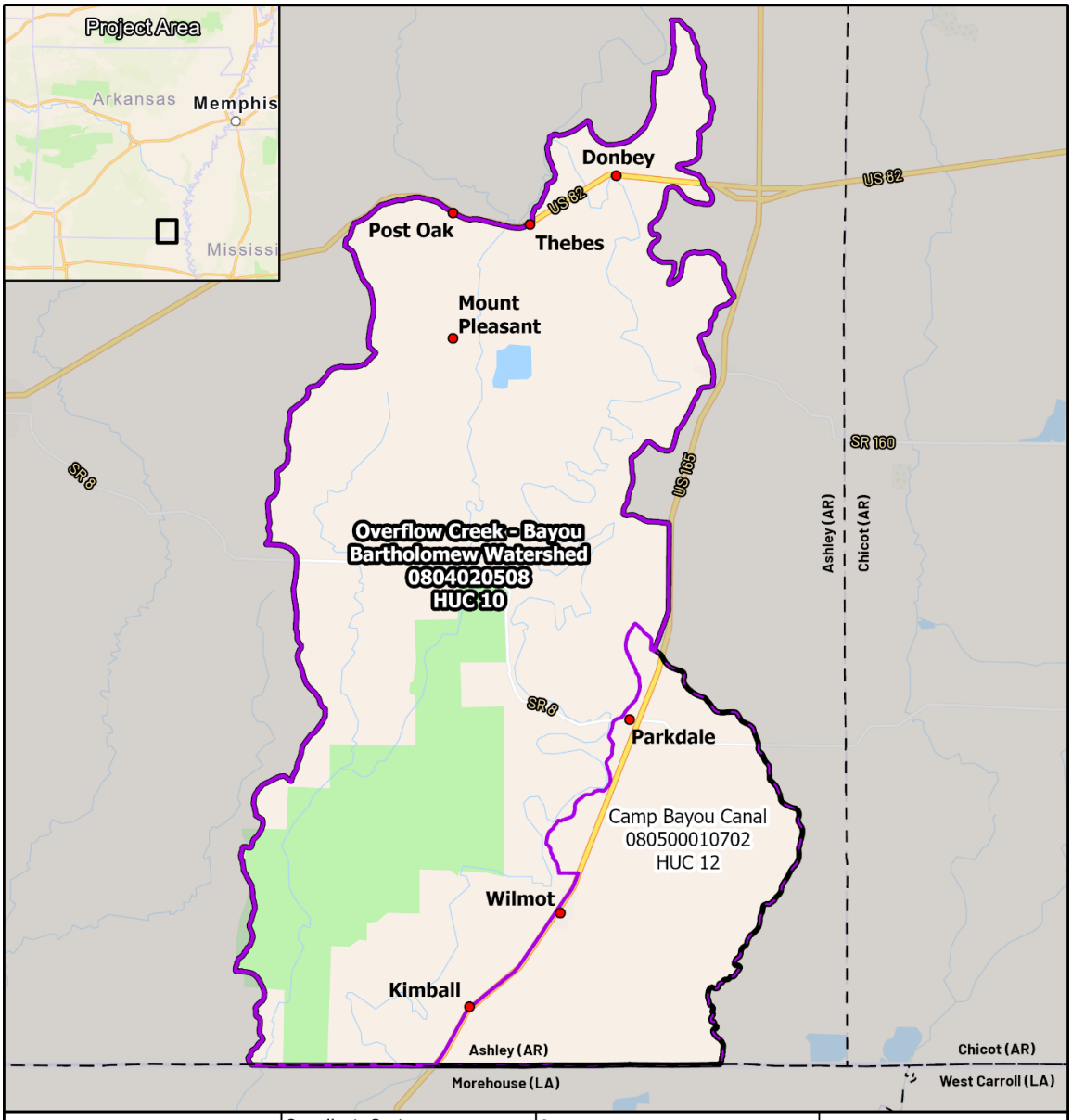


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Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
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Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

U.S. Senator Tom Cotton
1401 West Capitol Ave
Suite 235
Little Rock, AR 72201

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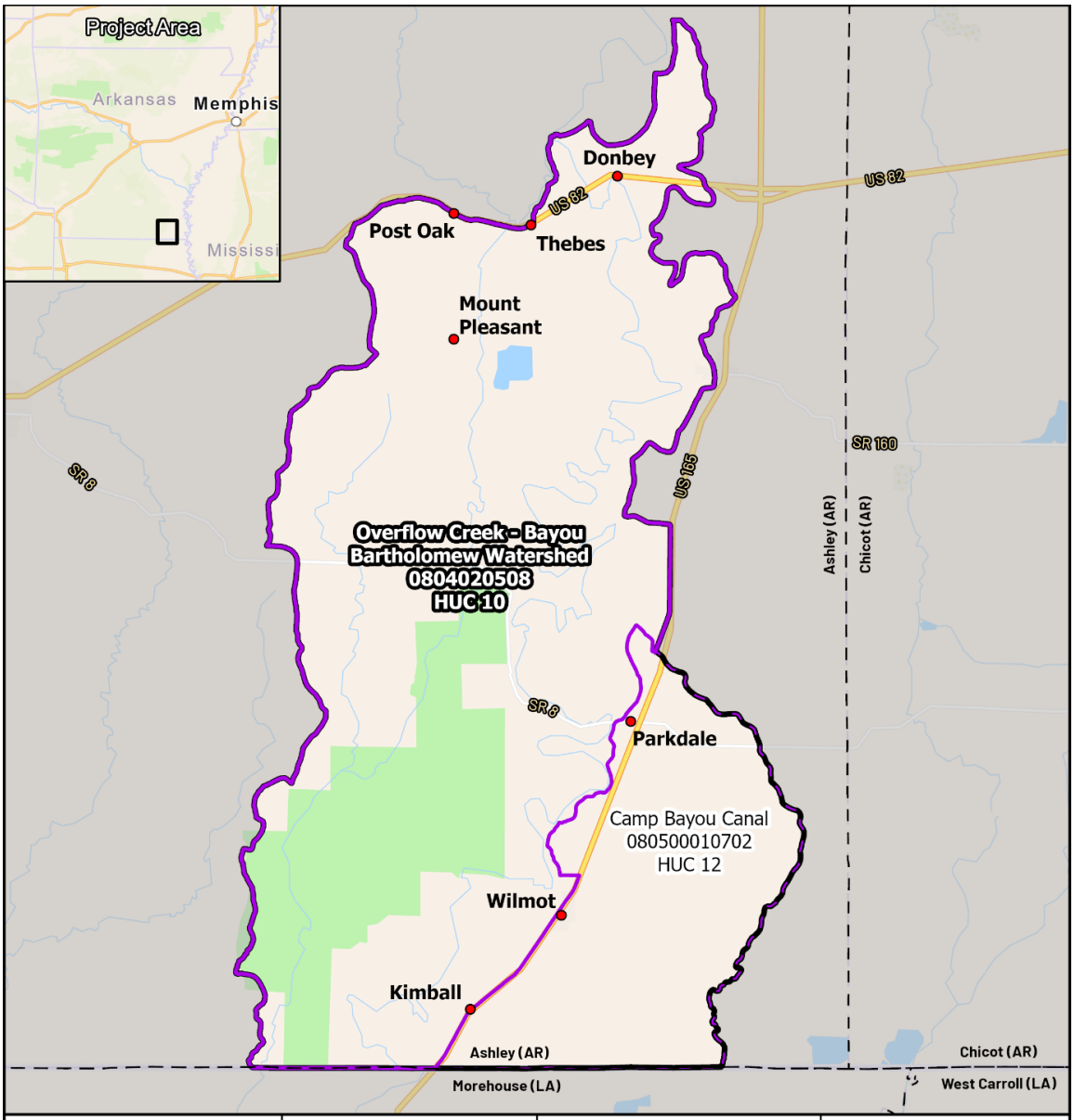


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Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
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Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
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November 16, 2023
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October 19, 2023

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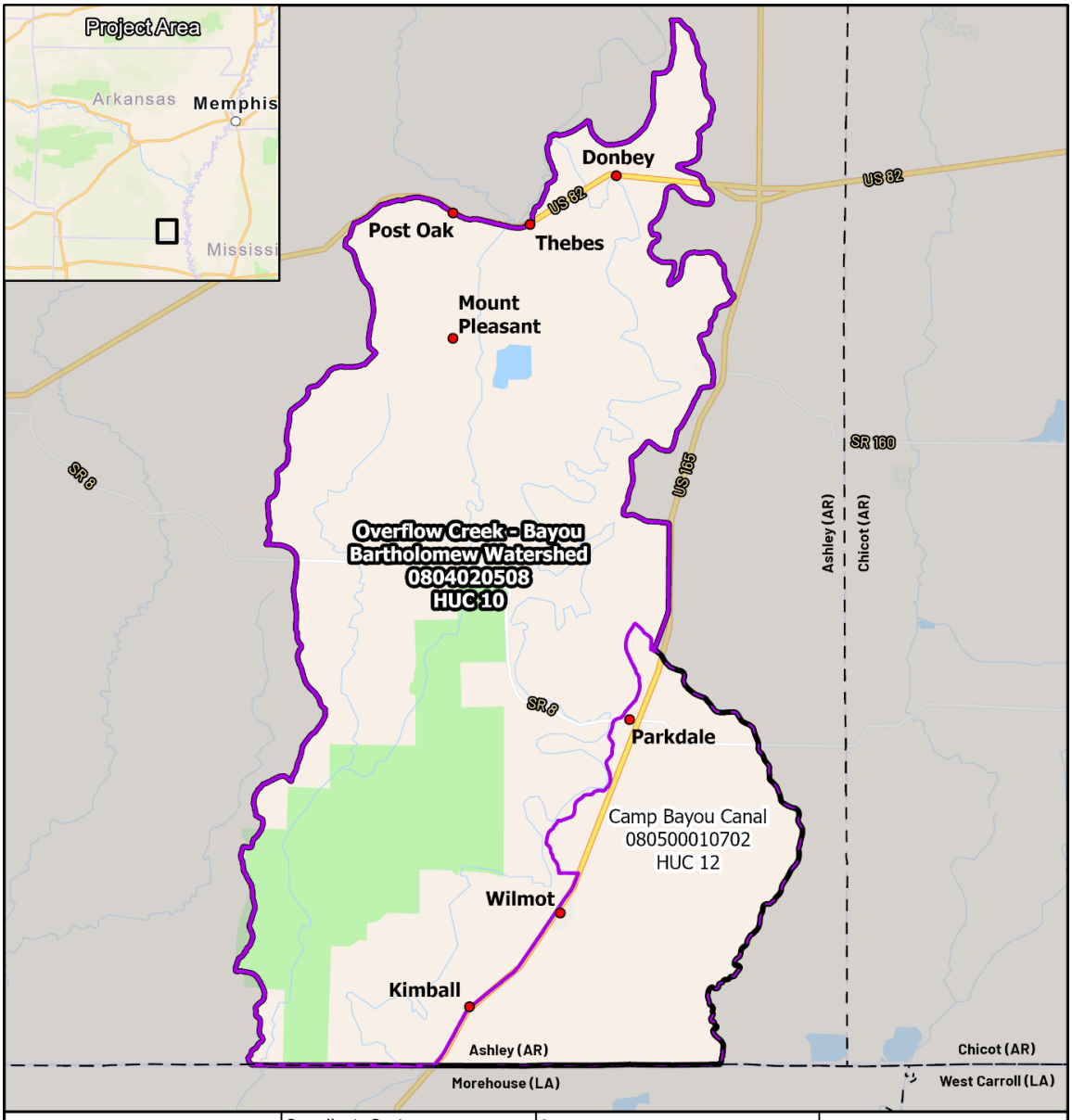


Figure 1

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City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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U.S. Department of the Interior
Office of Environmental Policy & Compliance
1849 C Street, NW MS 5538
Washington, DC 20240

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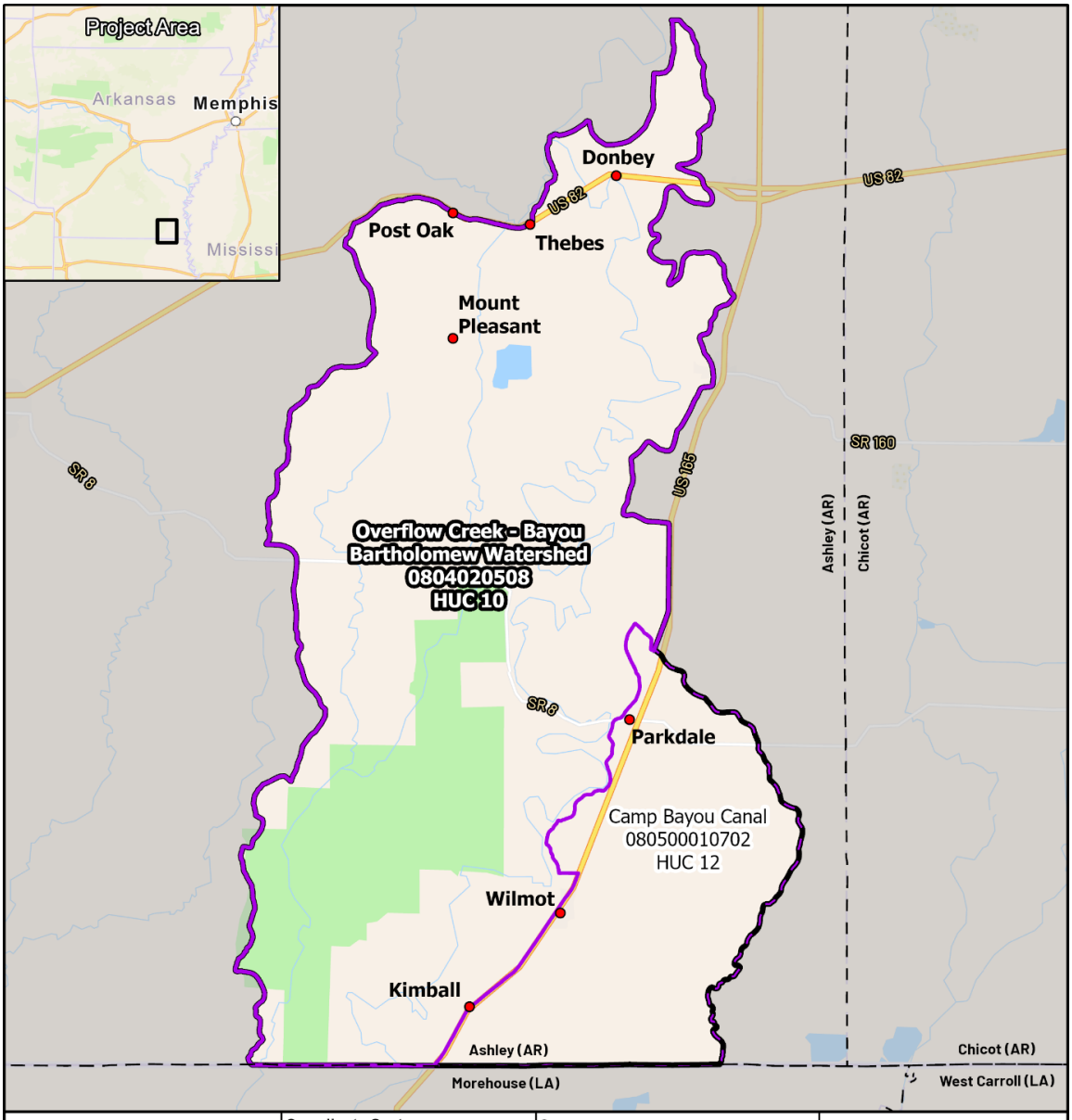


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Headway Environmental

Date: 10/18/2023

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An Equal Opportunity Provider and Employer

Public Notice
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October 19, 2023

U.S. Environmental Protection Agency
USEPA William Jefferson Clinton Building North (WJC North)
1200 Pennsylvania Avenue, N.W.
Washington, DC 20004

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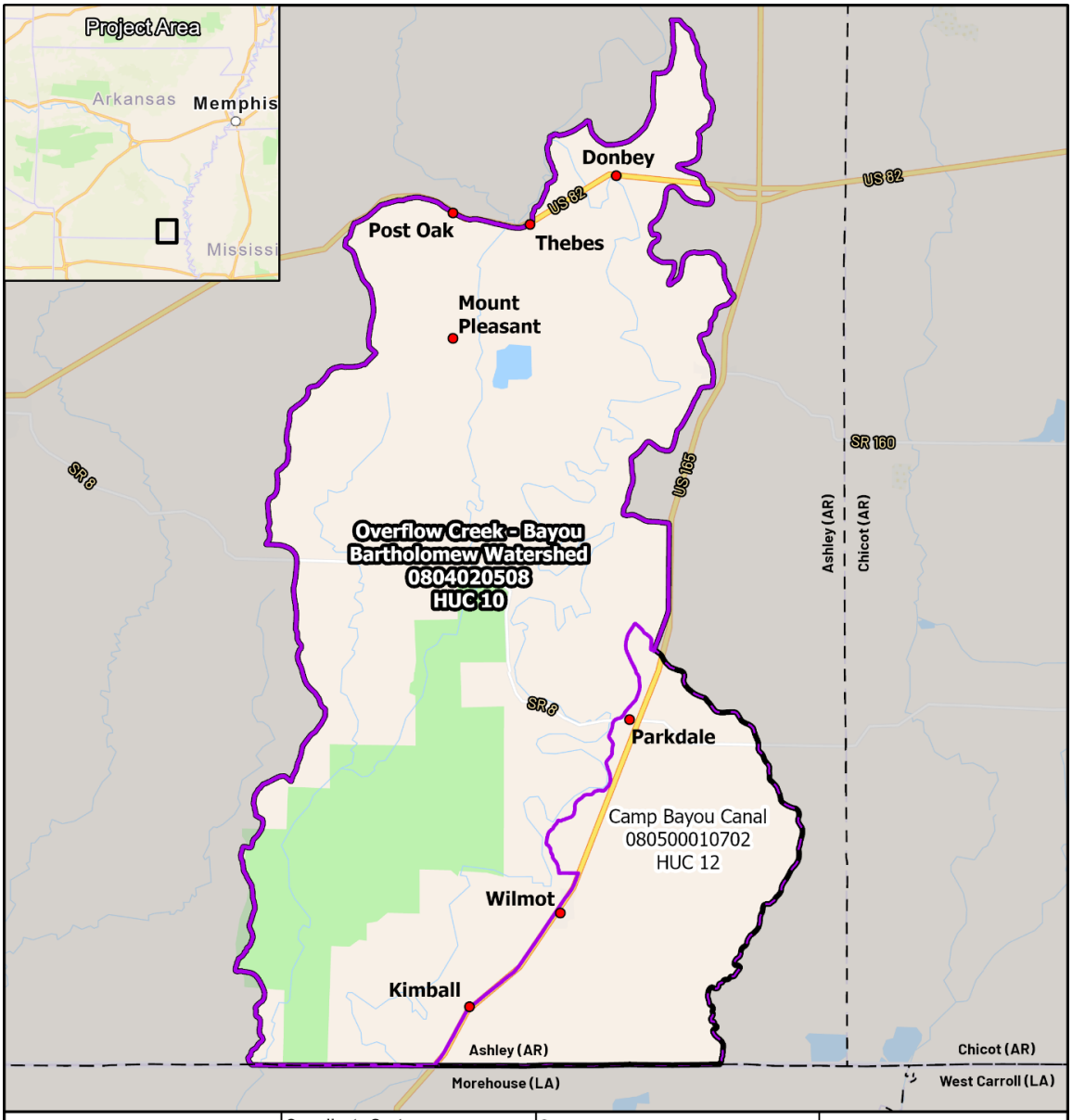


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November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

November 16, 2023
6:00 – 7:45 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will include a presentation followed by an open-house, come-and-go forum, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.

October 19, 2023

Earthea Nance, Regional Administrator
U.S. Environmental Protection Agency, Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that your agency participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and the one 12-digit and one 10-digit HUC watersheds that encompass the city and surrounding areas of the county. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan-EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm, November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail

or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

A virtual (MS Teams) review of the project area is scheduled for November 21, 2023. The meeting will begin at 10:30 am and conclude at 12:00 pm (central standard time). If your agency plans to participate in the review meeting, please notify Bill Kinkaid at william.kinkaid@usda.gov and Lee Forbes (Headway Environmental – Project Consultant) at lforbes@headwayenviro.com by November 17, 2023.

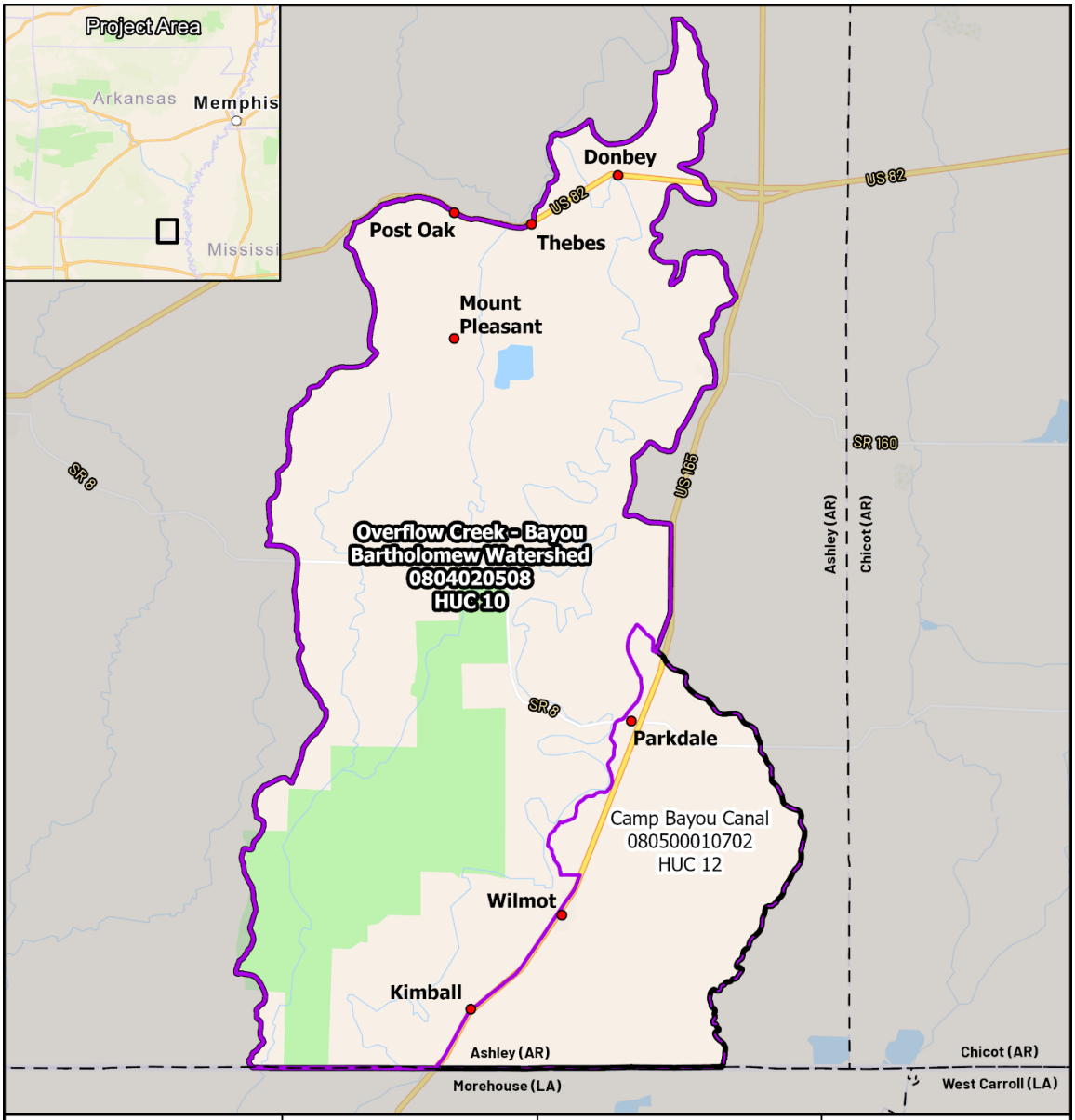
Thank you for your timely response and assistance with the scoping of this project. If you have any questions or comments, please contact Bill Kinkaid of my staff at william.kinkaid@usda.gov or via phone at 501-301-3127.

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

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Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

IN REPLY REFER TO:

August 4, 2026

Cody Vicenik
Headway Environmental
P.O. Box 1282
Humble, TX 77347

Dear Mr. Vicenik:

U.S. Fish and Wildlife Service (Service) staff received an IPaC consistency letter (Project code: 2026-0123044) on August 4, 2026, regarding a watershed improvement project in Wilmot, AR. The following comments are submitted in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.).

Service staff reviewed the information associated with the "may affect, not likely to adversely affect" determination for the pink mucket (*Lampsilis abrupta*). Based on this information, the Service concurs that the proposed action will not adversely affect listed species. Consultation for all other species that may occur within the project area was completed through IPaC. These determinations may be reconsidered should additional information regarding listed or proposed species or designated critical habitat become available.

The Service appreciates your commitment to the conservation of threatened and endangered species. For any questions, please contact Garett Huffstutler at 501-764-6811 or at garett_huffstutler@fws.gov.

Sincerely,

Jason Hight
Arkansas Field Supervisor

Outlook

Fw: [External Sender] [EXTERNAL] City of Wilmot Area – IPaC Determination Key Documentation Review

From Cody Vicenik <cvicenik@headwayenviro.com>
Date Tue 8/11/2026 2:38 PM
To Natalie Bue <Nbue@headwayenviro.com>
Cc Kenny Carothers <kcarothers@headwayenviro.com>; Lee Forbes <lforbes@headwayenviro.com>; Shelby Schroeder <sschroeder@headwayenviro.com>

From: Huffstutler, Garett L <garett_huffstutler@fws.gov>
Sent: Tuesday, August 11, 2026 2:20 PM
To: Cody Vicenik <cvicenik@headwayenviro.com>
Subject: Re: [External Sender] [EXTERNAL] City of Wilmot Area – IPaC Determination Key Documentation Review

External sender - Think before you click

That is correct. Consultation is complete. If there are any major changes to the scope or design of the project, please reinitiate consultation with the Service.

Thank you,

Garett Huffstutler
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Arkansas Ecological Services Field Office
110 South Amity Road, Suite 300
Conway, AR 72032

From: Cody Vicenik <cvicenik@headwayenviro.com>
Sent: Tuesday, August 11, 2026 11:26 AM
To: Huffstutler, Garett L <garett_huffstutler@fws.gov>
Subject: Re: [External Sender] [EXTERNAL] City of Wilmot Area – IPaC Determination Key Documentation Review

Hi Garett,

Following up on my August 6 email transmitting the final BHAs for the Eudora and Wilmot Watershed Plans.

For NRCS's records, could you please confirm that no further Section 7 consultation, conferencing, or coordination with USFWS is required for either project as currently proposed?

Thank you,

Cody Vicenik

SENIOR ENVIRONMENTAL SPECIALIST

Headway Environmental™

cvicenik@headwayenviro.com
Mobile: (713) 208-9096
HOUSTON MAILING: PO Box 1282, Humble TX 77347

www.headwayenviro.com

From: Huffstutler, Garett L <garett_huffstutler@fws.gov>
Sent: Wednesday, August 5, 2026 11:03 AM
To: Cody Vicenik <cvicenik@headwayenviro.com>
Subject: Re: [External Sender] [EXTERNAL] City of Wilmot Area – IPaC Determination Key Documentation Review

External sender - Think before you click

Hi Cody,

I've attached the concurrence letters for the Forrest City and Wilmot watershed plans. You can make a no jeopardy determination for the tricolored bat and the Eudora watershed plan.

From: Cody Vicenik <cvicenik@headwayenviro.com>
Sent: Tuesday, August 4, 2026 9:59 AM
To: Huffstutler, Garett L <garett_huffstutler@fws.gov>
Subject: [EXTERNAL] City of Wilmot Area – IPaC Determination Key Documentation Review

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Garett,

NRCS also requested completion of the threatened and endangered species review for the City of Wilmot Area Project. Attached are the resulting documentation from the AFO Arkansas Multi-Species Determination Key and the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key.

The Arkansas Multi-Species Determination Key resulted in no effect determinations for the eastern black rail, piping plover, rufa red knot, and pondberry; a preliminary may affect, not likely to adversely affect determination for the pink mucket; and a no jeopardy determination for proposed species. The bat determination key resulted in a may affect determination for the proposed tricolored bat.

No bridges were identified within the proposed Project areas, and the culverts did not meet the 3-foot minimum interior-height threshold requiring individual bat structure assessments. Therefore, no separate bridge or culvert assessment documentation was prepared for the Wilmot Project.

Could you please review the attached documentation and let us know whether any additional information or coordination is needed?

The IPaC project code is **2026-0123044**

Thank you, Garett,

Cody Vicenik

SENIOR ENVIRONMENTAL SPECIALIST

Headway Environmental™

cvicenik@headwayenviro.com
Mobile: (713) 208-9096
HOUSTON MAILING: PO Box 1282, Humble TX 77347

www.headwayenviro.com

United States Department of Agriculture

Natural Resources Conservation Service

700 W Capitol Ave. #3416
Little Rock, AR 72201
501-301-3121

April 1, 2025

Garett Huffstutler
Fish and Wildlife Biologist, Arkansas Ecological Services Field Office
U.S. Fish and Wildlife Service
110 South Amity Road, Suite 300
Conway, AR 72032

Subject: Watershed Protection and Flood Prevention Act of 1954, Section 12, Consultation Request for Nine Bipartisan Infrastructure Law Projects

The United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) in Arkansas, in partnership with the Arkansas Black Mayors Association (ABMA) as the project fiscal agent, and with cooperation from the US Fish and Wildlife Service and the USACOE is proposing a suite of projects to implement flood prevention or flood damage reduction measures and works of improvement within the cities of Hughes, Jennette, Dumas, El Dorado, Madison, Altheimer, Stamps, Lewisville, Turrell, Eudora, and Wilmot in Arkansas.

The projects propose to reduce the impacts of flooding on rural communities in Arkansas. The proposed projects are located in the following 10-digit HUCS in Arkansas: Blackfish Bayou, L'Anguille River-St. Francis River, Little Bayou Meto, Lake Erling-Bodcau Creek, Big Creek, Grand Lake-Bayou Macon, and Overflow Creek. The following 12-digit HUCS are also included: Tenmile Bayou-Fifteenmile Bayou, Cypress Creek-Headwaters Boeuf River, Oak Log Bayou-Cypress Bayou, Canal No. 43, Amos Bayou, Haynes Creek, Salt Creek, Boggy Creek, City of El Dorado-Bayou de Loutre, Dry Creek-Little Cornie Bayou, Holmes Creek, Caney Bayou, Tiger Bayou, Paps Slough-Bayou Macon, and Camp Bayou.

The Watershed Protection and Flood Prevention Act of 1954 (often referred to as P.L.83-566 or PL 566) authorizes the NRCS to assist state and local agencies in the development of water resources development projects in watersheds of 250,000 acres or less. NRCS provides technical, financial, and credit assistance to local sponsors in the development of projects for purposes including watershed protection, flood prevention, agricultural water management, ground water recharge, water quality management, and municipal and domestic water supply.

These projects are not covered by the consultation provisions of the Fish and Wildlife Coordination Act of 1934, as amended (FWCA). However, consultation is required under Section 12 of P.L.83-566, which was added to P.L.83-566 by the 1958 amendments to the FWCA. Section 12 was added in recognition of the need for evaluation of fish and wildlife resources impacts and opportunities at P.L.83-566 projects in a manner similar to that required for other construction projects under the FWCA.

Section 12 provides that, in preparing project plans, the Department of Agriculture must consult with the Fish and Wildlife Service (FWS) with regard to the conservation and development of

fish and wildlife resources and provide the FWS with the opportunity to participate in project planning. The FWS is to be afforded the opportunity to make surveys and investigations and prepare reports with recommendations on the conservation and development of fish and wildlife. The Department of Agriculture must give full consideration to the recommendations contained in FWS reports and include features that are determined to be feasible and that are acceptable to the Department and the local project sponsor. FWS reports are to be included in project reports prepared by the Department of Agriculture. No funds are provided by the Department of Agriculture for FWS involvement in P.L.83-566 projects; funds for such work must come from those appropriated for FWS work in project planning.

This letter is being submitted to request consultation under the provisions of Section 12 of P.L.83-566 which provides for consultation similar to that required under the FWCA.

Please provide any information, comments, or concerns you feel are appropriate on the scope of the proposed action. Comments should be submitted by mail to:

Stephen Smedley, State Engineer
USDA-NRCS
Room 3416, Federal
Building 700 West Capitol
Avenue Little Rock, AR
72201

If you have any questions concerning the environmental compliance process on the draft Plan-EA, please contact James Baker, Watershed Ecologist, by email at james.baker2@usda.gov.

Sincerely,



Digitally signed by
AMANDA MATHIS
Date: 2025.04.01
14:09:21 -05'00'

Amanda J. Mathis

State Conservationist

From: Hixson, Bryton K CIV USARMY CEMVK (USA) <Bryton.K.Hixson@usace.army.mil>
Sent: Friday, October 27, 2023 7:42 AM
To: Lee Forbes; william.kinkaid@usda.gov
Cc: Shanna Kistler; Natalie Bue
Subject: RE: Formal request for USACE to be a cooperating agency on two Watershed Plan and Environmental Assessments
Attachments: 2023-10-19_USACE Cooperating Agency Invitation Letter-Eudora.pdf; 2023-10-19 _USACE Cooperating Agency Invitation Letter-Wilmot.pdf

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Good Morning,

Thanks for reaching out. We will make plans to be a part of the meetings on November 21, 2023 as a cooperating agency.

V/R,

Bryton Hixson
Chief (Acting), Arkansas Branch
Deputy Chief (Acting)
Regulatory Division
Vicksburg District, USACE
bryton.k.hixson@usace.army.mil
P: 601.631.5591 “

From: Lee Forbes <lforbes@headwayenviro.com>
Sent: Friday, October 27, 2023 9:31 AM
To: Hixson, Bryton K CIV USARMY CEMVK (USA) <Bryton.K.Hixson@usace.army.mil>
Cc: Shanna Kistler <skistler@headwayenviro.com>; Natalie Bue <Nbue@headwayenviro.com>

Subject: [Non-DoD Source] FW: Formal request for USACE to be a cooperating agency on two Watershed Plan and Environmental Assessments

Bryton Hixson
Acting Chief, Arkansas Branch
U.S. Army Corps of Engineers, Vicksburg District
4155 E Clay St
Vicksburg, MS 39183

Dear Mr. Hixson:

Attached please find attached the formal request from the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) for the USACE – Vicksburg District to become a cooperating agency in the planning and development of two (2) Watershed Plan and Environmental Assessment (Plan-EA) projects that are located within the Vicksburg District's regulatory jurisdictional boundaries. Headway Environmental (Headway) is submitting these documents on behalf of the NRCS, acting in the role of the consulting engineer hired by the Sponsor (the Arkansas Black Mayors Association) to implement the projects. The two separate invitation letters represent two separate projects. One project is located in Chicot County, Arkansas in the City of Eudora Area and surrounding communities. The second project is located in Asley County, Arkansas in the City of Wilmot Area and surrounding communities. Please note that we have also mailed copies of these invitation letters to your offices and sent an email to the general email for the regulatory division. Please let me know if you have any questions or need additional information.

Best regards,

Lee W. Forbes, P.E., D.WRE
Director – Ecological Restoration Engineering

lforbes@headwayenviro.com
+1 (832) 544-0482

HOME OFFICE: 123 Medalist Rd, Monroe, LA 71203
HOUSTON OFFICE: PO Box 1282, Humble, TX 77347

www.headwayenviro.com

From: Lee Forbes
Sent: Wednesday, November 29, 2023 11:09 AM
To: Natalie Bue
Cc: Shanna Kistler
Subject: Fw: MVK-2023-738; City of Eudora Area_MVK-2023-742; City of Wilmot Area (Watershed Plan and Environmental Assessment

Natalie - Please see email below relative to the USACE Vicksburg District's involvement going forward for both projects and note in the reports and files as necessary..

Thanks,

Lee W. Forbes, P.E., D.WRE
Director – Ecological Restoration Engineering

lforbes@headwayenviro.com
+1 (832) 544-0482

HOME OFFICE: 123 Medalist Rd, Monroe, LA 71203
HOUSTON OFFICE: PO Box 1282, Humble, TX 77347

www.headwayenviro.com

From: Graham, Tarmiko V CIV USARMY CEMVD (USA) <Tarmiko.V.Graham@usace.army.mil>
Sent: Tuesday, November 28, 2023 1:43 PM
To: Lee Forbes <lforbes@headwayenviro.com>; william.kinkaid@usda.gov <william.kinkaid@usda.gov>
Cc: Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>; Hixson, Bryton K CIV USARMY CEMVK (USA) <Bryton.K.Hixson@usace.army.mil>
Subject: MVK-2023-738; City of Eudora Area_MVK-2023-742; City of Wilmot Area (Watershed Plan and Environmental Assessment

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Good afternoon Lee,

It was a great pleasure to participate in the virtual meetings for the City of Eudora Area and City of Wilmot Area Watershed Plan and Environmental Assessment on 21 NOV

23. Historically, our involvement with NRCS funded projects has been limited to using NRCS submittals (EAs) for documentation in our final permit decision.

If there aren't any questions or concerns, I would like to close both actions in our database. Please reference the MVK #'s when submitting any correspondence pertaining to both above subject actions.

Please feel free to contact me if you have any questions or concerns for the above Watershed Project Plan and Environmental Assessments for these two proposed actions.

Respectfully,

Tarmiko V. Graham
Senior Project Manager, Biologist
Arkansas Branch, Regulatory Division
U.S. Army Corps of Engineers, Vicksburg District
601-631-5540 (Office)
Tarmiko.V.Graham@usace.army.mil

From: Graham, Tarmiko V CIV USARMY CEMVD (USA) <Tarmiko.V.Graham@usace.army.mil>
Sent: Wednesday, January 3, 2024 10:50 AM
To: Natalie Bue
Cc: Lee Forbes; Shanna Kistler; Hixson, Bryton K CIV USARMY CEMVK (USA); Bourne, Gerald G Jr CIV USARMY CEMVK (USA)
Subject: RE: NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

You don't often get email from tarmiko.v.graham@usace.army.mil. Learn why this is important

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Good morning Natalie,

At this time, I am unaware of any other related projects related to the City of Eudora Area and the City of Wilmot Area.

Thank you for keeping me in the loop.

Respectfully,

Tarmiko V. Graham
Senior Project Manager, Biologist
Arkansas Branch, Regulatory Division
U.S. Army Corps of Engineers, Vicksburg District
601-631-5540 (Office)
Tarmiko.V.Graham@usace.army.mil

From: Natalie Bue <Nbue@headwayenviro.com>
Sent: Wednesday, January 3, 2024 12:37 PM
To: Graham, Tarmiko V CIV USARMY CEMVD (USA) <Tarmiko.V.Graham@usace.army.mil>
Cc: Lee Forbes <lforbes@headwayenviro.com>; Shanna Kistler <skistler@headwayenviro.com>
Subject: [Non-DoD Source] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

Hi Tarmiko,

I am reaching out regarding the NRCS Plan-Environmental Assessment Projects for the City of Eudora Area project and City of Wilmot Area project, which you attended the agency project information meetings for. I have included the project maps to this email as a reminder of the project boundaries for each project.

We are working on the Plan-EA write-up and gathering resource information. We wanted to reach out to see if USACE is aware of any other related projects or studies within either of these two project areas that we should be aware of for incorporation into our planning and environmental consequences review for these projects.

Thank you for your assistance,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Hixson, Bryton K CIV USARMY CEMVK (USA) <Bryton.K.Hixson@usace.army.mil>
Sent: Friday, October 27, 2023 9:42 AM
To: Lee Forbes <lforbes@headwayenviro.com>; william.kinkaid@usda.gov
Cc: Shanna Kistler <skistler@headwayenviro.com>; Natalie Bue <Nbue@headwayenviro.com>
Subject: RE: Formal request for USACE to be a cooperating agency on two Watershed Plan and Environmental Assessments

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V/R,

Bryton Hixson
Chief (Acting), Arkansas Branch
Deputy Chief (Acting)
Regulatory Division
Vicksburg District, USACE
bryton.k.hixson@usace.army.mil
P: 601.631.5591 “

From: Lee Forbes <lforbes@headwayenviro.com>
Sent: Friday, October 27, 2023 9:31 AM
To: Hixson, Bryton K CIV USARMY CEMVK (USA) <Bryton.K.Hixson@usace.army.mil>
Cc: Shanna Kistler <skistler@headwayenviro.com>; Natalie Bue <Nbue@headwayenviro.com>
Subject: [Non-DoD Source] FW: Formal request for USACE to be a cooperating agency on two Watershed Plan and Environmental Assessments

Bryton Hixson
Acting Chief, Arkansas Branch
U.S. Army Corps of Engineers, Vicksburg District
4155 E Clay St
Vicksburg, MS 39183

Dear Mr. Hixson:

Attached please find attached the formal request from the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) for the USACE – Vicksburg District to become a cooperating agency in the planning and development of two (2) Watershed Plan and Environmental Assessment (Plan-EA) projects that are located within the Vicksburg District's regulatory jurisdictional boundaries. Headway Environmental (Headway) is submitting these documents on behalf of the NRCS, acting in the role of the consulting engineer hired by the Sponsor (the Arkansas Black Mayors Association) to implement the projects. The two separate invitation letters represent two separate projects. One project is located in Chicot County, Arkansas in the City of Eudora Area and surrounding communities. The second project is located in Asley County, Arkansas in the City of Wilmot Area and surrounding communities. Please note that we have also mailed copies of these invitation letters to your offices and sent an email to the general email for the regulatory division. Please let me know if you have any questions or need additional information.

Best regards,

Lee W. Forbes, P.E., D.WRE
Director – Ecological Restoration Engineering

lforbes@headwayenviro.com
+1 (832) 544-0482

HOME OFFICE: 123 Medalist Rd, Monroe, LA 71203
HOUSTON OFFICE: PO Box 1282, Humble, TX 77347



www.headwayenviro.com

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Monday, January 29, 2024 2:41 PM
To: Jeremy Rice; Lee Forbes; Keith Britton; ejones@ejesinc.com; Stengel, Michael H; Philip Massirer; Kelley Eubanks
Cc: Kale Farmer; Valerie Miller; Shanna Kistler; Natalie Bue; Chandoo, Mujahid; Holliday, TJ; leefarmcomconsult13@gmail.com; Kinkaid, William - FPAC-NRCS, AR; Childress, Randy - FPAC-NRCS, AR
Subject: USFWS Point of Contact

Follow Up Flag: Follow up
Flag Status: Flagged

You don't often get email from karen.mccurdy@craftontull.com. Learn why this is important

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Hi all,

Please see the message below from Garett Huffstutler, who will be our USFWS point of contact for all of the ABMA watershed projects. I followed up with him to see if he would be willing to do a Teams meeting with the full group to introduce himself, offer any collective guidance and thoughts, and answer any questions. He said he is open to that anytime next week or after. If any of you would like to do that, please let me know and I'll work on getting a time scheduled that works for those who want to join.

Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tull

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
Rogers, AR 72756
www.craftontull.com

Disclaimer
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From: Huffstutler, Garett L <**garett_huffstutler@fws.gov**>
Sent: Wednesday, January 24, 2024 4:41 PM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>
Subject: [External] USFWS Point of Contact

Good afternoon,

My name is Garett Huffstutler. I am the U.S. Fish and Wildlife Service point of contact for USDA-NRCS. Please feel free to reach with any questions or concerns regarding the Watershed Project Plan and Environmental Assessment. Thank you.

Garett Huffstutler
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Arkansas Ecological Services Field Office
110 South Amity Road, Suite 300
Conway, AR 72032

From: Lee Forbes
Sent: Tuesday, November 28, 2023 12:23 PM
To: Shanna Kistler; Natalie Bue
Subject: Fw: [External] FW: [External Email]City of Wilmot Area Watershed Plan and EA

Shanna & Natalie - Please see info below from AR Department of Parks, Heritage and Tourism regarding grant supported park in Eudora.

Lee W. Forbes, P.E., D.WRE
Director – Ecological Restoration Engineering

lforbes@headwayenviro.com
+1 (832) 544-0482

HOME OFFICE: 123 Medalist Rd, Monroe, LA 71203
HOUSTON OFFICE: PO Box 1282, Humble, TX 77347

www.headwayenviro.com

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Tuesday, November 28, 2023 10:53 AM
To: Lee Forbes <lforbes@headwayenviro.com>
Subject: FW: [External] FW: [External Email]City of Wilmot Area Watershed Plan and EA

External sender - Think before you click

Hi Lee,

Please see the Agency Scoping Meeting follow-up message below from the Office of Outdoor Recreation.

Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tu
Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
Rogers, AR 72756
www.craftontull.com

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From: Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Sent: Tuesday, November 28, 2023 7:23 AM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>
Cc: Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>
Subject: [External] FW: [External Email]City of Wilmot Area Watershed Plan and EA

Please Forward to representative A/E Firm.

-Bill

From: Randy Roberson <randy.roberson@arkansas.gov>
Sent: Monday, November 27, 2023 5:06 PM
To: Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Subject: [External Email]City of Wilmot Area Watershed Plan and EA

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Bill:

I appreciate the invitation to participate in in project scoping and development of the City of Wilmot Area Watershed Project Plan and Environmental Assessment. As the Environmental Review Coordinator for the Outdoor Recreation Grants Program of the Department of Parks, Heritage and Tourism, I will focus my attention on a proposed project's potential to negatively impact public outdoor recreation sites with emphasis on those sites that have utilized grant funds administered by our program.

Based on the information provided, it appears that there are two such sites within the study area. They are:

City/County/Agency	Park Name	Grant Type	Encumbrance
Wilmot	Wilmot City Park	FUN Park Grant F-187-13	Minimum 25 years
Portland	Gus Pugh Memorial Park	FUN Park Grant F-234-18	Minimum 25 years
Portland	Gus Pugh Memorial Park	State Matching Grant A-10179-96	In perpetuity
Portland	Gus Pugh Memorial Park	Federal Matching Grant 05-00519-83	In perpetuity
Porland	Gus Pugh Memorial Park	Federal Matching Grant 05-00417-80	In perpetuity

Cities that utilize state and federal Matching Grant funds are obligated to maintain grant funded park sites for public outdoor recreation in perpetuity.
Cities that utilize FUN Park Grant funds are obligated to maintain grant funded park sites for public outdoor recreation for a minimum of 25 years.
The obligations associated with the utilization of state and/or federal Matching Grant funds supersede those associated with the FUN Park Grant program.

I look forward to participating in the scoping and development of the Watershed Project Plan and EA. Please let me know if you need additional information.

Sincerely,

RANDY ROBERSON,
Project Officer – Environmental Review Coordinator
Outdoor Recreation Grants Program - Office of Outdoor Recreation

Arkansas Department of Parks, Heritage and Tourism
One Capitol Mall, Suite 4B.215
Little Rock, AR 72201
randy.roberson@arkansas.gov
p: 501.682.6946 | c: 501-297-1787

OutdoorGrants.com

https://adpht.arkansas.gov/office-of-outdoor-recreation

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From: Randy Roberson <randy.roberson@arkansas.gov>
Sent: Monday, January 22, 2024 9:41 AM
To: Natalie Bue
Subject: RE: [External] FW: [External Email]City of Wilmot Area Watershed Plan and EA
Attachments: Wilmot City Park.jpg

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Natalie,

The coordinates you gave fall in what we recognize as Wilmot City Park. I've attached a graphic showing a couple of polygons that correspond to what we understand is the park boundary (purple) and city property (orange).

Sincerely,

RANDY ROBERSON,
Project Officer – Environmental Review Coordinator
Outdoor Recreation Grants Program - Office of Outdoor Recreation

Arkansas Department of Parks, Heritage and Tourism
One Capitol Mall, Suite 4B.215
Little Rock, AR 72201
randy.roberson@arkansas.gov
p: 501.682.6946 | c: 501-297-1787

OutdoorGrants.com

https://adpht.arkansas.gov/office-of-outdoor-recreation

From: Natalie Bue <Nbue@headwayenviro.com>
Sent: Saturday, January 20, 2024 12:48 PM
To: Randy Roberson <randy.roberson@arkansas.gov>
Cc: Lee Forbes <lforbes@headwayenviro.com>; Shanna Kistler <skistler@headwayenviro.com>; Blake Bottomley <bbottomley@chronicleheritage.com>
Subject: RE: [External] FW: [External Email]City of Wilmot Area Watershed Plan and EA

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Hi Randy,

Can you please confirm the location of Wilmot City Park? It doesn't seem to come up on internet or map searches, but we think it may be the park at this location: 33°02'56.4"N 91°34'55.0"W. Can you please confirm if this is the correct park or if not where the park is located?

Thank you for your assistance.

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Tuesday, November 28, 2023 10:53 AM
To: Lee Forbes <lforbes@headwayenviro.com>
Subject: FW: [External] FW: [External Email]City of Wilmot Area Watershed Plan and EA

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Hi Lee,

Please see the Agency Scoping Meeting follow-up message below from the Office of Outdoor Recreation.

Thanks,

Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tull

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
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From: Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Sent: Tuesday, November 28, 2023 7:23 AM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>
Cc: Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>
Subject: [External] FW: [External Email]City of Wilmot Area Watershed Plan and EA

Please Forward to representative A/E Firm.

-Bill

From: Randy Roberson <randy.roberson@arkansas.gov>
Sent: Monday, November 27, 2023 5:06 PM
To: Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Subject: [External Email]City of Wilmot Area Watershed Plan and EA

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Bill:

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my attention on a proposed project's potential to negatively impact public outdoor recreation sites with emphasis on those sites that have utilized grant funds administered by our program.

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Porland	Gus Pugh Memorial Park	Federal Matching Grant 05-00417-80	In perpetuity

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Sincerely,

RANDY ROBERSON,

Project Officer – Environmental Review Coordinator

Outdoor Recreation Grants Program - Office of Outdoor Recreation

Arkansas Department of Parks, Heritage and Tourism

One Capitol Mall, Suite 4B.215

Little Rock, AR 72201

randy.roberson@arkansas.gov

p: 501.682.6946 | c: 501-297-1787

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From: Natalie Bue
Sent: Monday, May 20, 2024 8:32 AM
To: Randy Roberson; Lee Forbes
Cc: Shanna Kistler
Subject: RE: City of Wilmot Area and City of Eudora Area Watershed Plan-EA Projects

Hi Randy,

Per our phone call discussion just now, I have CC'ed Lee Forbes on this email who is our lead engineer on the project. He should be able to answer some of your questions or concerns regarding potential impacts to park facilities, such as the walking trail and trail bridge crossing, that might potentially be impacted by our project.

Lee will follow up with you to set up a call or meeting to discuss further.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Natalie Bue
Sent: Thursday, April 18, 2024 10:49 AM
To: Randy Roberson <randy.roberson@arkansas.gov>
Cc: Shanna Kistler <skistler@headwayenviro.com>; Lee Forbes <lforbes@headwayenviro.com>
Subject: City of Wilmot Area and City of Eudora Area Watershed Plan-EA Projects

Hi Randy,

I am reaching out on behalf of the City of Wilmot Area Watershed Plan-EA project and City of Eudora Watershed Plan-EA project, which are being funded by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). You previously attended our agency scoping informational meeting in November 2023 and provided our team with information regarding parks which have utilized grant funds administered by your program.

Please see the attached preliminary concept design plans for the City of Wilmot, which includes proposed project activities within Wilmot City Park. Proposed project activities would involve enhancing the existing stream channel to better manage water flow during storm and flooding events. I have also included concept design plans for project activities in the City of Parkdale (associated with the Wilmot Area project) and City of Eudora (associated with the City of Eudora Watershed Plan-EA project) for your reference. Some roadside drainage ditch maintenance and/or cleaning is proposed near the City of Eudora park, but no major activities or changes to the park are proposed (see attached concept design plans).

You can also find additional information and keep up with the status of the projects at the Arkansas Black Mayors Association (ABMA) website for Wilmot (here) and Eudora (here).

If your team has any questions, comments, or would like to discuss proposed project plans with our team in more detail, please let us know. Our team is currently working to finalize proposed project plans with the NRCS, community members, and other stakeholders in the coming weeks, so if your team has any questions, comments, or concerns with project activities, particularly those within Wilmot City Park, we would appreciate your timely response.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST



Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Lee Forbes
Sent: Friday, May 24, 2024 1:04 PM
To: Randy Roberson; Natalie Bue
Cc: Shanna Kistler
Subject: RE: City of Wilmot Area and City of Eudora Area Watershed Plan-EA Projects

Thank you, Randy, for your review and comments. We will definitely work with Mayor Harris to refine the plans to avoid or minimize any impacts to any existing roads, walking trails, parking facilities, or ballfields and will, at a minimum, incorporate replacement or mitigation for any unavoidable impacts in the final design. We look forward to your continued involvement as the project moves forward and will of course provide you with revised plans for review once they are developed.

Best regards,

Lee W. Forbes, P.E., D.WRE
Director – Ecological Restoration Engineering

lforbes@headwayenviro.com
+1 (832) 544-0482

HOME OFFICE: 123 Medalist Rd, Monroe, LA 71203
HOUSTON OFFICE: PO Box 1282, Humble, TX 77347

www.headwayenviro.com

From: Randy Roberson <randy.roberson@arkansas.gov>
Sent: Friday, May 24, 2024 2:25 PM
To: Natalie Bue <Nbue@headwayenviro.com>
Cc: Shanna Kistler <skistler@headwayenviro.com>; Lee Forbes <lforbes@headwayenviro.com>
Subject: RE: City of Wilmot Area and City of Eudora Area Watershed Plan-EA Projects

External sender - Think before you click

Natalie,

Thank you for the opportunity to review information regarding the above subject. As the Environmental Review Coordinator for the Arkansas Department of Parks, Heritage and Tourism's Outdoor Recreation Grants Program, I focus my attention on a project's potential to affect public outdoor recreation sites with emphasis on those sites that have utilized grant funds administered by our program.

Based on the information provided for the City of Wilmot, it appears that the proposed drainage improvements will directly affect a public outdoor recreation site in the City of Wilmot. We understand the design team is aware of the existing park and that the proposed project could affect park land and resources to include existing roads, walking trails, parking facility and ballfield We highly recommend working with the City of Wilmot to develop and refine project design to minimize / eliminate negative effects to park land and facilities.

Based on the information provided for the City of Eudora, it appears unlikely that the proposed drainage improvements will directly affect public outdoor recreation sites monitored by our program.

Based on the information provided for the City of Parkdale, it appears the proposed drainage improvements will not affect any public outdoor recreation sites monitored by our program.

Please accept this e-mail as our response for your request for review of the above referenced items.

Sincerely,

RANDY ROBERSON,
Project Officer – Environmental Review Coordinator

Office of Outdoor Recreation - Outdoor Recreation Grants Program
Arkansas Department of Parks, Heritage and Tourism
One Capitol Mall, Suite 4B.215
Little Rock, AR 72201
randy.roberson@arkansas.gov
p: 501.682.6946 | c: 501-297-1787

OutdoorGrants.com

https://adpht.arkansas.gov/office-of-outdoor-recreation

From: Natalie Bue <Nbue@headwayenviro.com>
Sent: Thursday, April 18, 2024 10:49 AM
To: Randy Roberson <randy.roberson@arkansas.gov>
Cc: Shanna Kistler <skistler@headwayenviro.com>; Lee Forbes <lforbes@headwayenviro.com>
Subject: City of Wilmot Area and City of Eudora Area Watershed Plan-EA Projects

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Hi Randy,

I am reaching out on behalf of the City of Wilmot Area Watershed Plan-EA project and City of Eudora Watershed Plan-EA project, which are being funded by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). You previously attended our agency scoping informational meeting in November 2023 and provided our team with information regarding parks which have utilized grant funds administered by your program.

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If your team has any questions, comments, or would like to discuss proposed project plans with our team in more detail, please let us know. Our team is currently working to finalize proposed project plans with the NRCS, community members, and other stakeholders in the coming weeks, so if your team has any questions, comments, or concerns with project activities, particularly those within Wilmot City Park, we would appreciate your timely response.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, April 4, 2024 2:05 PM
To: ejones@ejesinc.com; Philip Massirer; Asamenaw Seyoum; Lee Forbes; Shanna Kistler; Natalie Bue; Chandoo, Mujahid; Holliday, TJ; Stengel, Michael H; Kelley Eubanks; Keith Britton; Valerie Miller; Jeremy Rice; Kale Farmer
Cc: leefarmcomconsult13@gmail.com
Subject: ARDOT Participating Agency Letter
Attachments: ARDOT Participating Agency Letter.pdf

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Hi all,

Please find a letter from ARDOT addressing all of your agency invitation letters collectively.

Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
Rogers, AR 72756
https://nam11.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.craftontull.com%2F&data=05%7C02%7Cnbue%40headwayenviro.com%7C94e30106777f401b081208dc54eb0090%7C320dab737afa4adf9a7d9fc3dc62da04%7C0%7C0%7C638478615602350488%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=i8NLOGORV6u3hx5dkrPde2V3%2F%2FBhxJM4V02DLfQ0ENA%3D&reserved=0
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ARKANSAS DEPARTMENT OF TRANSPORTATION
ARDOT.gov | IDriveArkansas.com | Lorie H. Tudor, P.E., Director
ENVIRONMENTAL DIVISION
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2281 | Fax: 501.569.2009

March 28, 2024

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Re: Formal request for Arkansas Department of Transportation to be a cooperating agency on the ABMA/USDA-NRCS Watershed Project Plans and Environmental Assessments

In response to your letters dated October 23, 2023 and January 4, 2024, the Arkansas Department of Transportation (ARDOT) accepts the invitation to participate in the U.S. Department of Agriculture Natural Resources Conservation Service National Environmental Policy Act (NEPA) processes for the 14 proposed watershed projects sponsored by the Arkansas Black Mayors Association. Due to the likely limited scope of involvement of ARDOT infrastructure and right of way, and as a state governmental agency not subject to federal NEPA compliance requirements, ARDOT is requesting to be involved in the projects as a participating agency, as defined by 40 C.F.R. § 1508.1(w).

ARDOT's anticipated level of NEPA involvement includes the review of proposed alternatives, environmental analyses, and design plans for compliance and compatibility with current highway design standards, hydraulic models, and future construction. Proposed activities within highway right of way will require ARDOT permits before construction within the right of way may begin. Coordination is also requested to ensure that any proposed work within the Pine Bluff watershed maintains compliance with the Municipal Separate Storm Sewer System (MS4) General Permits held by both the City of Pine Bluff and ARDOT.

Information on projects currently programmed, scheduled, and under construction, and the location of bridges, wetland mitigation, and stream mitigation owned by ARDOT, can be seen in a webapp at this location: https://t.ly/XMQoV.

We look forward to working with your staff and consultants on the planning and design of the proposed projects. Please contact Susan Staffeld of my staff at (501) 569-2611 or susan.staffeld@ardot.gov if you have any questions, have issues using the webapp, or need additional information.

Sincerely,

Josh Seagraves
Division Head - Environmental

c: FHWA

JS:SS:sw

From: Lee Forbes
Sent: Tuesday, May 14, 2024 10:27 AM
To: Karen McCurdy; Staffeld, Susan; Shanna Kistler; Natalie Bue
Cc: leefarmcomconsult13@gmail.com; Childress, Randy - FPAC-NRCS, AR; Kinkaid, William - FPAC-NRCS, AR
Subject: RE: ARDOT review of Eudora and Wilmot projects

Thanks Karen and it's a pleasure to meet you Susan! We expect to have our 10% (Concept/Planning Design) Plan Sets completed by the end of the week and will immediately thereafter send to Susan for review along with a KMZ file of the layouts for Google Earth Pro. Susan – feel free to reach out to me or Natalie Bue in the meantime if you have any questions or would like to discuss further.

Best regards,

Lee W. Forbes, P.E., D.WRE
Director – Ecological Restoration Engineering

lforbes@headwayenviro.com
+1 (832) 544-0482

HOME OFFICE: 123 Medalist Rd, Monroe, LA 71203
HOUSTON OFFICE: PO Box 1282, Humble, TX 77347

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From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Tuesday, May 14, 2024 10:28 AM
To: Lee Forbes <lforbes@headwayenviro.com>; Shanna Kistler <skistler@headwayenviro.com>; Natalie Bue <Nbue@headwayenviro.com>
Cc: Staffeld, Susan <Susan.Staffeld@ardot.gov>; leefarmcomconsult13@gmail.com; Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>; Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Subject: ARDOT review of Eudora and Wilmot projects

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Good morning, Headway Environmental team,

I'd like to introduce you to Susan Staffeld (cc'd). Susan is our liaison to ARDOT for the ABMA Watershed projects. She will facilitate her agency's review and comment on your proposed projects that fall within ARDOT's right of

way. Yours will be the first projects to be reviewed, so there may be a little working out of kinks around the process. Please send her descriptions and geospatial data at your earliest convenience. That will allow her team to understand what you're proposing and where and should be a great first step to getting the ball rolling.

Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tull

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
Rogers, AR 72756
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From: Natalie Bue
Sent: Wednesday, January 3, 2024 10:17 AM
To: Karen.McCurdy@craftontull.com
Cc: Lee Forbes; Shanna Kistler
Subject: NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

Hi Karen,

I am reaching out regarding the NRCS Plan-EA Projects for the City of Eudora Area and City of Wilmot Area projects. We are working on the Plan-EA write-up and gathering resource information. We wanted to reach out to see if the NRCS is aware of any other related projects or studies within either of these two project areas that we should be aware of for incorporation into our planning and environmental consequences review for these projects.

We are also reaching out to the communities and doing some research into this, but if the NRCS is aware of any projects or related studies for either project watershed study area please let us know.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST



Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, January 4, 2024 6:39 AM
To: Natalie Bue
Cc: Lee Forbes; Shanna Kistler
Subject: RE: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

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Hi Natalie,

Please look for three forwarded emails following this message with potentially relevant attachments from NRCS.

Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tu

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
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From: Natalie Bue <Nbue@headwayenviro.com>
Sent: Wednesday, January 3, 2024 12:17 PM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>
Cc: Lee Forbes <lforbes@headwayenviro.com>; Shanna Kistler <skistler@headwayenviro.com>
Subject: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

Hi Karen,

I am reaching out regarding the NRCS Plan-EA Projects for the City of Eudora Area and City of Wilmot Area projects. We are working on the Plan-EA write-up and gathering resource information. We wanted to reach out to see if the NRCS is aware of any other related projects or studies within either of these two project areas that we should be aware of for incorporation into our planning and environmental consequences review for these projects.

We are also reaching out to the communities and doing some research into this, but if the NRCS is aware of any projects or related studies for either project watershed study area please let us know.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST



Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, January 4, 2024 6:39 AM
To: Natalie Bue
Cc: Lee Forbes; Shanna Kistler
Subject: FW: [External Email]FW: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies
Attachments: camp bayou wplan.pdf; fleshman's bayou wplan.pdf

You don't often get email from karen.mccurdy@craftontull.com. Learn why this is important

External sender - Think before you click

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tu

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
Rogers, AR 72756
www.craftontull.com

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From: Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Sent: Thursday, January 4, 2024 8:22 AM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>; Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>
Subject: RE: [External Email]FW: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

Karen,

I can't remember if I shared "Old Completed" Watershed Plans in or near the vicinity of these new projects or not. I am going to send you some of the old watershed plans done in the 50's and 60's. They may or may not be helpful.

The 2 plans attached to this e-mail are in or near the **Wilmot** area.

I will send an additional 2 e-mails with the old plans completed in or near the **Eudora** area.

Sincerely,

Bill

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, January 4, 2024 7:56 AM
To: Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>; Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Subject: [External Email]FW: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

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Good morning,

Please see request below from Headway. Do you know of anything other than the PIFRs that would be useful?

Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

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From: Natalie Bue <Nbue@headwayenviro.com>
Sent: Wednesday, January 3, 2024 12:17 PM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>
Cc: Lee Forbes <lforbes@headwayenviro.com>; Shanna Kistler <skistler@headwayenviro.com>
Subject: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

Hi Karen,

I am reaching out regarding the NRCS Plan-EA Projects for the City of Eudora Area and City of Wilmot Area projects. We are working on the Plan-EA write-up and gathering resource information. We wanted to reach out to see if the NRCS is aware of any other related projects or studies within either of these two project areas that we should be aware of for incorporation into our planning and environmental consequences review for these projects.

We are also reaching out to the communities and doing some research into this, but if the NRCS is aware of any projects or related studies for either project watershed study area please let us know.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

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From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, January 4, 2024 6:40 AM
To: Natalie Bue
Cc: Lee Forbes; Shanna Kistler
Subject: FW: [External] RE: NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies - Old Plans for Eudora Area 1 of 2 e-mails
Attachments: ark-la wplan.pdf; Caney bayou wplan.pdf

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From: Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Sent: Thursday, January 4, 2024 8:25 AM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>; Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>
Subject: [External] RE: NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies -Old Plans for Eudora Area 1 of 2 e-mails

This is the first of 2 e-mails. I wasn't sure how large of a file I could send you.

-Bill

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, January 4, 2024 7:56 AM
To: Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>; Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Subject: [External Email]FW: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

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Thanks,
Karen

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From: Natalie Bue <Nbue@headwayenviro.com>
Sent: Wednesday, January 3, 2024 12:17 PM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>
Cc: Lee Forbes <lforbes@headwayenviro.com>; Shanna Kistler <skistler@headwayenviro.com>
Subject: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

Hi Karen,

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Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347

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From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, January 4, 2024 6:40 AM
To: Natalie Bue
Cc: Lee Forbes; Shanna Kistler
Subject: FW: [External] RE: NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies - Old Plans for Eudora Area 2 of 2 e-mails
Attachments: chicot splan 1 1969.pdf; chicot wplan.pdf; crooked bayou wplan.pdf

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From: Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Sent: Thursday, January 4, 2024 8:27 AM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>; Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>
Subject: [External] RE: NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies -Old Plans for Eudora Area 2 of 2 e-mails

The Original Chicot Plan has a Supplemental Plan attached also.

-Bill

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, January 4, 2024 7:56 AM
To: Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>; Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>
Subject: [External Email]FW: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

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Thanks,
Karen

Karen McCurdy, P.E., CFM
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From: Natalie Bue <Nbue@headwayenviro.com>
Sent: Wednesday, January 3, 2024 12:17 PM
To: Karen McCurdy <Karen.McCurdy@craftontull.com>
Cc: Lee Forbes <lforbes@headwayenviro.com>; Shanna Kistler <skistler@headwayenviro.com>
Subject: [External] NRCS ABMA Eudora and Wilmot Watershed Projects Related Studies

Hi Karen,

I am reaching out regarding the NRCS Plan-EA Projects for the City of Eudora Area and City of Wilmot Area projects. We are working on the Plan-EA write-up and gathering resource information. We wanted to reach out to see if the NRCS is aware of any other related projects or studies within either of these two project areas that we should be aware of for incorporation into our planning and environmental consequences review for these projects.

We are also reaching out to the communities and doing some research into this, but if the NRCS is aware of any projects or related studies for either project watershed study area please let us know.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347

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From: Natalie Bue
Sent: Thursday, January 11, 2024 7:39 AM
To: ashleycountyjudge@att.net
Cc: Shanna Kistler; Lee Forbes
Subject: RE: NRCS ABMA Wilmot Watershed Projects Related Studies
Attachments: Wilmot Watershed Map - Alt.pdf

Hello,

I am reaching out to follow up on the below email regarding the NRCS Plan-Environmental Assessment for the City of Wilmot Area Project, sponsored by the ABMA and City of Wilmot. We are reaching out to see if your office is aware of any other related projects or studies within the project watershed area that we should be aware of for incorporation into our planning and environmental consequences review for the project.

Thank you in advance,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Natalie Bue
Sent: Wednesday, January 3, 2024 2:36 PM
To: ashleycountyjudge@att.net
Cc: Shanna Kistler <skistler@headwayenviro.com>; Lee Forbes <lforbes@headwayenviro.com>
Subject: NRCS ABMA Wilmot Watershed Projects Related Studies

Ashley County Judge Jim Hudson,

I am reaching out regarding the NRCS Plan-Environmental Assessment Project for the City of Wilmot Area project, sponsored by the ABMA and City of Wilmot. I have included the project map to this email as a reminder of the project boundaries for the project.

We are working on the Plan-EA write-up and gathering resource information. We wanted to reach out to see if your office is aware of any other related projects or studies within the project watershed area that we should be aware of for incorporation into our planning and environmental consequences review for the project.

Thank you for your assistance,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Natalie Bue
Sent: Thursday, May 23, 2024 8:24 AM
To: ashleycountyjudge@att.net
Cc: Lee Forbes; Shanna Kistler
Subject: RE: Ashley County FEMA Hazard Mitigation Plan

Hello,

I am writing to follow up on the below email. Our team is assisting with the development the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) funded Arkansas Black Majors Association (ABMA) City of Wilmot Area Watershed Improvement Project Plan-Environmental Assessment (Plan-EA).

Is your office able to share any information about the status of the development of the FEMA County Hazard Mitigation plan or are you able to share any information from the plan, particularly relating to flooding hazards in the county, that might be relevant for the Plan-EA development for our project?

Thank you for your assistance.

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Natalie Bue
Sent: Thursday, May 9, 2024 9:12 AM
To: ashleycountyjudge@att.net
Cc: Lee Forbes <lforbes@headwayenviro.com>; Shanna Kistler <skistler@headwayenviro.com>
Subject: Ashley County FEMA Hazard Mitigation Plan

Ashley County Judge Jim Hudson,

I am writing on behalf of the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) funded Arkansas Black Majors Association (ABMA) City of Wilmot Area Watershed Improvement Project. Our team is helping to prepare the Watershed Plan-Environmental Assessment (Plan-EA) for this project.

Per the FEMA Hazard Mitigation Plan Status webmap, it appears that Ashley County is in progress of developing a County Hazard Mitigation plan. Would your office be able to share any information about the status of this plan or are you able to share any information from the plan, particularly relating to flooding hazards in the county that might be relevant for the Plan-EA development for our project?

Thank you for your assistance.

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST



Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Natalie Bue
Sent: Thursday, November 30, 2023 6:13 AM
To: IGSClearinghouse@dfa.arkansas.gov
Cc: Shanna Kistler; Lee Forbes
Subject: RE: Invitation to a scoping meeting for the City of Eudora Area and City of Wilmot Area Watershed Plans and Environmental Assessments

Hello,

I wanted to follow up again to see if there are any updates on your end for moving this project forward in the State Clearinghouse Project Notification & Review System or if you need any other information from our team to proceed.

The scoping period for both projects are coming to a close, and we are moving forward with project planning. We did notify several of the state agencies that may participate in the state clearinghouse of the scoping period and meetings separately during our invitations to participate in the scoping meetings. But if there are any other entities within the state clearinghouse that wish to comment or participate in one or both projects, please let us know as soon as possible.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Natalie Bue
Sent: Friday, November 10, 2023 11:01 AM
To: 'IGSClearinghouse@dfa.arkansas.gov' <IGSClearinghouse@dfa.arkansas.gov>
Cc: Shanna Kistler <skistler@headwayenviro.com>; Lee Forbes <lforbes@headwayenviro.com>
Subject: RE: Invitation to a scoping meeting for the City of Eudora Area and City of Wilmot Area Watershed Plans and Environmental Assessments

Hello,

I am writing to follow up on my previous email for project notification for two separate projects for the Arkansas Black Mayors Association (ABMA), one for City of Eudora Area and one for City of Wilmot Area.

We want to make sure all agencies that are interested to participate in the scoping process are notified. The public scoping meetings are coming up next week (November 14 and 16), and a project review meeting for agencies is scheduled for the following week (both on November 21).

If there is any other information you need from us to distribute this among applicable agencies or if you have any further questions about the projects, please let us know.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
www.headwayenviro.com

From: Natalie Bue
Sent: Thursday, October 26, 2023 1:08 PM
To: IGSClearinghouse@dfa.arkansas.gov
Cc: Shanna Kistler <skistler@headwayenviro.com>; Lee Forbes <lforbes@headwayenviro.com>
Subject: Invitation to a scoping meeting for the City of Eudora Area and City of Wilmot Area Watershed Plans and Environmental Assessments

Dear Mr. Rice,

I am writing regarding two separate projects for the Arkansas Black Mayors Association (ABMA), one for City of Eudora Area and one for City of Wilmot Area, that have received funding from the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) for development of a Watershed Plan and Environmental Assessment (Plan-EA). We are writing to invite any agencies interested in participating in project scoping and our upcoming public scoping meetings for both projects.

We have not used the Arkansas State Clearinghouse before, so we wanted to confirm what information we should provide. Please see the attached letters with further information about the two projects and the two separate public scoping meetings. If there is any other information you need from us to distribute this among applicable agencies or if you have any further questions about the projects, please let us know.

Thank you,

Natalie Bue
PROJECT MANAGER/ENVIRONMENTAL SCIENTIST

Nbue@headwayenviro.com
Mobile: (281)-786-7522
HOUSTON MAILING: PO Box 1282, Humble TX 77347
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A-3.
NHPA Section 106
SHPO and Tribal Consultations

PROGRAMMATIC AGREEMENT AMONG THE NATURAL RESOURCES CONSERVATION SERVICE ARKANSAS STATE OFFICE, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE ARKANSAS HISTORIC PRESERVATION PROGRAM, THE CHOCTAW NATION OF OKLAHOMA, AND THE QUAPAW NATION REGARDING PUBLIC LAW 83–566 WATERSHED PROTECTION AND FLOOD PREVENTION PROJECTS IN ARKANSAS

WHEREAS, NRCS Arkansas, as authorized by the Watershed Protection and Flood Prevention (WFPO) Act (Public Law 83-566, as amended; 16 U.S.C. 1001-1012), provides technical and financial assistance to states, local governments, and Tribal organizations to help plan and implement authorized watershed projects (Program); and

WHEREAS, under this Program, NRCS Arkansas provides financial assistance to a project sponsor and their representative to develop a watershed plan to identify and implement flood control and prevention measures (Projects) that may include the construction, rehabilitation, and/or maintenance of new and existing infrastructure to facilitate flood control and prevention efforts; and

WHEREAS, NRCS Arkansas has determined that the Projects under the Program constitute undertakings, as defined in 36 C.F.R. § 800.16(y), and therefore are subject to Section 106 of the National Historic Preservation Act of 1966, 54 U.S.C. § 306108 (formerly 16 U.S.C. § 470f, referred to hereafter as Section 106); and

WHEREAS, NRCS Arkansas regularly determines that due to the size and scope of the Projects, the identification and assessment of effects to historic properties that may be affected by these Projects cannot be fully determined prior to the approval of an undertaking; and

WHEREAS, NRCS Arkansas determined that the requirement to take into account the effects of WFPO Projects will be more effectively and efficiently fulfilled through the use of a Programmatic Agreement (PA) pursuant to 36 C.F.R. § 800.14(b)(2) that phases the identification and evaluation of historic properties and application of the criteria of adverse effect.

WHEREAS, NRCS Arkansas shall establish through this Agreement a systematic and efficient process for taking into account the potential for effects to historic properties from WFPO Projects where NRCS is providing technical and financial assistance; and

WHEREAS, NRCS Arkansas consulted with the Arkansas State Historic Preservation Office/Arkansas Historic Preservation Program (AHPP) pursuant to 36 C.F.R. § 800.14(b)(2)(i); and

WHEREAS, in accordance with the regulations of 36 CFR § 800.14(b)(2), NRCS Arkansas has notified and invited the Advisory Council on Historic Preservation (ACHP) to participate in the development of this PA, and the ACHP responded regarding their participation in their correspondence dated March 25, 2025; and

WHEREAS, pursuant to 800.14(b)(2)(i), NRCS Arkansas consulted with federally recognized Indian Tribes (Tribes) associated with Arkansas to consult on this Agreement and invited them to participate as Tribal Signatories to this Agreement, and NRCS Arkansas shall continue consultation with all consulting parties within their specified areas of concern throughout the duration of this PA. The federally recognized Tribes consulted for this PA are: the Absentee Shawn Tribe of Indians

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

WHEREAS, this Programmatic Agreement does not modify the NRCS' responsibilities to consult with Tribes on all undertakings that might affect historic properties of religious and cultural significance to them, regardless of where the undertaking is located, without prior agreement by the concerned Tribe, and recognizes that historic properties of religious and cultural significance to a Tribe may be located on ancestral homelands or on officially ceded lands near or far from current settlements; and

WHEREAS, the NRCS Arkansas recognizes that nothing in this Programmatic Agreement shall be construed to waive the sovereign rights of Tribes and their elected officials, directors, officers, employees, or agents; and

WHEREAS, the NRCS Arkansas also recognizes that information and knowledge provided by Tribes belongs to them and NRCS Arkansas shall keep sensitive information confidential to the full extent of the law; and

WHEREAS, when NRCS Arkansas conducts individual Section 106 reviews for undertakings under this Programmatic Agreement, it shall identify and invite other agencies, organizations and individuals to participate as consulting parties; and

NOW, THEREFORE, the NRCS Arkansas, the AHPP, the ACHP, The Choctaw Nation of Oklahoma, and Quapaw Nation agree that the WFPO Program in State of Arkansas shall be implemented in accordance with the following stipulations in order to take into account the effect of each undertaking on historic properties. Adherence to the provisions of this Agreement will satisfy the NRCS Arkansas's Section 106 responsibilities for this Program.

STIPULATIONS

NRCS Arkansas shall ensure that the following stipulations are carried out:

I. Applicability and Scope

a. This PA establishes the review process for WFPO Projects subject to Section 106 review within the State of Arkansas. This PA sets forth the basis for considering the effects of the NRCS Arkansas WFPO Projects on historic properties and establishes alternative procedures to implement Section 106 for the review of such projects by the NRCS Arkansas, AHPP, ACHP, and Tribal Signatories.

b. Execution of this PA does not replace any project-specific Section 106 agreements, the State-based Prototype PA, or other agreements with federally-recognized Tribes (Memoranda of Understanding).

c. All actions prescribed by this Agreement shall be carried out under the direct supervision of a person or persons in the NRCS Arkansas State Office who meets the Secretary of Interior's Professional Qualification Standards.

d. In the event that another federal agency who was not initially a party or subject to this PA receives an application for funding, license, and/or permit for an Undertaking as described in this PA, that agency may fulfill its Section 106 responsibilities by stating in writing it concurs with the terms of this PA and notifying NRCS Arkansas, AHPP, and the ACHP that it intends to do so. Such agreement shall be evidenced by executing and implementing the terms of this PA and filing the letter with ACHP.

e. When NRCS Arkansas is designated or has assumed lead Federal Agency for an undertaking, cooperating federal agencies may fulfill their obligations under Section 106 of NHPA according to 36 CFR 800.2(a)(2), provided that the federal agencies follow the requirements of this PA (Stipulation I.d).

II. General Provisions

a. The definitions set forth in 36 C.F.R. § 800.16 are incorporated herein by reference and apply throughout this Agreement.

   i. ***Participating Consulting Parties:*** Consulting parties who have provided comment on a request for review of determinations, and/or findings issued by the NRCS Arkansas.

   ii. ***Concurrence:*** When participating consulting parties are provided a request for review of determinations and/or findings issued by the NRCS Arkansas. No response within thirty (30) days shall be understood to indicate no objection with the determinations.

b. Unless stipulated otherwise, days refers to calendar days.

c. For all documents produced in compliance with this Agreement, the NRCS Arkansas shall provide documents for review via email to all consulting parties. Any written comments provided by consulting parties within thirty (30) days from the date of receipt shall be considered in the revision of the document or deliverable.

III. Roles and Responsibilities

NRCS Arkansas shall:

a. Consistent with the requirements of 36 CFR 800.2(a), NRCS Arkansas shall ensure that the terms of this Agreement are carried out for WFPO projects subject to Section 106 review.
b. NRCS Arkansas remains responsible for government-to-government consultation with federally-recognized Tribes as required under 36 CFR 800.3(f)(2) early in the planning process to identify cultural, confidentiality, or other concerns and to allow adequate time for consultation.
c. Determine whether a WFPO undertaking has the potential to affect historic properties on historic, ancestral and ceded lands of federally-recognized Tribes as described in 36 CFR 800.3(c).
d. Solicit public comment and involvement on the alternatives identified during the development of the watershed plan pursuant to 36 CFR 800.3(e).
e. Incorporate the results of AHPP and Tribal consultation and public comment on the alternatives identified during the development of the watershed plan, as outlined in Stipulation IV.
f. Notify the AHPP and federally-recognized Tribes and the public of the alternative selected by the watershed plan.
g. Through consultation with the AHPP, federally-recognized Tribes, and the public, develop and document the Area of Potential Effect (APE) of the selected alternative and the scope of identification efforts within it, as described by 36 CFR 800.4(a) and (b).
h. Identify and determine the eligibility of properties within the APE in consultation with AHPP and federally-recognized Tribes pursuant to 36 CFR 800.4.
i. Determine whether historic properties may be affected by the undertaking, as described by 36 CFR 800.5(a)(1).
j. In consultation with AHPP, ACHP—if their involvement is requested by a consultation partner—, and federally-recognized Tribes, resolve adverse effects to historic properties, as described by 36 CFR 800.5(a)(1).
k. NRCS Arkansas shall resolve disputes and objections pursuant to Stipulation VII.c of this Agreement.
l. NRCS Arkansas shall issue a Notice to Proceed upon the completion of the Section 106 process.

All Consulting Parties shall:

a. Ensure that shared data, including data concerning the precise location and nature of archaeological historic properties and properties of religious and cultural significance, are protected from public disclosure to the greatest extent permitted by law, including conformance to 36 CFR § 800.6(a)(5) and 36 CFR § 800.11(c); FOIA; E.O. 13007, and FR 61-104, dated May 24, 1996.
b. Provide NRCS Arkansas with a formal request in writing with their demonstrated interest to act as a Concurring Party. If NRCS Arkansas agrees to add this consulting party as a Concurring Party, they may do so without amendment to this PA.
    i. Written requests by individuals, organizations, and agencies to become Concurring Parties will be evaluated on a case-by-case basis by NRCS Arkansas and in consultation with AHPP

IV. Phase 1: Alternative Section 106 Process during Watershed Plan Development

Phase 1 of the WFPO process begins when a Sponsor, through their contracting firm, and the NRCS Arkansas begin developing a watershed plan through analyzing various alternatives. At the end of Phase I, NRCS Arkansas selects an alternative and the project moves to the next phase.

a. NRCS Arkansas shall initiate consultation with the AHPP, federally-recognized Tribes, and additional consulting parties—if any—once a project has been selected for watershed plan development.
   i. The proposed preliminary APEs for the WFPO Project include all potential footprints and viewsheds for the alternatives as well as a 15-meter (m) (50-foot (ft.)) buffer for each alternative.
   ii. Once developed, NRCS Arkansas shall submit maps of the preliminary APE to the AHPP and federally-recognized Tribes for review prior to completing cultural resources inventories. Upon receipt, AHPP and federally-recognized Tribes will have thirty (30) days to review and provide comments to the NRCS Arkansas. If comments are not received with twenty-five (25) days, NRCS Arkansas shall contact the consulting parties via their preferred method of contact—either by telephone call or electronic mail (email)—to seek their intent to comment (Appendix A). NRCS Arkansas shall take into account any comments provided by consulting parties in establishing the preliminary APEs for the alternatives.
   iii. As the Project progresses, design changes may be necessary. If any such changes modify the preliminary APE that has already been agreed to pursuant to Stipulation IV.a.ii, NRCS Arkansas shall submit a modified APE to consulting parties for review and comment as outlined above.
   iv. Some WFPO projects provide assistance to federal, state, local, and federally-recognized Tribal governments to rehabilitate and maintain existing structures utilized for flood prevention and protection. If these projects are determined to have little potential to cause an effect to historic properties, the NRCS Arkansas shall draft a letter with its findings and provide it to the consulting parties for comment and concurrence. Disputes will be resolved in accordance with Stipulation VII.c.

b. For the purposes of the watershed plan document, the Sponsor, through their contracting firm, shall conduct a Cultural Resources inventory of each identified alternative.
   i. This inventory shall consist of a records review of known historic properties, archaeological sites, and historical structures within the APE and archaeological and historical literature review and archival research.
   ii. Upon its completion, the Sponsor shall submit the review's findings to the NRCS Arkansas Cultural Resources staff for review.
   iii. Upon NRCS Arkansas Cultural Resources staff's approval, NRCS Arkansas shall provide the review and findings to AHPP and Tribal partners for consultation to include their concerns within the preliminary

APE. All partners shall have review timeframes in concert with Stipulation II.c.

1. NRCS shall consult with the Tribes on whether information provided on the findings may be sensitive and should be kept confidential. If a Tribe indicates that information provided may be sensitive, NRCS shall work with the Tribe to tailor its information request appropriately and initiate the process with the National Park Service to proactively protect such information from public release in accordance with 36 CFR 800.11(c).

iv. Summarized information from this review shall be included in the watershed plan to develop and select an alternative.

c. Upon the completion of Stipulation IV.b.iv, NRCS Arkansas will notify AHPP, the Tribes, and other consulting parties—if any—of the selected alternative and the known cultural resources within its footprint and move on to Phase 2 (Stipulation V).

V. Phase 2: Alternative Section 106 Process during Watershed Plan Design

Phase 2 begins upon the selection of an alternative for design. During this phase, NRCS Arkansas shall finalize the APE and establish the scope of Cultural Resources identification efforts for the WFPO project. After identification efforts are complete, a summary of findings shall be reviewed by NRCS Arkansas Cultural Resources staff before being sent to AHPP and Tribes for comment. Some of the steps outlined below may be combined for the sake of efficiency. Upon completion of the document's review and resolution of adverse effect and/or disputes—if any—the Section 106 process for the WFPO project will be complete.

a. **Proposing and finalizing the APE for the selected alternative.**

i. NRCS Arkansas shall identify all geographic areas that may be directly or indirectly affected by the selected alternative to establish a proposed finalized APE. The proposed, finalized APE for the selected alternative shall include all geographic areas that may be directly or indirectly affected by the construction of the WFPO project, such as the project's footprint, staging areas, and its viewshed.

ii. NRCS Arkansas shall perform a Viewshed Analysis, using a Geographic Information System viewshed analysis tool, to assess the potential visual effects of a Project on historic properties and the built environment within a determined radius. NRCS Arkansas shall determine the radius through consultation with the AHPP and federally-recognized Tribes and follow best practices. If any historic properties are located within that radius, NRCS shall consult with all consulting parties regarding potential adverse visual effects.

iii. NRCS Arkansas shall submit maps of the finalized APE and recommendations on level of effort needed to assess project effects to the AHPP and federally-recognized Tribes for review prior to completing the in-depth cultural resources survey. Upon receipt, consulting parties will have thirty (30) days to review and provide comments to NRCS Arkansas on the proposed finalized APE. If comments from consulting parties are not received by NRCS Arkansas within twenty-five (25) days of receipt by the consulting party, NRCS Arkansas shall contact the

consulting parties via their preferred method of contact—either by telephone call or email—to see their intent to comment.

iv. NRCS Arkansas shall take into account any comments on the proposed finalized APE and establish it based on comments received. If no objections or requests for review are received by the thirty-first (31st) day, NRCS Arkansas shall move to finalize the APE for the undertaking. NRCS Arkansas is responsible for distributing the finalized APE to all consulting parties. The scope and level of effort of the identification effort shall meet the reasonable and good faith regulatory standard, pursuant to 36 CFR 800.4(b)(1). Information pertaining to historic properties of religious and cultural significance and/or provided by federally-recognized Tribal consultation partners shall be kept from public disclosure to the greatest extent possible pursuant to Stipulation III.c.

b. **Identification and evaluation of historic properties within the finalized APE.**

i. In accordance with 36 CFR Part 800.4(a) and (b), NRCS Arkansas—with input from consulting parties and concurrence regarding the APE per Stipulation V.a—shall identify the appropriate scope and level of effort needed to identify historic properties, including those to which Tribes may attach traditional religious and cultural significance.

ii. Upon finalizing the APE for a WFPO project, NRCS Arkansas, or an approved, Sponsor-contracted cultural resources management firm, shall conduct an archaeological field investigation utilizing the guidelines set forth in Appendix B of the revised *A State Plane for the Conservation of Archaeological Resources in Arkansas* (Davis 1982 [revised 2010]).

c. **Reports for WFPO projects.**

i. All archaeological and architectural resources identified during surface and/or sub-surface surveys shall be recorded on the appropriate AHPP and Arkansas Archeological Survey (ARAS) site forms. The results of such field investigations shall be documented in stand-alone reports or in combined archaeological, architectural, and/or ethnographic technical reports that meet the standards set forth in Appendix B of the revised *A State Plan for the Conservation of Archeological Resources in Arkansas* (Davis 1982 [revised 2010]). All archaeological technical reports shall include a Shovel Test Log and Shovel Test Map that clearly depicts each labeled Shovel Test location, which shall be appended to the document.

ii. As archaeological and architectural survey efforts may be non-concurrent, based on project phase, access to land, and/or availability of funding, multiple technical archaeological and architectural survey reports may be produced for each WFPO project. If cultural resources can be evaluated for National Register eligibility based on survey-level identification efforts alone, the resulting archaeological and architectural survey report(s) may also include recommendations for NRHP eligibility of identified resources. NRCS Arkansas shall review such reports to make determinations of eligibility and findings of effect.

d. **Assessments of effects to historic properties during WFPO Projects**

i. NRCS Arkansas shall provide completed technical reports to consulting parties for review. The review period shall be thirty (30) days from the date of receipt by the consulting party. If comments from consulting parties are not received by NRCS Arkansas within twenty-five (25) days of receipt by the consulting party, NRCS Arkansas shall contact them via their preferred method of contact—either by telephone call or email—to see if they intend to comment. If no objections or requests for an extension of the review period are received by the thirty-first (31st) day, NRCS Arkansas shall move to the next step in the process.
    1. Information pertaining to historic properties of religious and cultural significance and/or provided by federally-recognized Tribal consultation partners shall be kept from public disclosure to the greatest extent possible pursuant to Stipulation III.c.

ii. In accordance with 36 CFR 800.5, NRCS Arkansas shall apply the criteria of adverse effects within the area of potential effect in consultation with all consulting parties. Disputes resulting from disagreements with determinations and findings made by NRCS Arkansas shall be resolved following Stipulation VII.c – Dispute Resolution. Resolution of adverse effects to historic properties during WFPO projects shall occur in accordance with the treatment plan (Stipulation III.d.3), which shall be developed in consultation and concurrence with all participating consulting parties. While NRCS Arkansas will seek to avoid adverse effects to identified or potential historic properties, consultation proposing mitigation will be conducted to determine how to proceed. Mitigation efforts can include avoidance of identified or potential historic properties. Disputes resulting from disagreements with the proposed mitigation and treatment plan by NRCS Arkansas shall be resolved following Stipulation VII.c – Dispute Resolution.

iii. Before construction begins for a WFPO project, NRCS, in consultation and concurrence with the AHPP and any federally-recognized Tribe(s) that attaches religious and cultural significance to identified historic properties, shall prepare a Treatment Plan designed to resolve adverse effects on eligible Historic Properties within the APE. NRCS Arkansas shall consider any views concerning such effects which have been provided by consulting parties and federally-recognized Tribes. This process shall be memorialized with formal consultation and/or Memoranda of Agreements, as needed, and will be appended to this document in Appendix B without requiring an amendment. Copies of the updated Appendix will be provided to the AHPP, participating federally-recognized Tribes and consulting parties, Tribal Signatories and the ACHP.
    1. All information pertaining to archaeological historic properties of significance to federally-recognized Tribes shall be kept from public disclosure to the greatest extent possible pursuant Stipulation III.c.

VI. Post-Section 106 Review

This section details the process through which Section 106 review can occur for post-review modifications made during construction. It also describes the process by which the NRCS Arkansas shall handle unanticipated discoveries and human remains.

a. **Continuing consultation on effect based on project scope changes.**
   i. This phase will include archaeological and architectural surveys, as needed, of any modification and/or additions to a WFPO Project that are outside of its currently defined APE(s)—including any changes in construction rights-of-way, access roads, borrow pits, staging areas, and/or other ancillary areas. Newly proposed APE(s) shall be assessed in accordance with Stipulation V.a. No ground disturbance shall occur within the newly proposed APE(s) until the Section 106 process has been completed and Notice to Proceed has been issued in accordance with Stipulation III.n. NRCS Arkansas shall determine where construction may continue while the required Section 106 work is being completed on the newly proposed APE(s).

b. **Post-Review Discoveries**
   i. Prior to a WFPO project's implementation, NRCS Arkansas shall provide the post-review discovery process and the contact information of all individuals named in the process to the project Sponsor and their representative, if any. NRCS Arkansas shall provide updated contact information as needed, minimally once each year. The project Sponsor and their representative, if any, shall provide this information to all contractors and ensure that the contractors understand and comply with the post-review discovery process. A copy of the post-review discovery process and the contact information of the specified individuals is included in Appendix A.
   ii. When a post-review discovery of cultural resources of any type occurs, but construction in that project segment has yet to begin, NRCS Arkansas shall notify all consulting parties within forty-eight (48) hours of the discovery and follow the procedures of the Agreement beginning at Stipulation VI. All information about historic properties of significance to federally-recognized Tribes shall be kept from public disclosure to the greatest extent possible in accordance with Stipulation III.c.
   iii. When a post-review discovery of cultural artifacts/features/structures—that does not or is unlikely to include human remains and/or associated funerary objects—occurs, the contractor shall immediately cease all work within a fifty (50) m buffer (165 ft.) and notify the NRCS Arkansas State Conservationist's Office, Assistant State Conservationist for Water Resources, NRCS Cultural Resources Specialist/Assistant Cultural Resources Specialist (CRS/ACRS), supervisory NRCS personnel for the area, and the project Sponsor and their representative, if any. Any post-review discovery that includes or is likely to include human remains and/or associated funerary objects shall follow Stipulation VII.d
      1. All work shall halt within the fifty (50) m buffer area until the NRCS Arkansas CRS/ACRS inspects the discovery within forty-eight (48)

hours, if weather permits.

2. NRCS Arkansas CRS/ACRS shall notify all consulting parties no later than forty-eight (48) hours of the post review discovery of cultural artifacts/features/structures. In consultation with all consulting parties, the NRCS Arkansas Assistant State Conservationist for Water Resources, the project sponsor and its representative, if any, and the contractor, the CRS/ACRS shall establish a protective buffer zone (at least 50 m) surrounding the discovery. This action may require inspection by consulting Tribal cultural resources experts in addition to the CRS/ACRS.
    a. Information pertaining to historic properties of religious and cultural significance and/or provided by Tribal consultation partners shall be kept from public disclosure to the greatest extent possible pursuant to Stipulation III.c.
3. NRCS Arkansas employees, contractors, and applicants or their agents, representatives, and employees shall not contact or interact with members of the print, broadcast, digital, or other media or post, upload, or otherwise communicate via digital or social media matters or details concerning post-review discoveries absent prior consultation and concurrence with the affiliated Tribe(s) with the historic property and AHPP. Access to these areas by unapproved visitors and media will not be permitted. Any inquiries related to the human remains will follow the process in Stipulation VI.b.iv. Any communications shall occur only under the direction of the NRCS Public Affairs Officer, as appropriate, and the State Conservationist.
4. Security shall be established to protect the resources/historic properties, workers, and private property. Local law enforcement authorities will be notified in accordance with applicable State law and NRCS policy in order to protect the resources. Construction and/or work may resume outside the fifty (50) m (165 ft.) buffer only when the State Conservationist, in consultation and concurrence with participating consulting parties, determines it is appropriate and safe for the resources and workers.
5. The NRCS Arkansas CRS/ACRS, in consultation and concurrence with participating consulting parties, shall assess the property for National Register eligibility, as well as feasible and proposed actions to resolve any adverse effects to historic properties, within 14 days unless a reasonable extension is requested. The eligibility determination may require the assessment and advice of all consulting parties as well as technical experts (such as historic landscape architects) not employed by NRCS. Disputes resulting from disagreements with determinations and findings made by NRCS Arkansas will be resolved following Stipulation VII.c – Dispute Resolution.
6. Consulting parties shall respond within forty-eight (48) hours

from receipt of the notification with any comments on the discovery and proposed actions.

7. Only after the process in Stipulation VI.b.1–6 has been carried out will NRCS Arkansas take appropriate actions to resolve any adverse effects. NRCS Arkansas shall report to all consulting parties of the actions once completed.

iv. When a post-review discovery of human remains and/or funerary objects occurs, all work shall cease within a 100 m buffer (330 ft.) and local law enforcement shall be immediately notified by the on-site supervisor. Once law enforcement has determined the discovery is not the site of an active homicide, the NRCS Arkansas shall follow all applicable state burial laws and ordinances (Arkansas' Act 753 of 1991, as amended, and Act 1533 of 1999), and related human rights and health statutes, where appropriate. NRCS Arkansas shall also refer to the ACHP's Policy Statement regarding *Treatment of Burial Sites, Human Remains and Funerary Objects* and the ACHP's Section 106 Archaeology Guidance and the USDA and NRCS policy on treatment of human remains and consultation.

1. NRCS Arkansas shall notify the AHPP, Tribal consulting parties, and the ACHP no later than forty-eight (48) hours of the post-review discovery of human remains and/or funerary objects.
    a. Only natural materials will be used in the process of implementing protection for human remains.
    b. Other than for crime scene investigation, no excavation, examination, photographs, or analysis of human remains will be conducted by the NRCS Arkansas or any contract professional without first consulting with the AHPP and federally-recognized Tribes.
2. In consultation with the federally-recognized Tribes, NRCS Arkansas shall determine the appropriate treatment for the burial(s) and associated object(s). The AHPP will assist with the consultation process, per Section 7 of Act 753.
    a. Upon request, the federally-recognized Tribes shall be able to visit the site with AHPP and NRCS Arkansas-designated personnel.
3. The preference of the federally-recognized Tribes that, wherever possible, burials are left in place and any further project activities avoid the burial with an appropriate buffer area, shall be determined by NRCS Arkansas in consultation with the Tribes on a case-by-case basis.
4. If, in consultation, excavation is deemed appropriate, NRCS Arkansas shall engage with the AHPP to complete the burial excavation permit process. Concurrently, NRCS Arkansas will seek written consent from the affiliated federally-recognized Tribe(s) to perform burial excavation. Disputes will be resolved following Stipulation VII.c – Dispute Resolution.
5. As part of the permitting process, the AHPP shall consult with federally-recognized Tribes regarding excavation procedures,

handling requirements, and final disposition following the procedures of Sections 8 and 9 of Act 753.

a. The project sponsor and their representative, if any, shall retain the services of a qualified bioarchaeologist approved by the NRCS Arkansas, prior to beginning any excavation.

6. NRCS Arkansas shall provide the federally-recognized Tribes and AHPP with copies of all documentation concerning the human remains, including the final report required to be submitted to the AHPP and the ARAS.
7. Ground-disturbing project activities shall not continue inside 100 m (330 ft.) buffer zone until the appropriate treatment is agreed upon by the federally-recognized Tribes and AHPP and a burial permit is obtained from the AHPP, the treatment measures completed, and clearance is provided by NRCS Arkansas as a Notice to Proceed (Stipulation III.n).
8. NRCS Arkansas employees, contractors, and applicants or their agents, representatives, and employees shall not contact or interact with members of the print, broadcast, digital, or other media or post, upload, or otherwise communicate via digital or social media matters or details concerning human graves or locations containing, or that are likely to contain, human graves and/or remains absent prior coordination and in consultation and concurrence with the participating federally-recognized Tribes and AHPP. Access to these areas by unapproved visitors and media shall not be permitted.

VII. Emergency and Disaster Management Procedures (Responses to Emergencies).

a. NRCS shall notify the SHPO and other consultation partners immediately or within 48 hours of the emergency determination, following the NRCS' Emergency Watershed Program (EWP) final rule (see Section 216, P.L. 81-516 Final Rule, 7 CFR Part 624 (April 2005).
b. The NRCS State office shall prepare procedures for exigency (following the rules for NRCS' EWP regarding immediate threat to life and property requiring, response within five (5) days) in consultation with the SHPO.
c. If the NRCS Arkansas State office has not developed specific procedures for responding to exigencies, the NRCS shall follow the recently approved guidelines for Unified Federal Review issued by the Department of Homeland Security, Federal Emergency Management Service (DHS, FEMA), the Council on Environmental Quality (CEQ), and the ACHP in July 2014, or the procedures in 36 CFR Part 800.12 (b).

VIII. Administrative Stipulations

a. ***Duration.*** This Agreement will be in effect for 10 years from the date of execution unless amended or terminated pursuant to Stipulation VII.f. Prior to such time NRCS Arkansas may consult with the ACHP, AHPP, and Tribal Signatories to reconsider the terms of the Agreement, such as extending its

duration, and amending it in accordance with Stipulation VII.d below.

b. ***Monitoring and Reporting of WFPO Projects.*** Each year following the execution of this Agreement until it expires, or is terminated, NRCS Arkansas shall submit to all parties to this Agreement a letter summarizing the work undertaken on WFPO projects pursuant to its terms during each Fiscal Year (FY) by January 15 of the following calendar year; e.g., the FY2025 WFPO annual report is due to partners on January 15, 2026. Such letter shall include a list and summary of WFPO Projects utilizing this agreement, the status of those projects, any problems encountered, and any disputes and objections received in NRCS Arkansas's efforts to carry out the terms of this PA. Communications for this letter shall be submitted in accordance with Stipulation II.c.

c. ***Dispute Resolution.*** Should any Signatory, Tribal Signatory, or concurring party to this PA object at any time to any actions proposed or the manner in which the terms of this Agreement are implemented, NRCS Arkansas shall consult with the objecting party(ies) to resolve the objection. If NRCS Arkansas determines that such objection(s) cannot be resolved, NRCS Arkansas shall:
    i. Forward all documentation relevant to the dispute, including NRCS Arkansas's proposed resolution, to the ACHP in accordance with 36 CFR 800.2(b)(2) and 800.9. Upon receipt of adequate documentation, the ACHP shall review and advise NRCS Arkansas on the resolution of the objection within thirty (30) days. Any comment provided by the ACHP and all comments from the consultation parties will be taken into account by NRCS Arkansas in reaching a final decision regarding the dispute. Prior to reaching a final decision on the dispute, NRCS Arkansas shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and the consulting parties; a copy of this written response shall be provided to them. NRCS Arkansas shall then proceed according to its final decision.
    ii. If the ACHP does not provide its advice regarding the dispute within thirty (30) days, NRCS Arkansas may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, NRCS Arkansas shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories, Tribal Signatories, and concurring parties to the Agreement and provide them and the ACHP with a copy of such written response.
    iii. NRCS Arkansas's responsibility for carrying out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.

d. ***Amendments.*** The NRCS Arkansas, ACHP, AHPP, or Tribal Signatories to this Agreement may request, in writing, to the other Signatories and Tribal Signatories that it be amended, whereupon the Signatories, Tribal Signatories, and concurring parties will consult for a period of no more than thirty (30) days to consider such amendment. The amendment shall be effective on the date a copy signed by all the Signatories is filed with the ACHP.
    i. Appendix B may be modified without requiring an amendment to the

Agreement. Copies of the modified Appendix B will be provided to the Signatories and Tribal Signatories.

e. ***Withdrawal.*** If any Tribal Signatory wishes to withdraw from the Agreement, they may do so upon written notice to the NRCS Arkansas, ACHP, AHPP, and other Tribal Signatories. Upon withdrawal, the NRCS Arkansas will comply with Section 106 in regard to consultation with the Tribal Signatory in accordance with 36 CFR 800.3 through 800.7. Withdrawal does not constitute termination of the Agreement.
    i. ***Termination.*** If any Signatory to this Agreement determines that its provisions will not or cannot be carried out, that party shall immediately consult with the other Signatories to attempt to develop an amendment per Stipulation VII.d. If within thirty (30) days (or another time period agreed to by all Signatories) an amendment cannot be reached, any Signatory may terminate the Agreement upon written notification to the other Signatories.
    ii. Once the PA is terminated, NRCS Arkansas must review its undertakings in accordance with 36 CFR §§ 800.3 through 7

IX. Anti-Deficiency Act

a. The NRCS Arkansas' obligations under this Programmatic Agreement are subject to the availability of appropriated funds, and the stipulations of this Agreement are subject to the provisions of the Anti- Deficiency Act. The NRCS Arkansas shall make reasonable and good faith efforts to secure the necessary funds to implement this Agreement in its entirety. If compliance with the Anti-Deficiency Act alters or impairs the NRCS Arkansas' ability to implement the stipulations of this agreement, the NRCS Arkansas' shall consult in accordance with the amendment, withdrawal, and termination procedures found at Stipulation VIII of this agreement.

X. Execution in counterpart

a. The agreement may be executed in counterpart, following formal written requests and appropriate discussion and approval by the NRCS Federal Preservation Officer, NRCS Arkansas State Conservationist, AHPP, ACHP, and federally-recognized Tribes, as appropriate.

EXECUTION of this Agreement among NRCS Arkansas, AHPP, the ACHP, The Choctaw Nation of Oklahoma, and Quapaw Nation and implementation of its terms, evidence that NRCS Arkansas has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

Signatures:

In witness whereof, the Signatories to this Agreement through their duly authorized representatives have executed this Agreement on the days and dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this Agreement as set forth herein.

**PROGRAMMATIC AGREEMENT AMONG THE
NATURAL RESOURCES CONSERVATION SERVICE ARKANSAS STATE OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE ARKANSAS HISTORIC PRESERVATION PROGRAM,
THE CHOCTAW NATION OF OKLAHOMA,
AND THE QUAPAW NATION
REGARDING PUBLIC LAW 83–566 WATERSHED PROTECTION AND
FLOOD PREVENTION PROJECTS IN ARKANSAS**

SIGNATORY

NRCS Arkansas

By: _____ Digitally signed by AMANDA MATHIS
Date: 2025.07.29 07:50:56 -05'00'

Amanda J. Mathis
State Conservationist

Date: July 29, 2025

**PROGRAMMATIC AGREEMENT AMONG THE
NATURAL RESOURCES CONSERVATION SERVICE ARKANSAS STATE OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE ARKANSAS HISTORIC PRESERVATION PROGRAM,
THE CHOCTAW NATION OF OKLAHOMA,
AND THE QUAPAW NATION
REGARDING PUBLIC LAW 83–566 WATERSHED PROTECTION AND
FLOOD PREVENTION PROJECTS IN ARKANSAS**

SIGNATORY

Arkansas State Historic Preservation Office (AHPP)

By: Scott Kaufman

Scott Kaufman
State Historic Preservation Officer

Date: 6-9-25

**PROGRAMMATIC AGREEMENT AMONG THE
NATURAL RESOURCES CONSERVATION SERVICE ARKANSAS STATE OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE ARKANSAS HISTORIC PRESERVATION PROGRAM,
THE CHOCTAW NATION OF OKLAHOMA,
AND THE QUAPAW NATION
REGARDING PUBLIC LAW 83–566 WATERSHED PROTECTION AND
FLOOD PREVENTION PROJECTS IN ARKANSAS**

SIGNATORY

Advisory Council on Historic Properties

By: _____

Reid J. Nelson
Executive Director, ACHP

Date: August 4, 2025

**PROGRAMMATIC AGREEMENT AMONG THE
NATURAL RESOURCES CONSERVATION SERVICE ARKANSAS STATE OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE ARKANSAS HISTORIC PRESERVATION PROGRAM,
THE CHOCTAW NATION OF OKLAHOMA,
AND THE QUAPAW NATION
REGARDING PUBLIC LAW 83-566 WATERSHED PROTECTION AND
FLOOD PREVENTION PROJECTS IN ARKANSAS**

TRIBAL SIGNATORY

The Choctaw Nation of Oklahoma

By: _____
Gary Batton
Chief

Date: _____

"Nothing contained in this Agreement shall be construed to waive the sovereign rights of the Choctaw Nation of Oklahoma, its elected officials, directors, officers, employees, or agents."

**PROGRAMMATIC AGREEMENT AMONG THE
NATURAL RESOURCES CONSERVATION SERVICE ARKANSAS STATE OFFICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE ARKANSAS HISTORIC PRESERVATION PROGRAM,
THE CHOCTAW NATION OF OKLAHOMA,
AND THE QUAPAW NATION
REGARDING PUBLIC LAW 83-566 WATERSHED PROTECTION AND
FLOOD PREVENTION PROJECTS IN ARKANSAS**

TRIBAL SIGNATORY

Quapaw Nation

By: Wena Supernaw
Wena Supernaw
Chair

Date: 12/21/25

August 4, 2025

Amanda J. Mathis
State Conservationist
Arkansas State Office
Natural Resources Conservation Service
700 W Capitol Ave Ste 3416
Little Rock, AR
72201-3215

Ref: *Programmatic Agreement for Administering Natural Resources Conservation Service Watershed Protection and Flood Prevention Program Undertakings*
State of Arkansas
ACHP Project Number: 022187

Dear Ms. Mathis:

Enclosed is your copy of the fully executed Section 106 programmatic agreement (Agreement) for the referenced program of undertakings. By carrying out the terms of the Agreement, Natural Resources Conservation Service (NRCS) will fulfill its responsibilities under Section 106 of the National Historic Preservation Act and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800), for this program. Please ensure all consulting parties are provided a copy of the executed Agreement in accordance with 36 CFR § 800.14(b)(2)(iv).

If we may be of further assistance as the Agreement is implemented, please contact Ms. Alexis Clark at (202) 517-0208 or by e-mail at aclark@achp.gov and reference the ACHP Project Number above.

Sincerely,

for
Jaime Loichinger
Director
Office of Federal Agency Programs

Enclosure

APPENDIX A:

Contact Information Table/Form

To be updated through the undertaking, as needed

APPENDIX B:

Memoranda of Agreements associated with Mitigating and/or Treating Possible Historic Properties

To be updated through the undertaking, as needed

October 19, 2023

Mr. Bobby Komardley, Chairman and Durell Cooper, Chairman
Apache Tribe of Oklahoma
P.O. Box 1330
Anadarko, Oklahoma 73005

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Mr. Komardley and Mr. Cooper:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

To satisfy the public involvement and consultation requirements for Section 106 of the National Historic Preservation Act (NHPA), USDA-NRCS is interested in learning whether the project has the potential to impact any significant archaeological, religious or cultural sites so that USDA-NRCS can factor that into its identification and evaluation of feasible alternatives during the NEPA documentation process.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and surrounding small communities in Ashley County, Arkansas, which lie within one 12-digit and one 10-digit HUC watersheds. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm (central standard time), November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot, AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

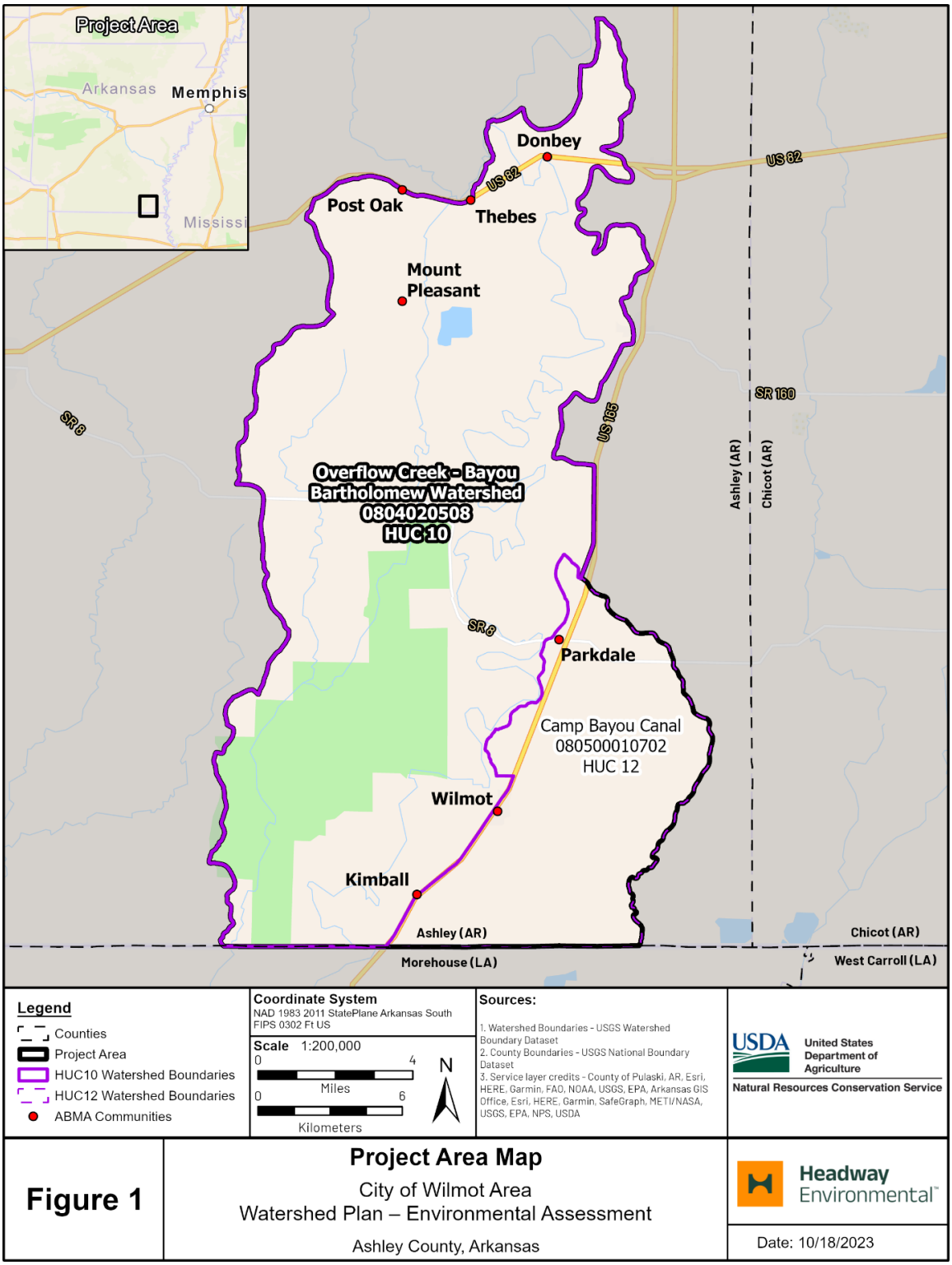
Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Scott Smallwood of my staff at Christopher.Smallwood@usda.gov or via phone at 501-237-3142.

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Location Map



Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

Helping People Help the Land

An Equal Opportunity Provider and Employer

Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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Wilmot, Arkansas

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Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.

October 19, 2023

Dr. Ian Thompson, Tribal Historic Preservation Officer & NAGPRA Program Coordinator
Madison Currie, NHPA Section 106 Review Coordinator
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74702-1210

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Dr. Thompson and Ms. Currie:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

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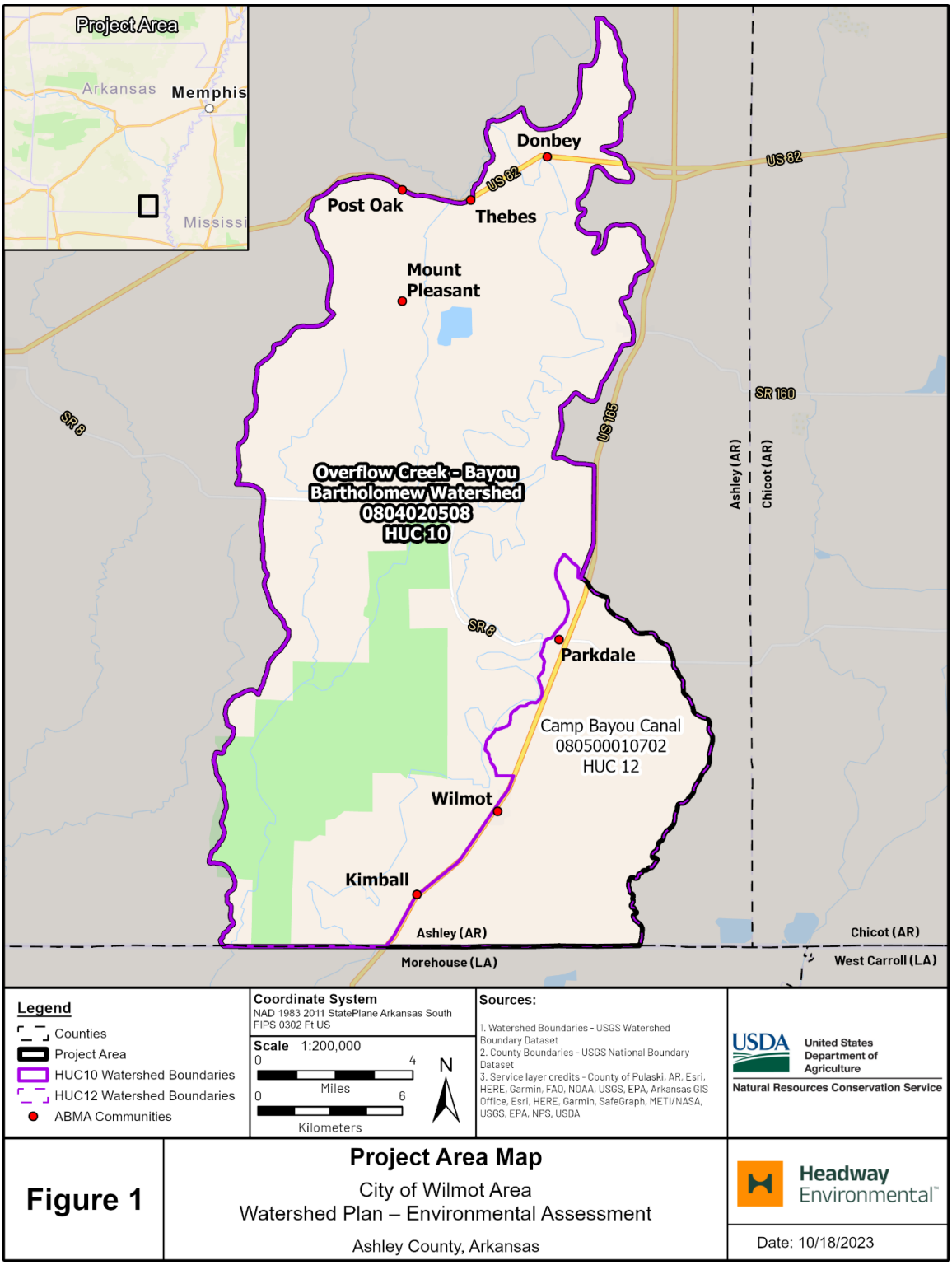
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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Location Map



Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

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Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Dr. Linda Langley, Tribal Historic Preservation Officer
Kassie Dawsey, Section 106 Coordinator
Coushatta Tribe of Louisiana
P.O. Box 10
Elton, LA 70532

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Dr. Langley and Ms. Dawsey:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

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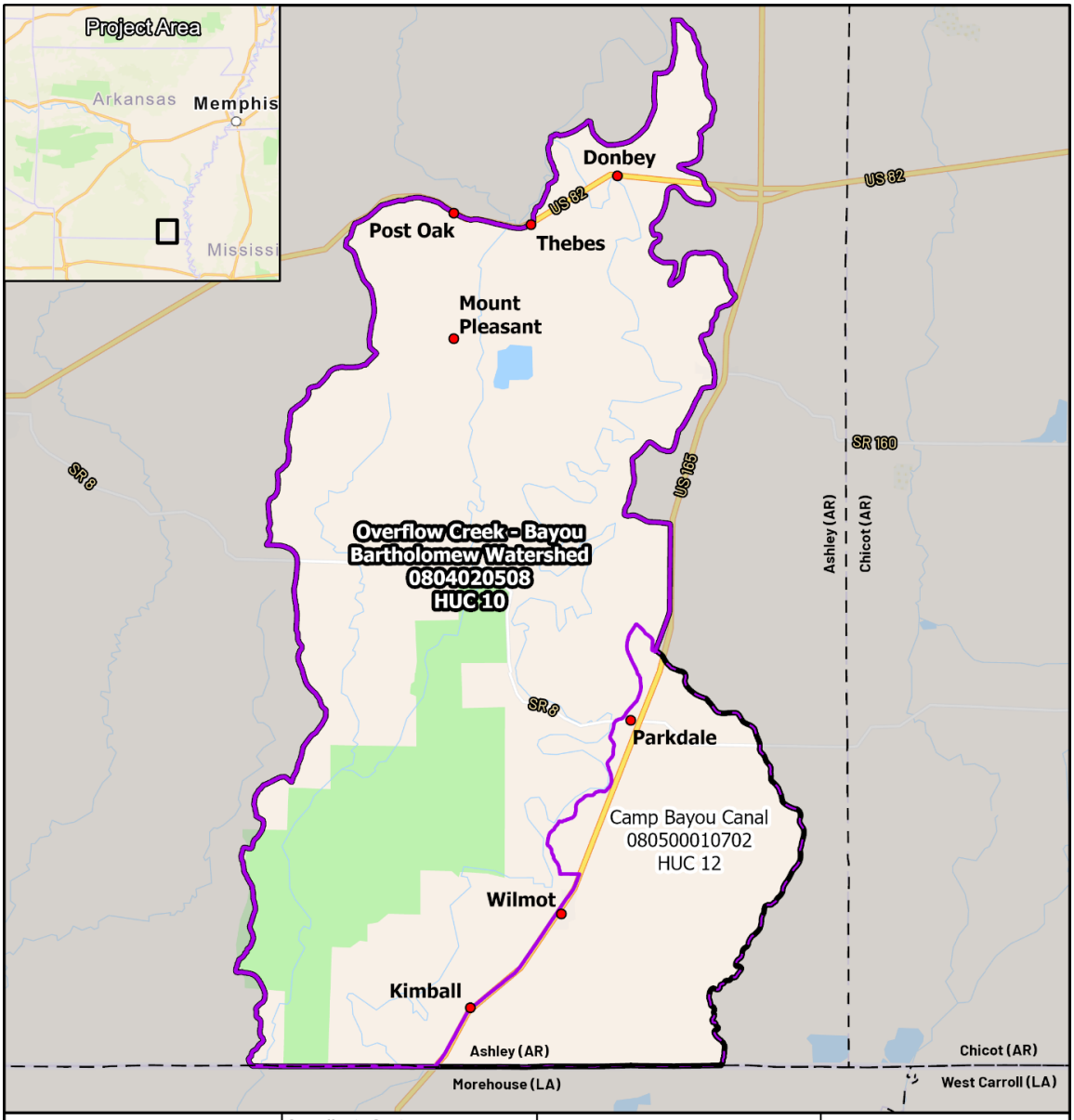


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

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Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Mr. Kenneth H. Carleton, Tribal Historic Preservation Officer/Archeologist
Mississippi Band of Choctaw Indians
P.O. Box 6010
Choctaw, MS 39350

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Mr. Carleton:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

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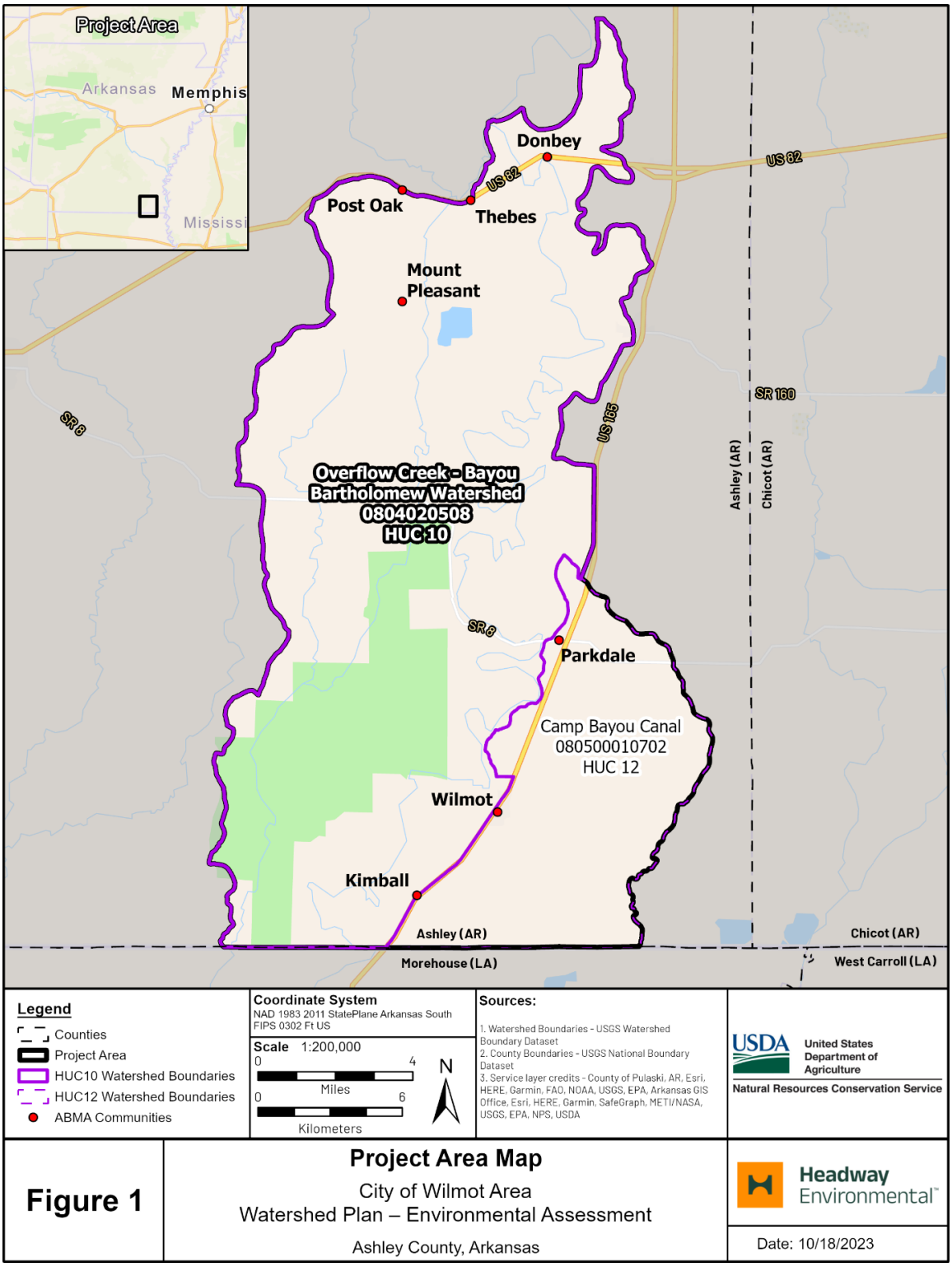
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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Location Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

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October 19, 2023

Mr. Everett Bandy, Tribal Historic Preservation Officer
Quapaw Nation
P.O. Box 765
Quapaw, OK 74363

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Mr. Bandy:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

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Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
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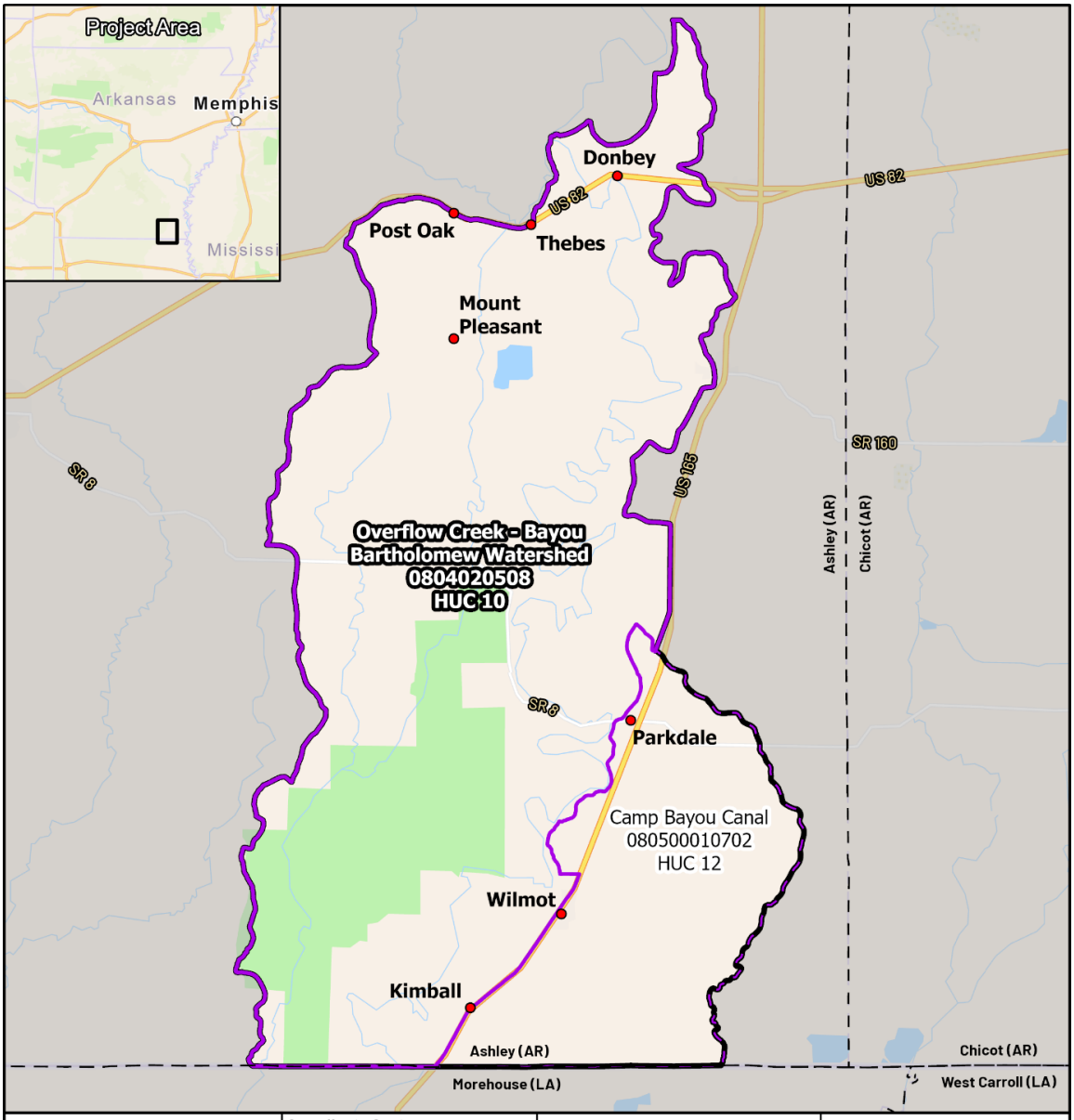


Figure 1

Project Area Map

City of Wilmot Area
Watershed Plan – Environmental Assessment

Ashley County, Arkansas

Headway Environmental

Date: 10/18/2023

Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, Arkansas 72201-3215

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From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Thursday, April 4, 2024 9:08 AM
To: Lee Forbes; Shanna Kistler; Natalie Bue
Cc: leefarmcomconsult13@gmail.com
Subject: THPO responses
Attachments: 8-Eudora THPO.zip; 9-Wilmot THPO.zip

Follow Up Flag: Follow up
Flag Status: Flagged

External sender - Think before you click

Good morning,

Attached for your records are copies of the THPO responses that I have gotten from NRCS to date for your projects.

Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tull

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
Rogers, AR 72756
www.craftontull.com

Disclaimer
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. Thank you, we appreciate your cooperation.

MISSISSIPPI BAND OF CHOCTAW INDIANS
TRIBAL HISTORIC PRESERVATION OFFICE
101 INDUSTRIAL ROAD
CHOCTAW, MS 39350

Mr. Scott Smallwood
USDA, Natural Resources Conservation Service
Room 3416, Federal Building
700 W Capitol Ave
Little Rock, AR 72201-3215

December 1, 2023

VIA E-MAIL AT: Christopher.Smallwood@usda.gov
RE: Section 106 Review Consultation, Watershed Project Plans and Environmental Assessments for City of Eudora, Chicot County, AR; City of Wilmot, Ashley County, AR; and City of Camden, Ouachita County, AR.

Determination: No Adverse Effect to Tribal Interests

Dear Mr. Smallwood,

The Mississippi Band of Choctaw Indians' (MBCI) THPO has received and appreciates your letters dated October 19, 19, & 25, 2023, in which you request our Tribe's review and consultation on the above-referenced projects.

We have reviewed the full description of the proposed projects that you have provided, and at this time, MBCI finds no effect to historic places and no adverse effect to Tribal interests. However, we would like to be notified if there are any inadvertent discoveries of any potentially significant cultural items or artifacts during the execution of these projects.

Thank you for consulting with the Mississippi Band of Choctaw Indians on the above-referenced projects. If you have any questions that we at MBCI may be able answer, please do not hesitate to contact me by phone at (601) 663-7606, or by email at section106@choctaw.org.

Sincerely,

Melanie Carson

Melanie Carson
Planner/THPO
Mississippi Band of Choctaw Indians
Planning Office
101 Industrial Rd/PO Box 6010
Choctaw, MS 39350

Karen McCurdy

From: Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>
Sent: Thursday, November 2, 2023 10:19 AM
To: Karen McCurdy
Subject: [External] FW: [External Email]Watershed Projects

Randy Childress
Assistant State Conservationist
for Water Resources
USDA - Natural Resources Conservation Service
Room 3416, Federal Bldg., 700 W. Capitol
Little Rock, AR 72201
☎ **State Office:** (501)301-3131
✆ **Cell:** (870)219.5376
✉ **Email:** randy.childress@usda.gov

From: Smallwood, Christopher - FPAC-NRCS, AR <Christopher.Smallwood@usda.gov>
Sent: Thursday, November 2, 2023 10:11 AM
To: Childress, Randy - FPAC-NRCS, AR <randy.childress@usda.gov>; Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>; Mosier, Cara - FPAC-NRCS, AR <Cara.Mosier1@usda.gov>
Subject: FW: [External Email]Watershed Projects

FYI – Quapaw Nation has no comments currently on the project, requests to be involved during the planning process on all five.

Thank you,

Scott

From: Billie Burtrum <Billie.Burtrum@quapawnation.com>
Sent: Thursday, November 2, 2023 10:08 AM
To: Smallwood, Christopher - FPAC-NRCS, AR <Christopher.Smallwood@usda.gov>
Subject: [External Email]Watershed Projects

> You don't often get email from billie.burtrum@quapawnation.com. Learn why this is important

[External Email]
If this message comes from an **unexpected sender** or references a **vague/unexpected topic;**
Use caution before clicking links or opening attachments.
Please send any concerns or suspicious messages to: Spam.Abuse@usda.gov

Scott,

Hope you and your family are well! I reviewed (5) watershed projects today that we are determining are “no comment” until the further planning is received. The projects are in the City of Wilmot, Helena, Eudora, Camden, and Altheimer. From my understanding the projects are currently in the planning the plan stages so we will hold off on commenting until the plans are formulated. If you need us to submit a formal letter stating so let me know but I wanted to make sure you were aware that our lack of response was intentional at this time and we look forward to reviewing the full plans.

Thank you,

Billie Burtrum
QHPP Deputy Director
Quapaw Nation
PO Box 765
Quapaw OK 74363
918-238-3100 ext 6023

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QUAPAW NATION

P.O. Box 765
Quapaw, OK 74363-0765

(918) 542-1853
FAX (918) 542-4694

December 22, 2023

Dear To Whom It May Concern:

I am pleased to announce that the Quapaw Nation (hereafter "Nation") has, since our initial approval by the National Park Service, assumed and maintained certain State Historic Preservation Officer duties on tribal lands. In particular, the Quapaw Nation has official responsibility for the review of federal undertakings pursuant to Section 106 of the National Historic Preservation Act, and all the other SHPO functions set out in the Act with the exceptions of assisting in the certification of local governments and assisting in the evaluation of Investment Tax Credit rehabilitation projects. The functions assumed by the Nation will now be administered by our new Tribal Historic Preservation Officer (THPO), Billie Burtrum.

Please update your records to ensure that all future correspondence to the Nation relating to Section 106 and or other historical matters involving the Nation is addressed to Ms. Burtrum's office. Her contact information is as follows:

Billie Burtrum

Preservation Officer/QHPP Director

Quapaw Historic Preservation Program

P.O. Box 765

Quapaw, Oklahoma 74363-0765

Telephone: (918) 238-3100

bburtrum@quapawnation.com

If Billie or I can answer any questions about this transition, please do not hesitate to contact us.

Respectfully,

Wena Supernaw

Wena Supernaw, Chair
Quapaw Nation Business Committee

From: Karen McCurdy <Karen.McCurdy@craftontull.com>
Sent: Monday, April 15, 2024 2:24 PM
To: ejones@ejesinc.com; Philip Massirer; Asamenaw Seyoum; Keith Britton; Valerie Miller; Jeremy Rice; Kale Farmer; Lee Forbes; Shanna Kistler; Natalie Bue; Kelley Eubanks; Chandoo, Mujahid; Holliday, TJ; Stengel, Michael H
Subject: Quapaw THPO letter & consultation preferences form
Attachments: QN-PRSRV01_THPO-Canon_1640_001.pdf; Quapaw Nation Announcement of New THPO Officer-Signed.pdf

External sender - Think before you click

Hi all,

We received the attached on another project, but NRCS has confirmed that these updates do apply to the ABMA watershed projects. If you don't already have the attached, please keep them in mind when contacting the Quapaw Nation.

Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tull

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
Rogers, AR 72756
www.craftontull.com

Disclaimer
This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. Thank you, we appreciate your cooperation.

QUAPAW NATION

P.O. Box 765
Quapaw, OK 74363-0765

(918) 542-1853
FAX (918) 542-4694

To Whom It May Concern,

Quapaw Nation Preservation Program has updated our intake software to Laserfiche. This notice is to update your agency on our consultation preferences, files that can't be accepted, what are acceptable, and a cover sheet requested by some agencies regarding what we look for in a review.

We ask that any section 106 review request be sent via email to section106@quapawnation.com. Please do not send multiple copies of the same consultation to Chair Supernaw or other email address as they will all be directed to the Section 106 inbox. This slows the process down and results in unnecessary delays from duplications. If the consultation is too large for electronic formats or you do not have a way to send documents via email, please mail to the address below.

The following files are not acceptable for our system: .zip, .rar, .7z, and .kmz. We do accept the following: Dropbox, One Drive, Google Drive, and Share Point. The attached cover sheet is how we intake review requests. This was requested by some agencies to help with understanding what we are looking for during a review. If your agency feels comfortable filling out the form and sending it with your 106-consultation request that is a welcome step.

If you have any questions, please do not hesitate to contact us at the following:

- For all Federal Agencies and National Forest Service, contact deputy director, Cheyenne Greenup Ext. 6109 or Cheyenne.greenup@quapawnation.com
- For all Tribal, non-federal, and Town or Counties, contact Jared McCormick ext.3100 or jared.mccormick@quapawnation.com
- For all agencies under United States Department of Agriculture, contact Julia Pebeahsy ext. 6108 or Julia.Pebeahsy@quapawnation.com

You may contact me at billie.burtrum@quapawnation.com, ext. 6023 or deputy director, Cheyenne Greenup at Cheyenne.greenup@quapawnation.com, ext. 6109

Sincerely,

Billie Burtrum

Billie Burtrum
Preservation Officer/QNHPP Director
Quapaw Nation
P.O. Box 765
Quapaw, OK 74363
(w) 918-238-3100
(f) 918-674-2456

Submitting Agency Name and Contact Information	Project Name:
	Project Address: Project County and State: Project Coordinates:
Project Description	Agency Information

	Included	In Progress	Notes
Amount of Ground Disturbance: depth and area			
Distance to nearest archeological and architectural sites			
Has a Cultural Resource, Archeological or Environmental Survey been conducted? If yes please include			
Maps: APE, County, State maps should be clear and detailed			
Relevant pictures supporting document			
Have any SHPO/THPO comments been received? IF yes please include			

All correspondence should be addressed to QNHPP Director, emails should be sent to section106@quapwnation.com

ARKANSAS:

ARKANSAS
ASHLEY
BAXTER
BOONE
BRADLEY
CALHOUN
CARROLL
CHICOT
CLARK
CLAY
CLEBURNE
CLEVELAND
COLUMBIA
CONWAY
CRAIGHEAD
CRAWFORD
CRITTENDEN
CROSS
DALLAS
DESHA
DREW
FAULKNER
FRANKLIN
FULTON
GARLAND
GRANT
GREENE
HEMPSTEAD
HOT SPRING
HOWARD
JACKSON
JEFFERSON
JOHNSON
INDEPENDENCE
IZARD
LAFAYETTE
LAWRENCE
LEE
LINCOLN
LITTLE RIVER
LOGAN
LONOKE
MARION
MILLER
MISSISSIPPI
MONROE
MONTGOMERY
NEVADA
NEWTON
OUACHITA
PERRY
PHILLIPS
PIKE
POINSETT
POLK
POPE
PRAIRIE
PULASKI
RANDOLPH
SALINE
SCOTT
SEARCY
SEBASTIAN
SEVIER
SHARP
ST. FRANCIS
STONE
UNION
VAN BUREN
WHITE
WOODRUFF
YELL

ILLINOIS:

ALEXANDER
GALLATIN
HARDIN
JACKSON
JOHNSON
MADISON
MASSAC
MONROE
POPE
PULASKI
RANDOLPH
ST. CLAIR
SALINE
UNION
WHITE

KANSAS:

CHEROKEE
LABETTE

KENTUCKY:

BALLARD
CALDWELL
CARLISLE
CRITTENDEN
FULTON
GRAVES
HENDERSON
HICKMAN
LIVINGSTON
LYON
MCCRACKEN
MARSHALL
TRIGG
UNION
WEBSTER

LOUISIANA:

BOSSIER
CADDO
CLAIBORNE
DE SOTO
EAST CARROLL
LINCOLN
MADISON
MOREHOUSE

OUACHITA
RED RIVER
RICHLAND
UNION
WEBSTER
WEST CARROLL

INDIANA:

POSEY
VANDERBURGH
WARRICK

MISSOURI:

BARRY
BOLLINGER
BUTLER
CAPE GIRARDEAU
CARTER
DUNKLIN
HOWELL
IRON
JEFFERSON
MADISON
MISSISSIPPI
NEW MADRID
OREGON
OZARK
PEMISCOT
PERRY
REYNOLDS
RIPLEY
ST. CHARLES
STE. GENEVIEVE
ST. FRANCOIS
ST. LOUIS
SCOTT
SHANNON
STODDARD
STONE
TANEY
WAYNE
ST. LOUIS CITY

MISSISSIPPI:

BOLIVAR
COAHOMA
DESOTO
HINDS
HUMPHREYS
ISSAQUENA
LEFLORE
PANOLA
QUITMAN
SHARKEY
SUNFLOWER
TALLAHATCHIE
TATE
TUNICA
WARREN
WASHINGTON
YAZOO

OKLAHOMA:

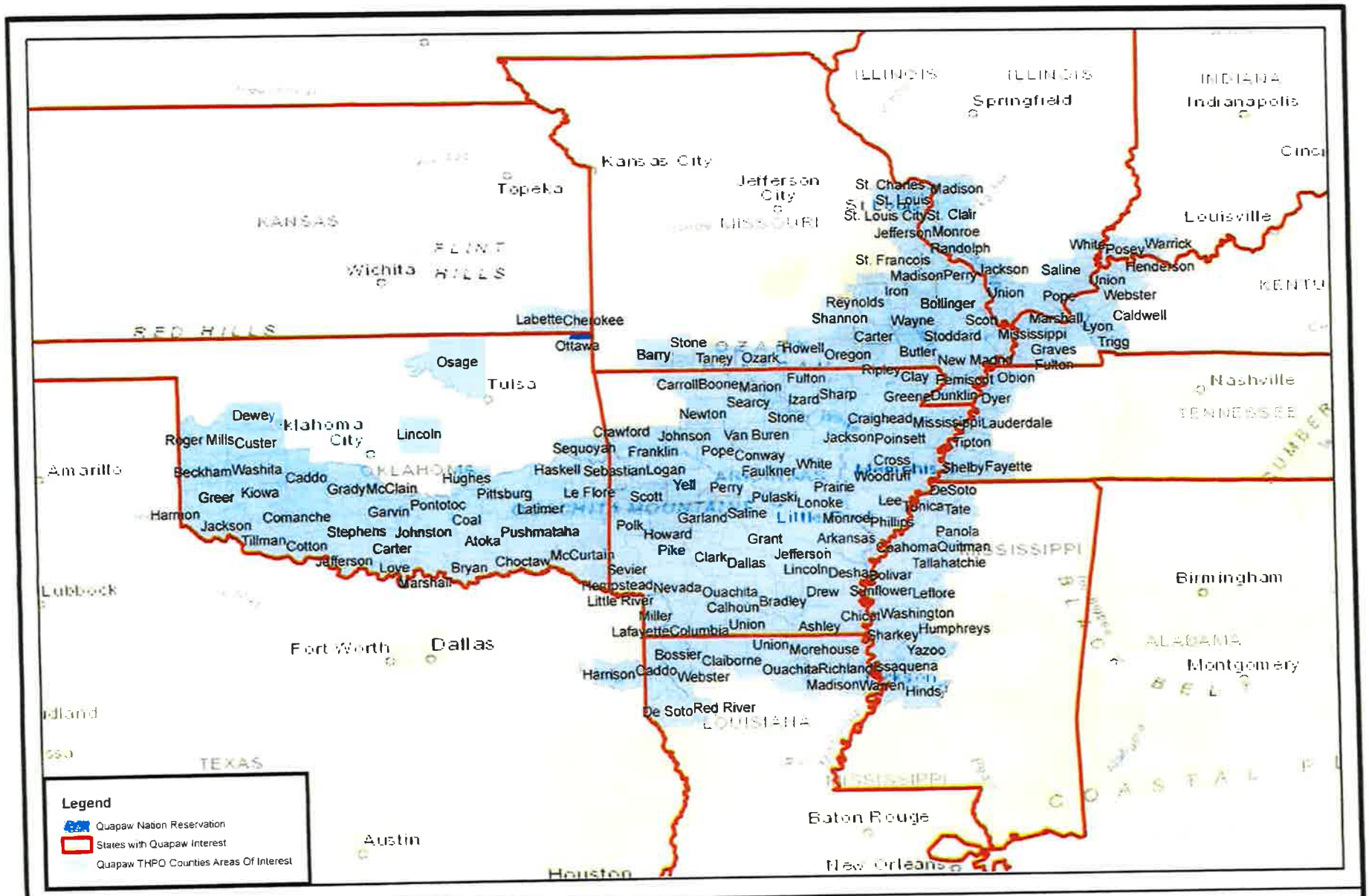
ATOKA
BECKHAM
BRYAN
CADDO
CARTER
CHOCTAW
COAL
COMANCHE
COTTON
CUSTER
DEWEY
GARVIN
GRADY
GREER
HARMON
HASKELL
HUGHES
JACKSON
JEFFERSON
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MCCURTAIN
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OSAGE
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STEPHENS
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TILLMAN
WASHITA

TENNESSEE:

DYER
FAYETTE
LAKE
LAUDERDALE
OBION
SHELBY
TIPTON

TEXAS:

HARRISON



Quapaw Nation THPO

Quapaw Nation
Historic Preservation Program

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Design By: Wind

Contact Information

Drawn By:	Everett Bandy, THPO
Phone:	918-238-3100
Date:	October 19, 2023

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Mr. Jeff Harjo
Tribal Historic Preservation Officer
Absentee Shawnee Tribe
2025 South Gordon Cooper Drive
Shawnee, Oklahoma 74801

Dear Mr. Harjo:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Absentee Shawnee Tribe regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Absentee Shawnee Tribe in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

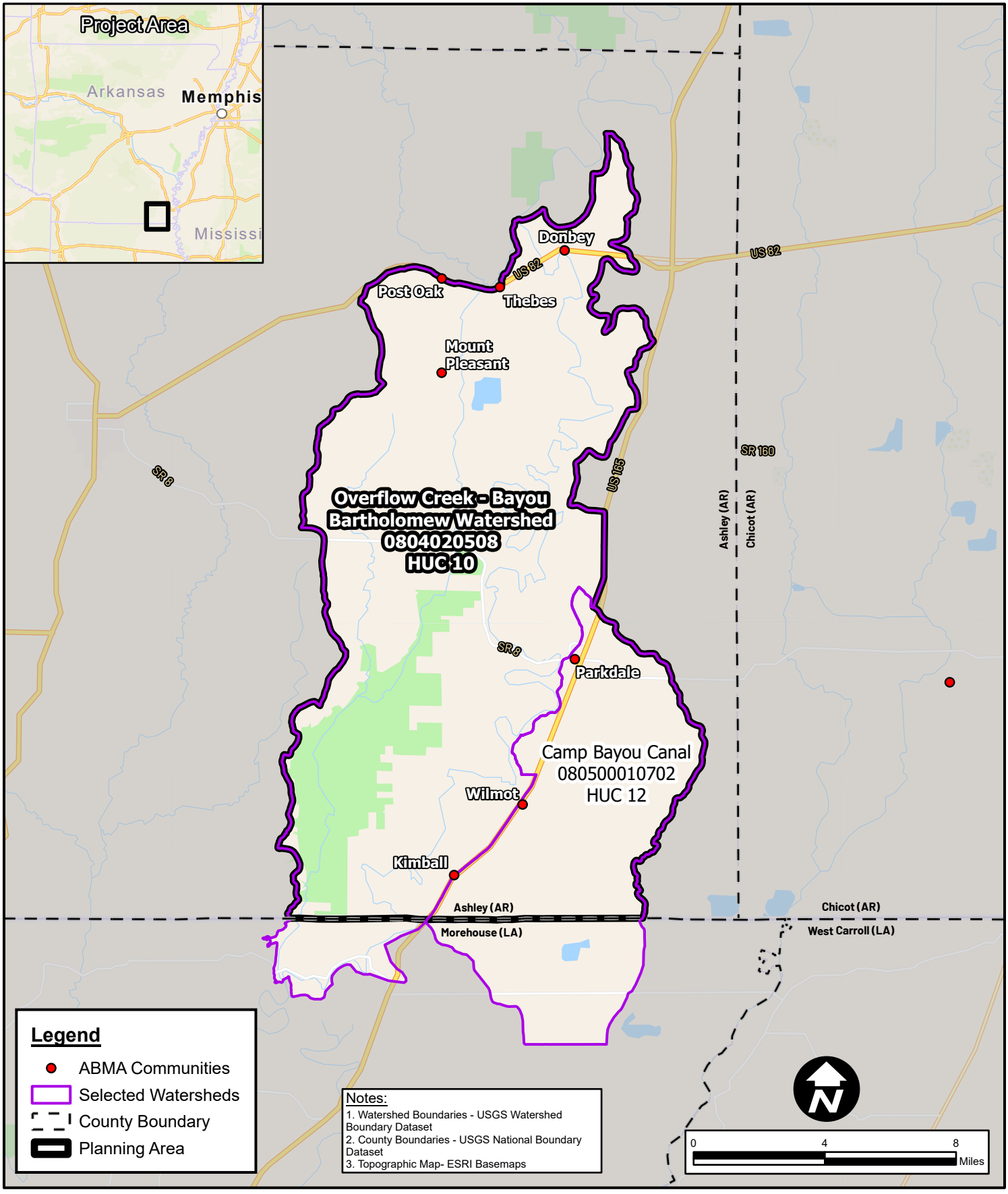
The NRCS respects the authority of the Absentee Shawnee Tribe as a sovereign nation. If at any time you wish to formally share your interests, recommendations, and concerns directly with NRCS, please notify the State Conservation Engineer, Stephen Smedley at Stephen.Smedley@usda.gov, (501) 301-3141 and Resource Conservationist, Bill Kinkaid William.Kinkaid@usda.gov, (501) 301-3127.

Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

Additionally, these archaeological sites and AHPP resources are located within a one mile radius of these project sites: [redacted]

Alternative 6A/MNMB Alternative: Combined NBS-Focused Alternative

Alternative 6A/Maximum Net Monetized Benefit (MNMB) Alternative combines the Nature Based Solutions (NBS)-Focused Alternatives for each of the five Project Sites. Alternative 6A includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
- Install 19,929 LF of stream management corridors (SMCs) in Wilmot and Parkdale, including a total of 13,089 LF of vegetated swale and 6,840 LF of national channel design (NCD) stream, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels.
- Decommission and remove 0.3 ac of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 structures.

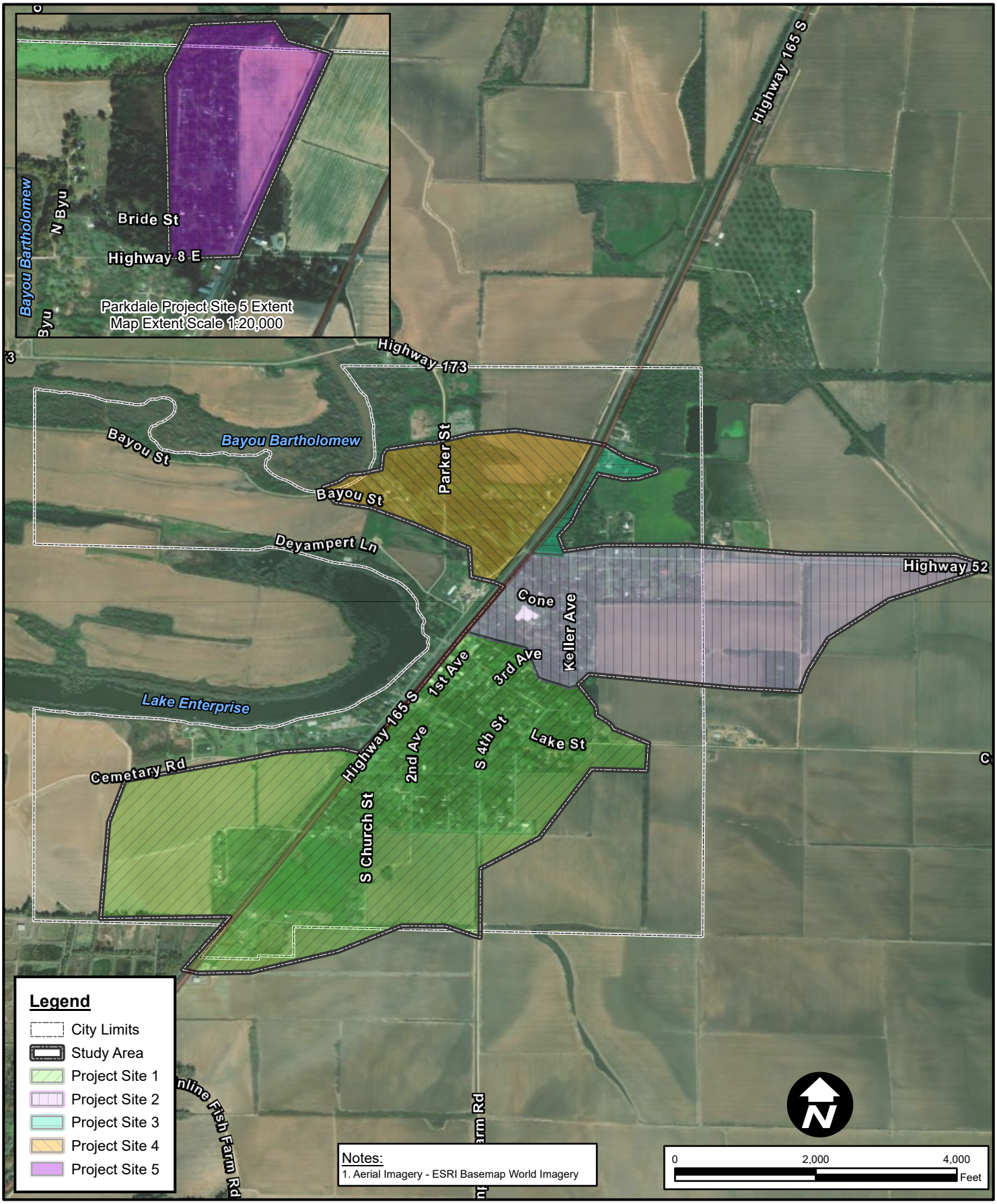
Alternative 6A will provide flood-risk reduction and flood-damage mitigation using NBS-focused measures wherever possible and appropriate. A combination of onsite/local stormwater bioretention cells and stormwater quality wetland (SWQs), upgraded stormwater collection/minor drainage systems, and the installation of SMCs will substantially reduce the frequency and severity of street and property flooding in the Study Area.

Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
- Install 19,929 LF of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels.
- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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United States Department of Agriculture
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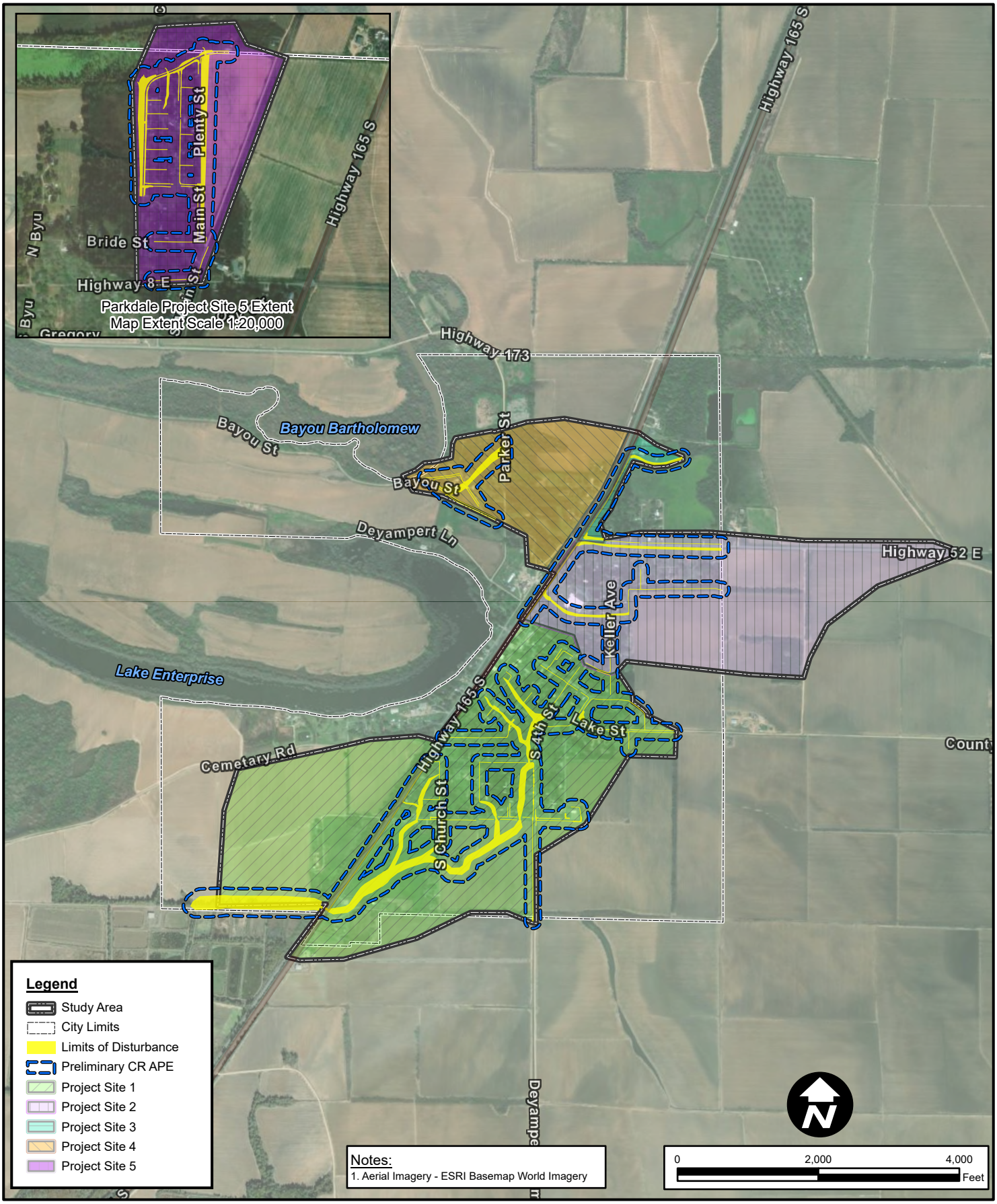
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

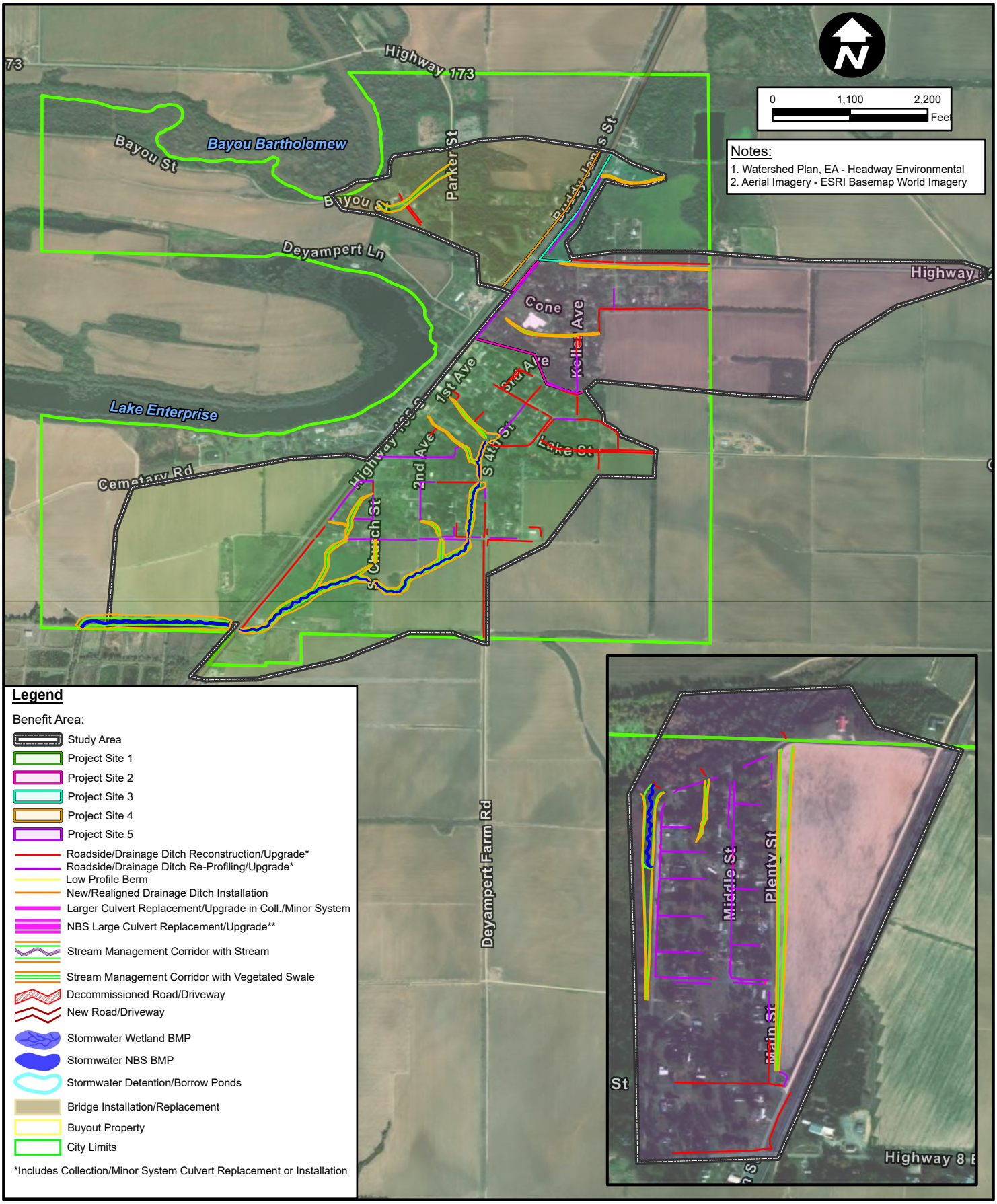
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

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

Dear Ms. Williams:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Alabama-Quassarte Tribal Town regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

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NRCS recognizes the important role of the Alabama-Quassarte Tribal Town in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

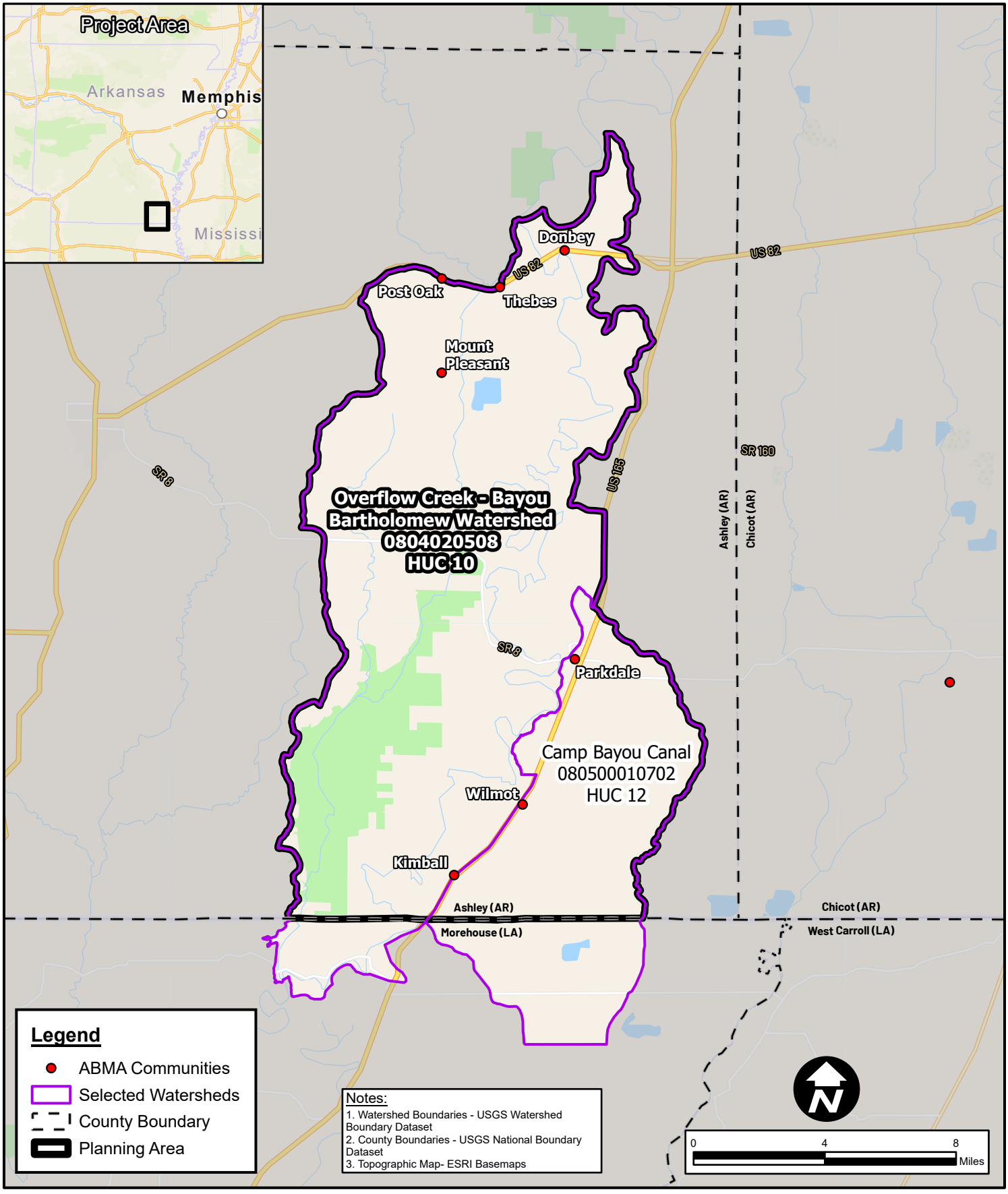
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Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

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- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
- Install 19,929 LF of stream management corridors (SMCs) in Wilmot and Parkdale, including a total of 13,089 LF of vegetated swale and 6,840 LF of national channel design (NCD) stream, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels.
- Decommission and remove 0.3 ac of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 structures.

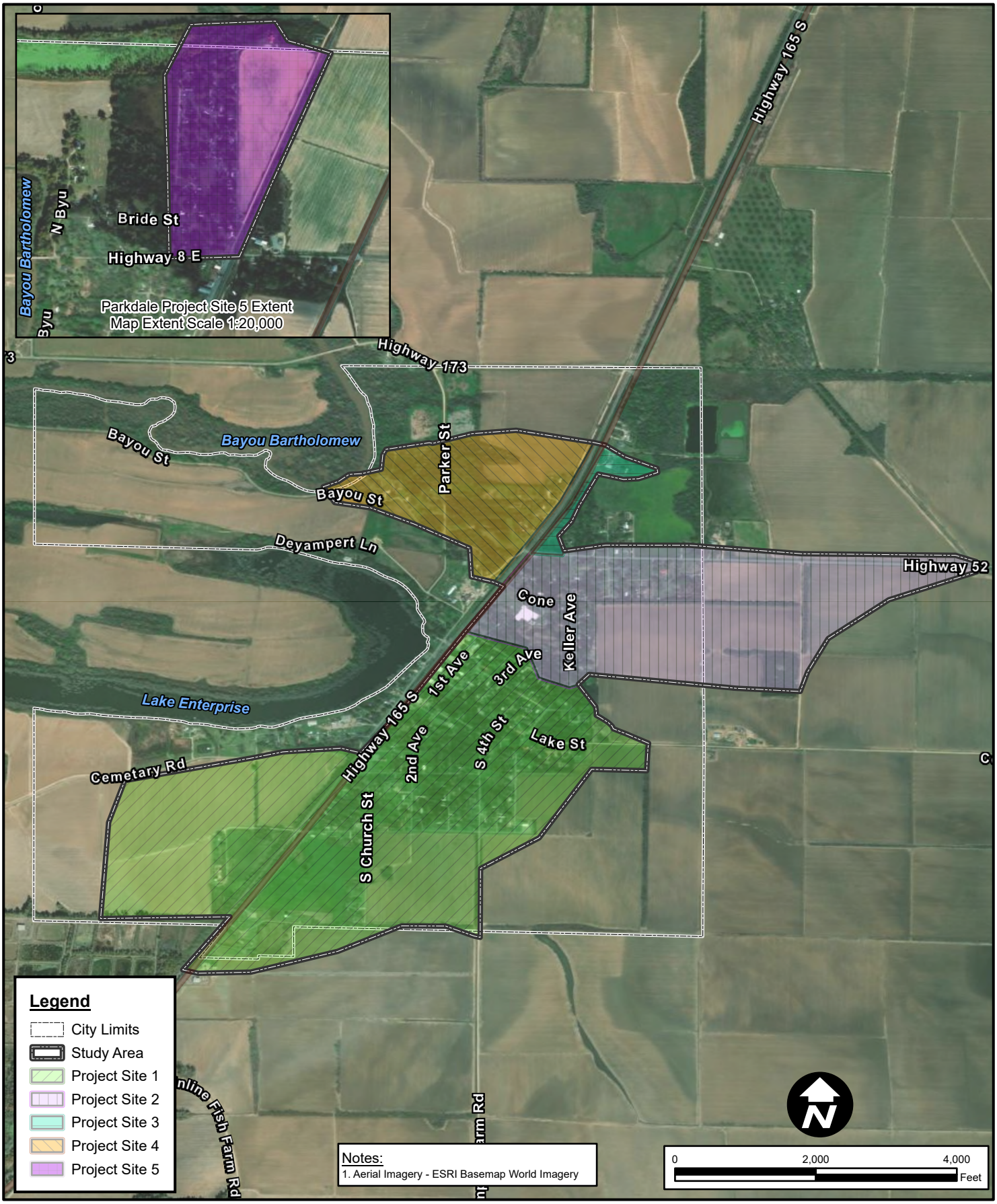
Alternative 6A will provide flood-risk reduction and flood-damage mitigation using NBS-focused measures wherever possible and appropriate. A combination of onsite/local stormwater bioretention cells and stormwater quality wetland (SWQs), upgraded stormwater collection/minor drainage systems, and the installation of SMCs will substantially reduce the frequency and severity of street and property flooding in the Study Area.

Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
- Install 19,929 LF of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels.
- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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Natural Resources Conservation Service

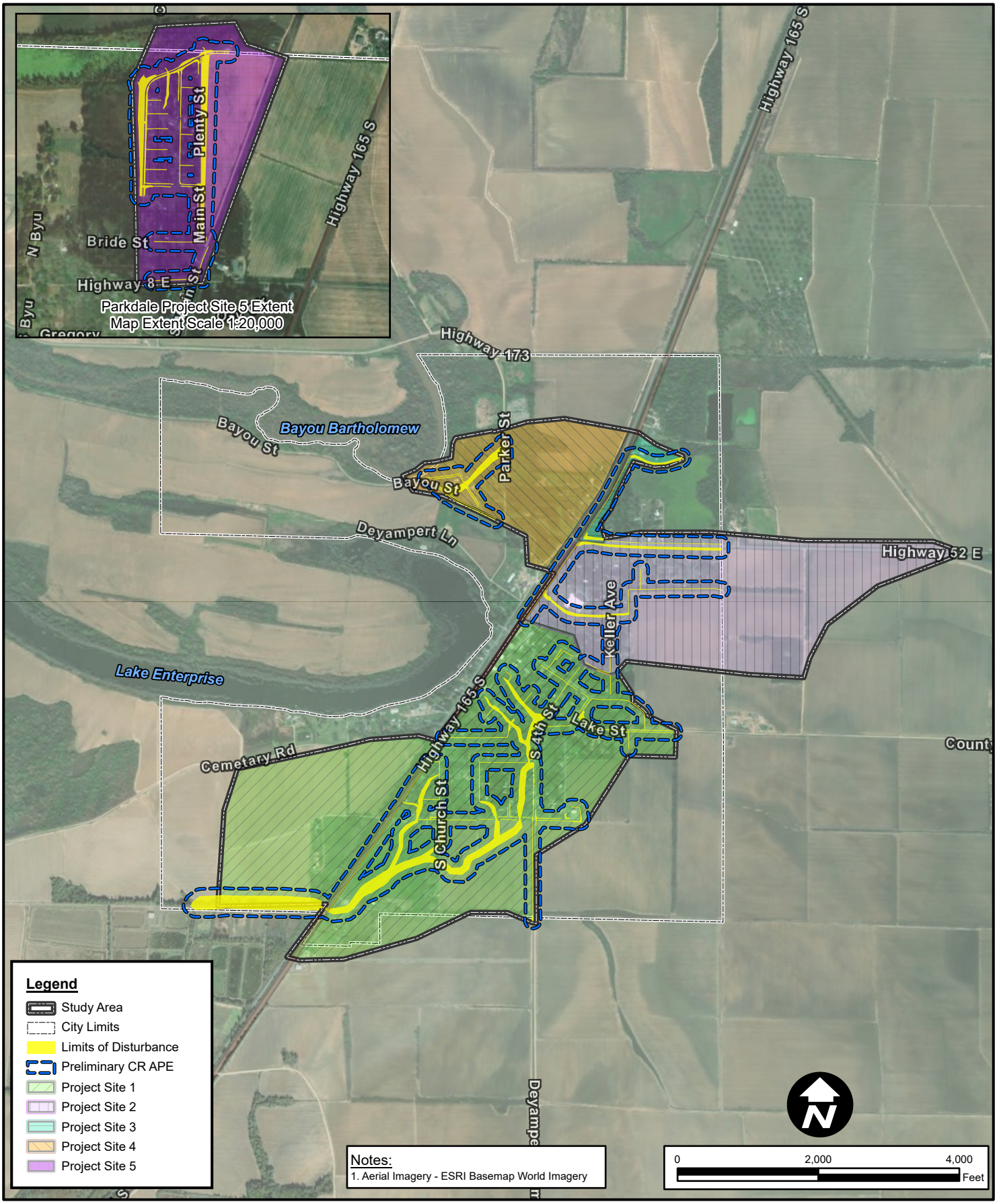
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

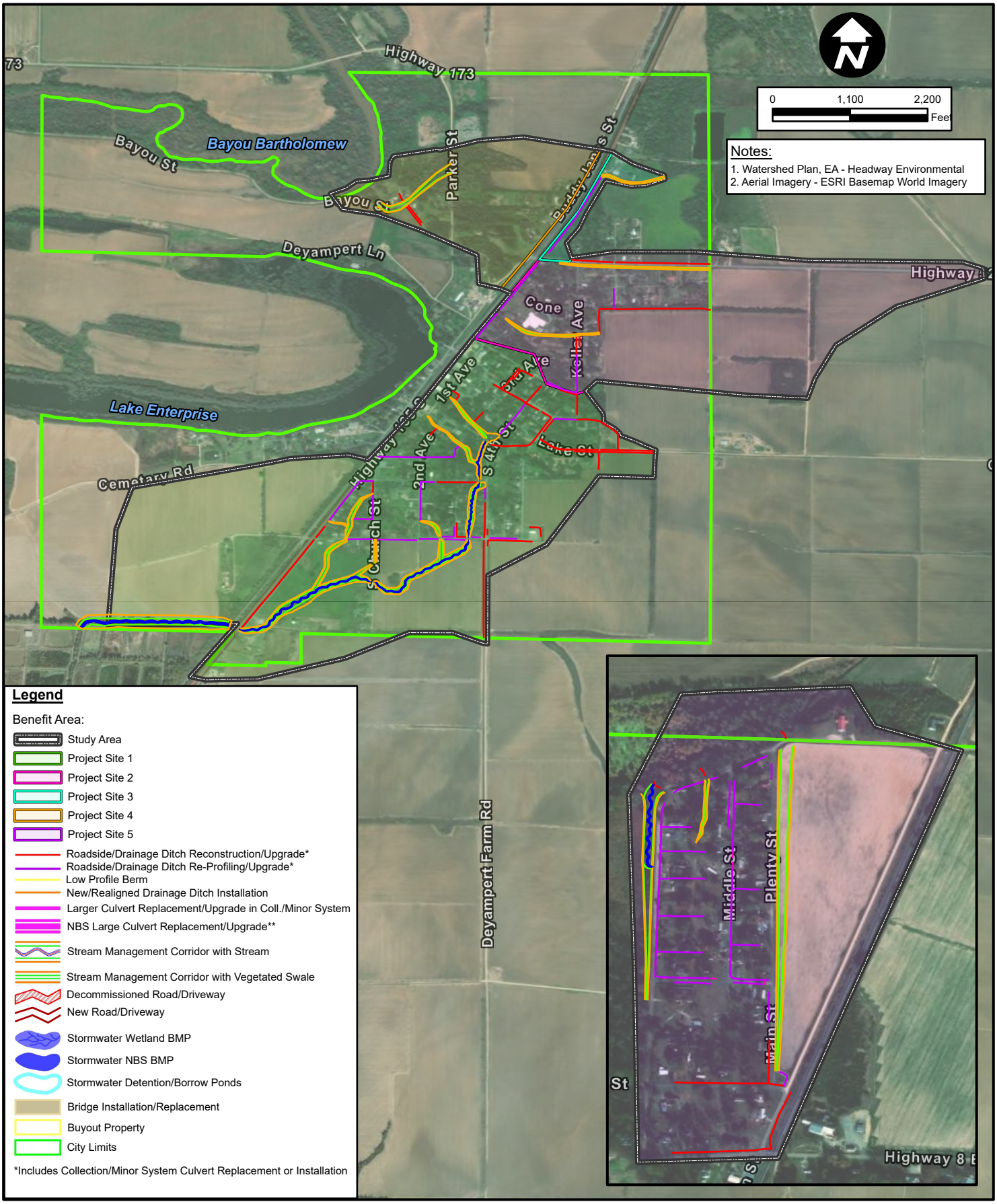
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Mr. Scott Kaufman
State Historic Preservation Officer
Arkansas Historic Preservation Program
1100 North Street
Little Rock, Arkansas 72201

Dear Mr. Kaufman:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Continuing Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS initiated consultation with the Arkansas Historic Preservation Program regarding this project in a letter dated October 19th, 2023 (included for your reference). We are writing to continue consultation under Section 106 of the National Historic Preservation Act (NHPA) regarding proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Arkansas Historic Preservation Program in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

If at any time you wish to formally share your interests, recommendations, and concerns directly with NRCS, please notify the State Conservation Engineer, Stephen Smedley at Stephen.Smedley@usda.gov, (501) 301-3141 and Resource Conservationist, Bill Kinkaid William.Kinkaid@usda.gov, (501) 301-3127.

Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Initial Consultation and Scoping Letter
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201

October 19, 2023

Scott Kaufman, State Historic Preservation Officer
Arkansas Historic Preservation Program
1100 North Street
Little Rock, AR 72201

RE: Invitation to a scoping meeting for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that your agency participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because your agency may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and the one 12-digit and one 10-digit HUC watersheds that encompass the city and surrounding areas of the county. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan-EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm, November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail

or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

A virtual (MS Teams) review of the project area is scheduled for November 21, 2023. The meeting will begin at 10:30 am and conclude at 12:00 pm (central standard time). If your agency plans to participate in the review meeting, please notify Bill Kinkaid at william.kinkaid@usda.gov and Lee Forbes (Headway Environmental – Project Consultant) at lforbes@headwayenviro.com by November 17, 2023.

Thank you for your timely response and assistance with the scoping of this project. If you have any questions or comments, please contact Bill Kinkaid of my staff at william.kinkaid@usda.gov or via phone at 501-301-3127.

RANDY CHILDRESS

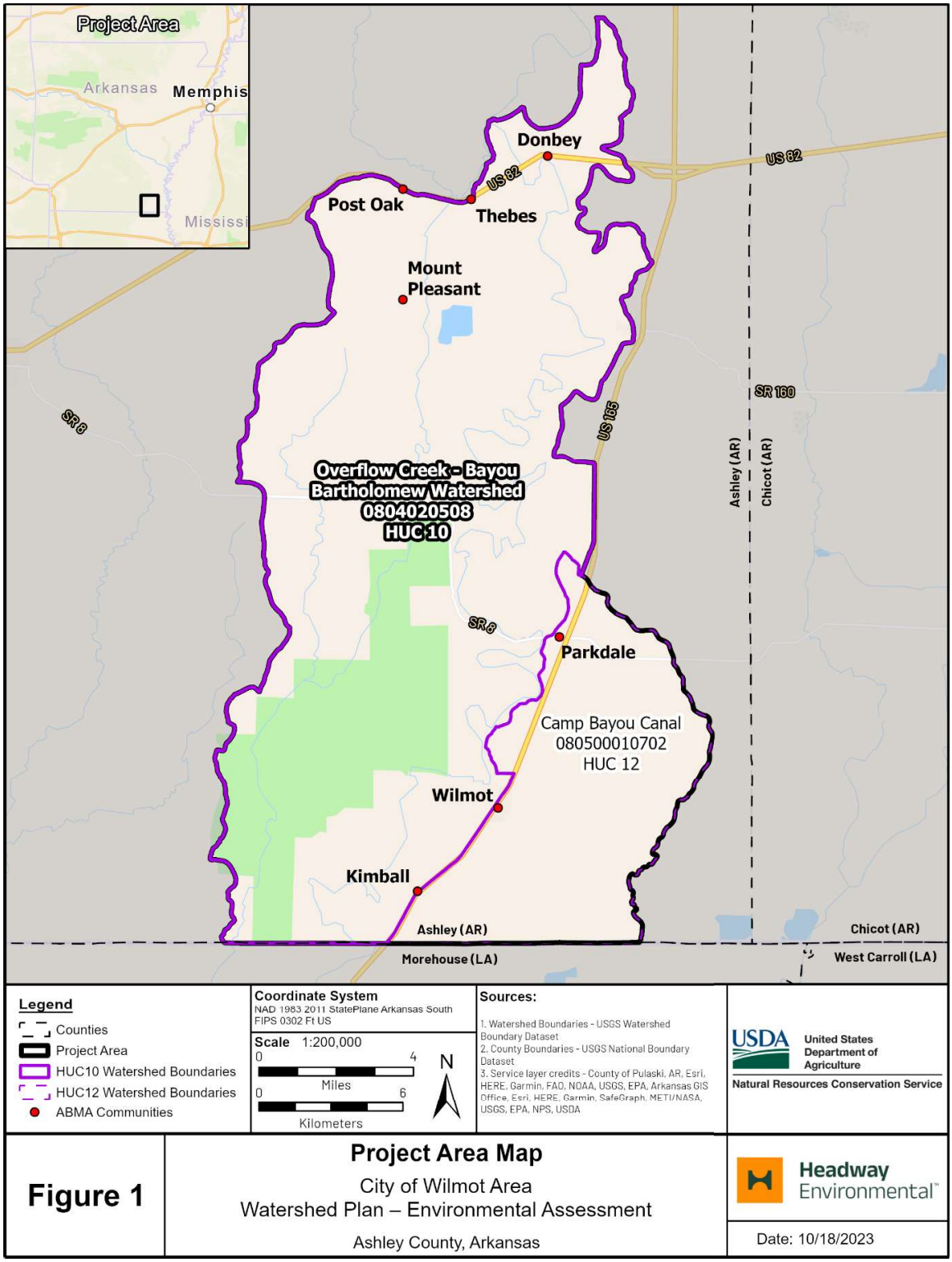
Digitally signed by RANDY CHILDRESS
Date: 2023.10.25 12:32:14 -05'00'

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Location Map
Scoping Meeting Notice

Project Area Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

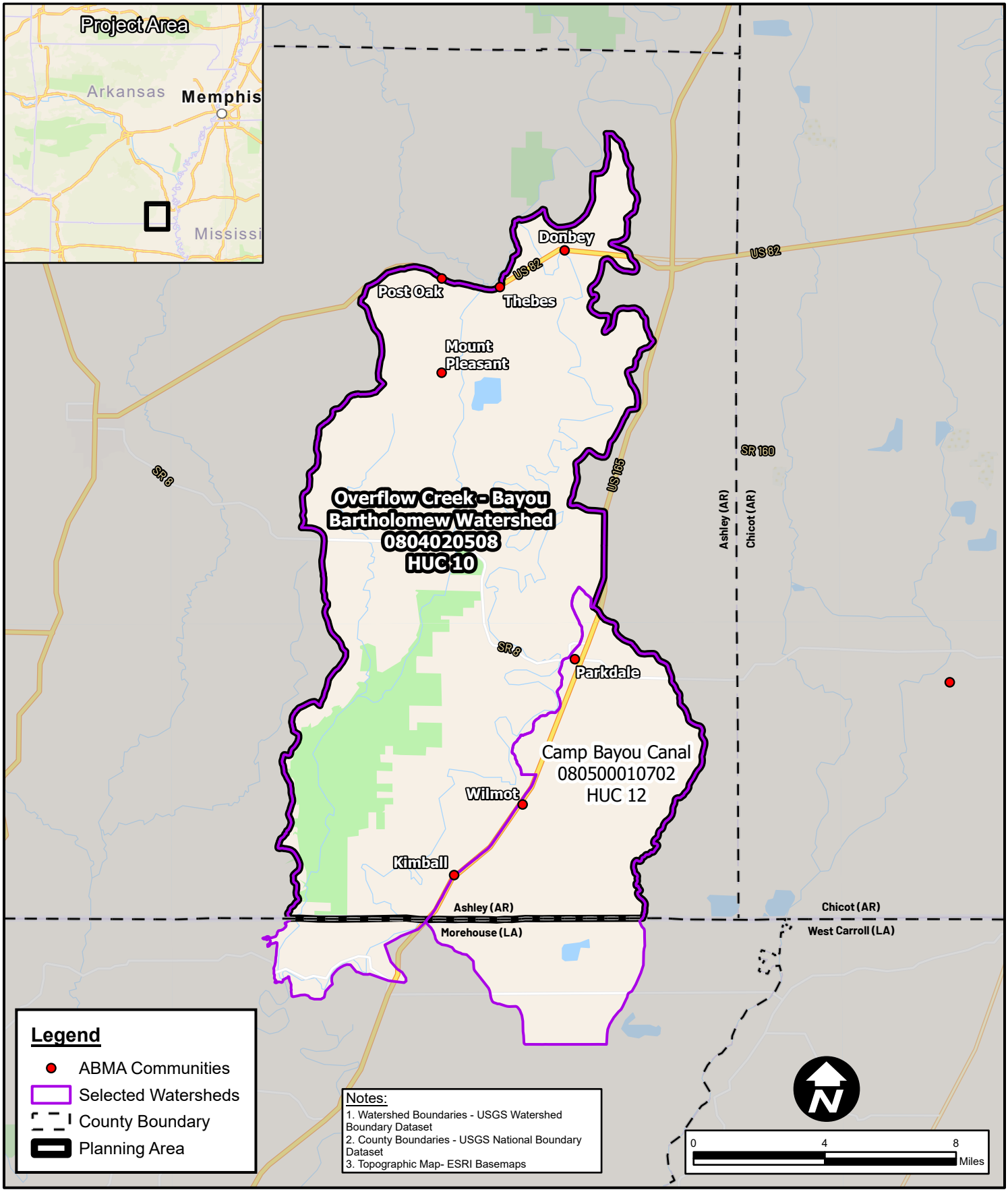
November 16, 2023
6:00 – 7:45 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will include a presentation followed by an open-house, come-and-go forum, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.



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United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

Additionally, these archaeological sites and AHPP resources are located within a one mile radius of these project sites: [redacted]

Alternative 6A/MNMB Alternative: Combined NBS-Focused Alternative

Alternative 6A/Maximum Net Monetized Benefit (MNMB) Alternative combines the Nature Based Solutions (NBS)-Focused Alternatives for each of the five Project Sites. Alternative 6A includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
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- Buyout and remove 10 structures.

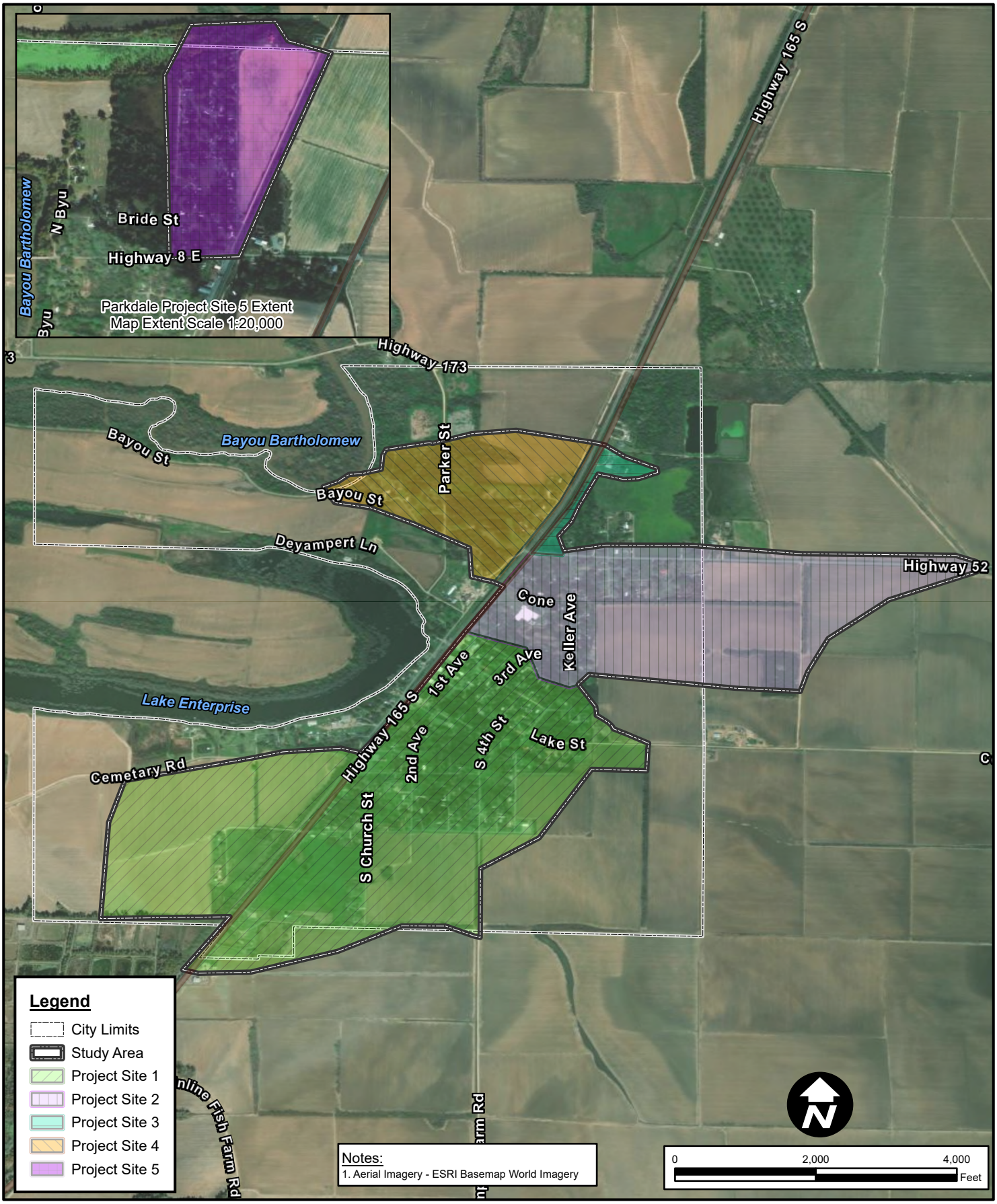
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Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
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Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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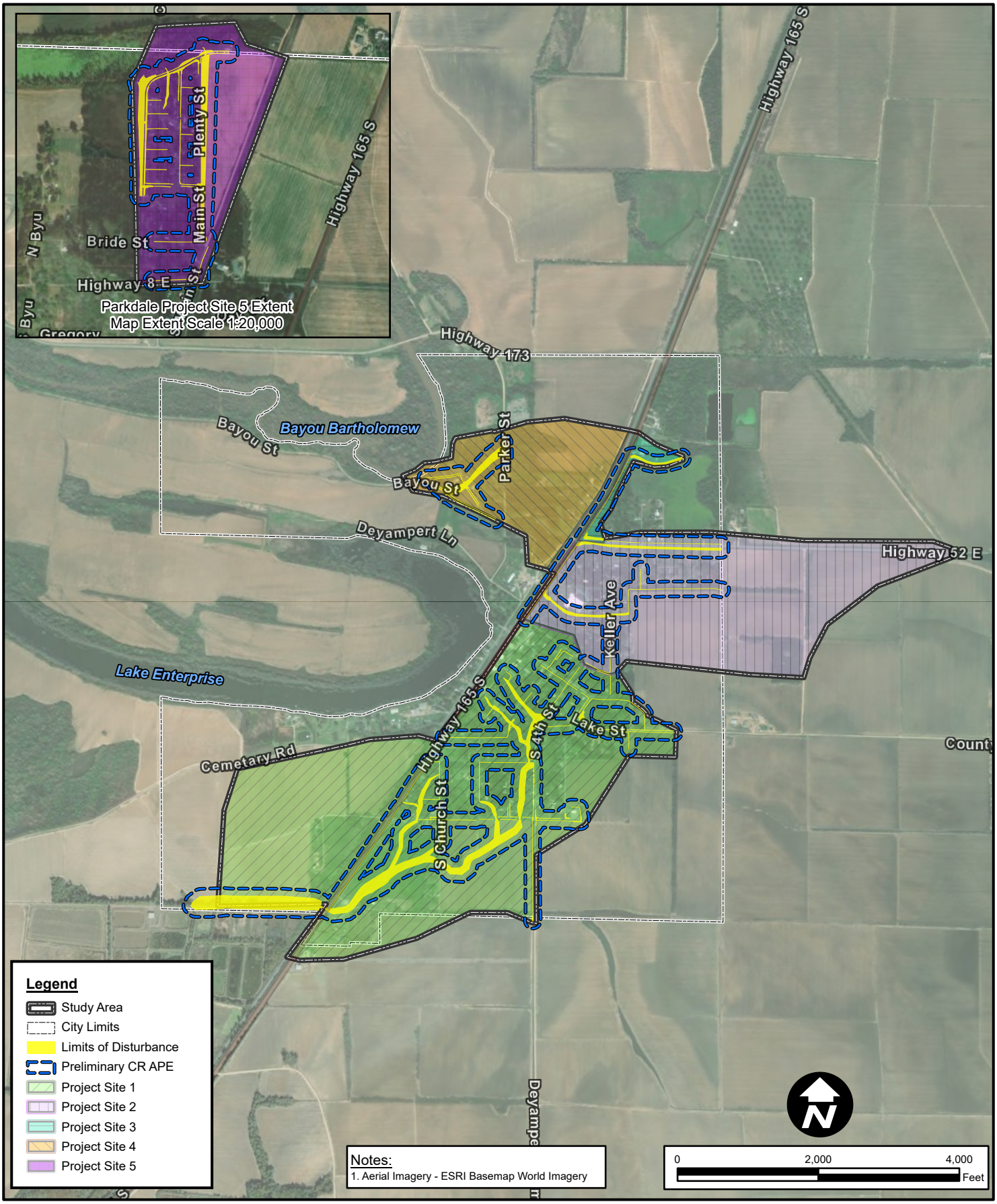
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

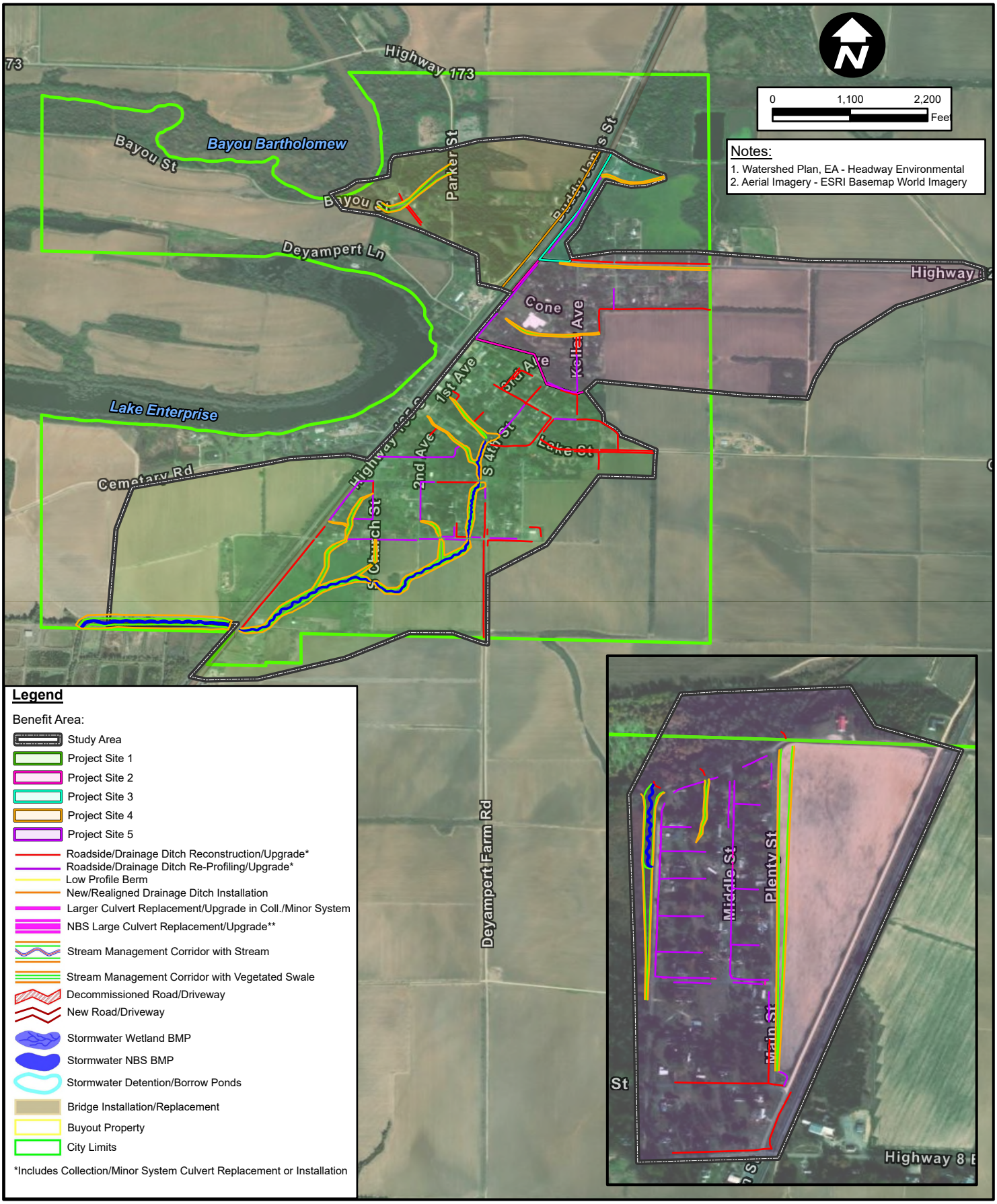
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Mr. Jonathan Rohrer
Tribal Historic Preservation Officer
Caddo Nation of Oklahoma
Post Office Box 487
Binger, Oklahoma 73009

Dear Mr. Rohrer:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Caddo Nation of Oklahoma regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Caddo Nation of Oklahoma in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

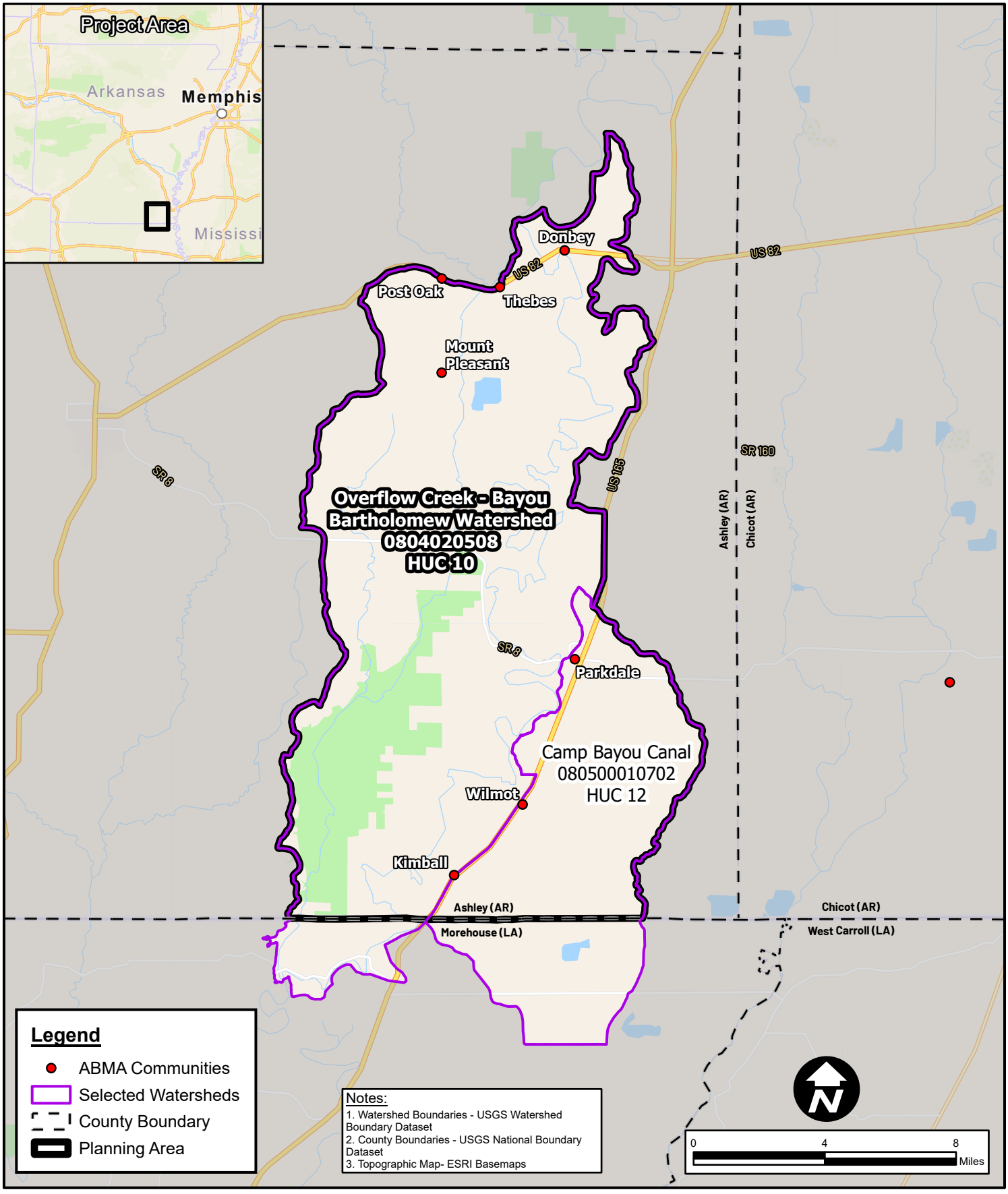
The NRCS respects the authority of the Caddo Nation of Oklahoma as a sovereign nation. If at any time you wish to formally share your interests, recommendations, and concerns directly with NRCS, please notify the State Conservation Engineer, Stephen Smedley at Stephen.Smedley@usda.gov, (501) 301-3141 and Resource Conservationist, Bill Kinkaid William.Kinkaid@usda.gov, (501) 301-3127.

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Amanda J. Mathis
State Conservationist

Enclosures:
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Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
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United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

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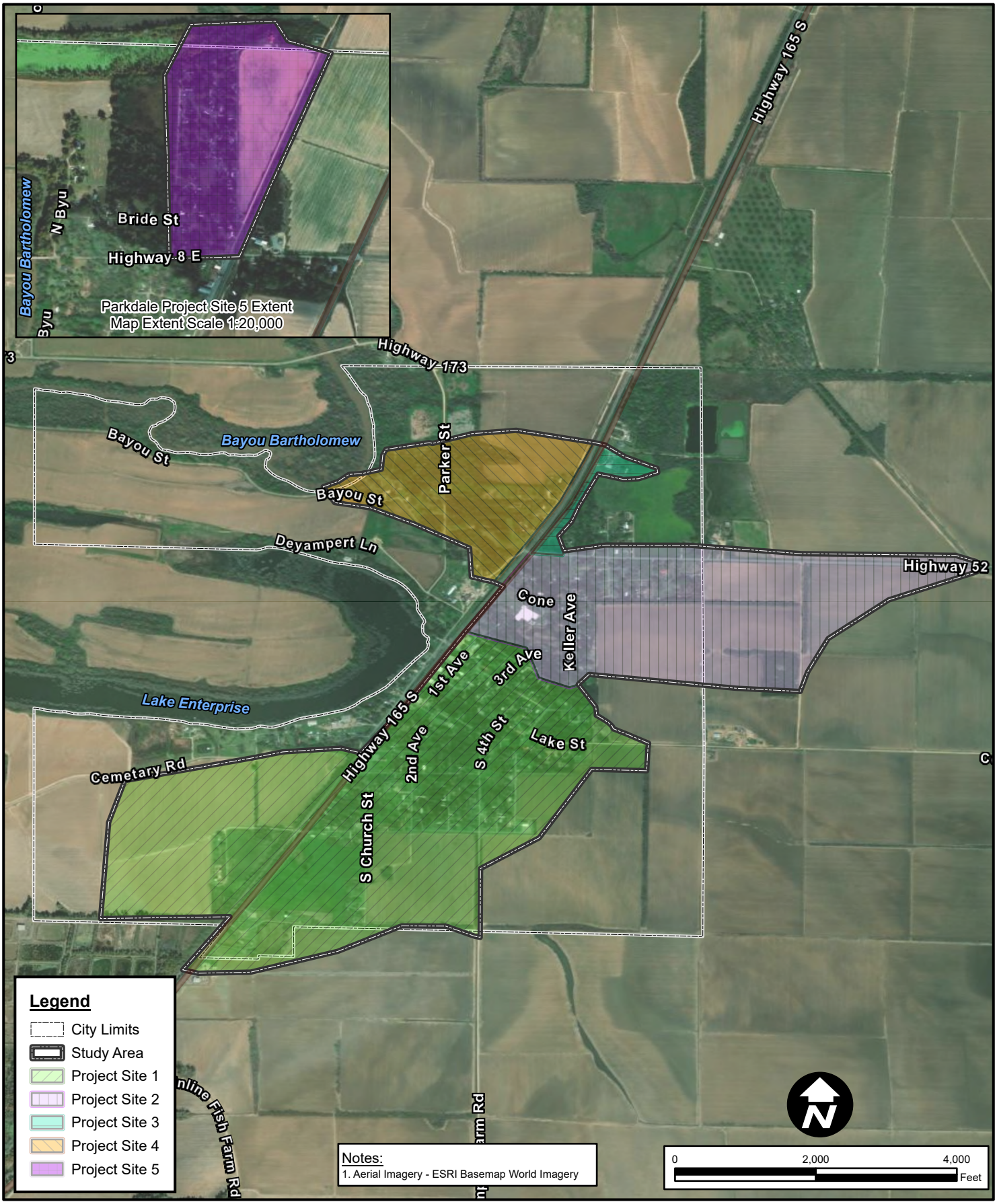
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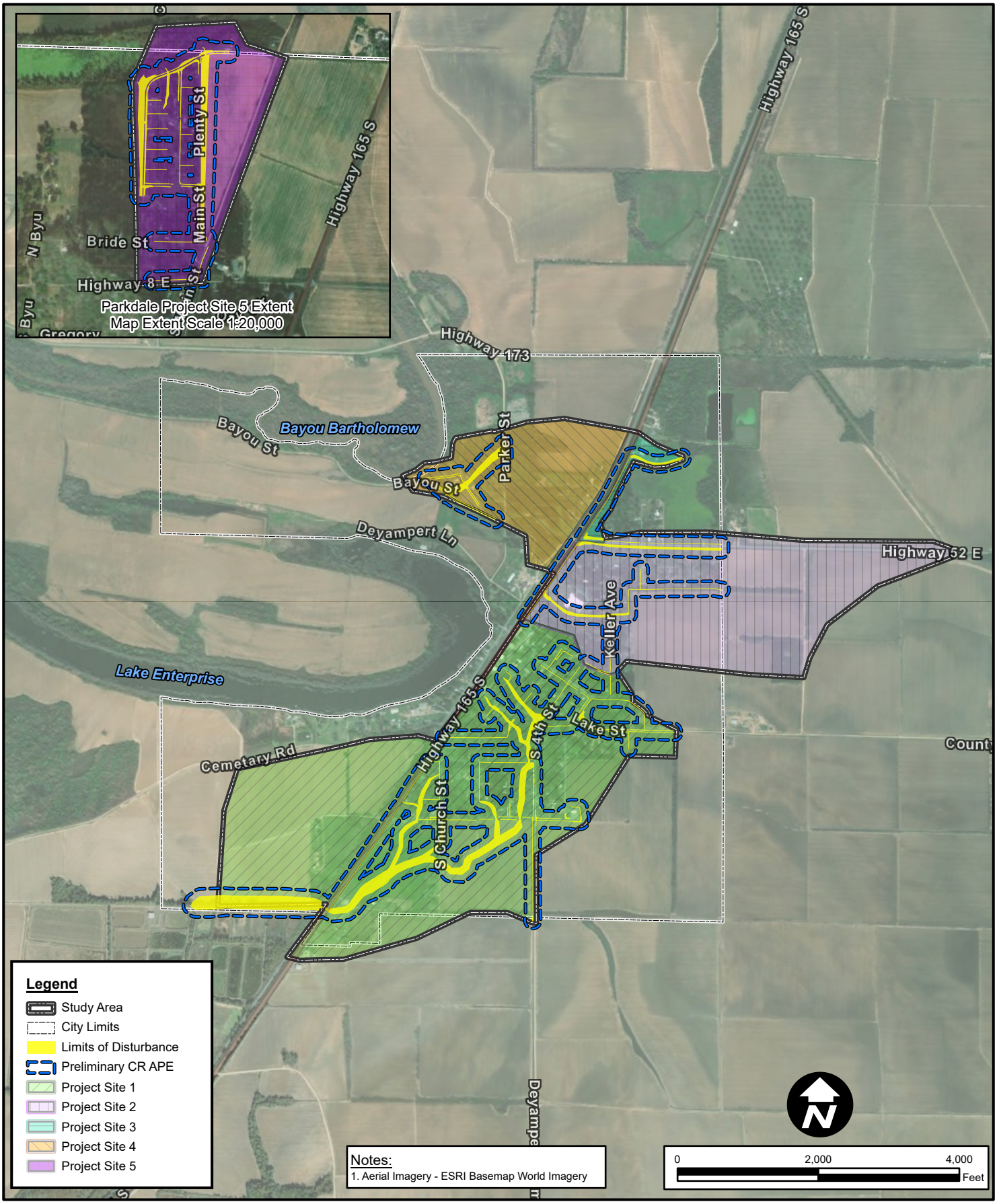
STUDY AREA AND PROJECT SITES

City of Wilmot Area
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Figure B-2

Date: March 9, 2026

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United States Department of Agriculture
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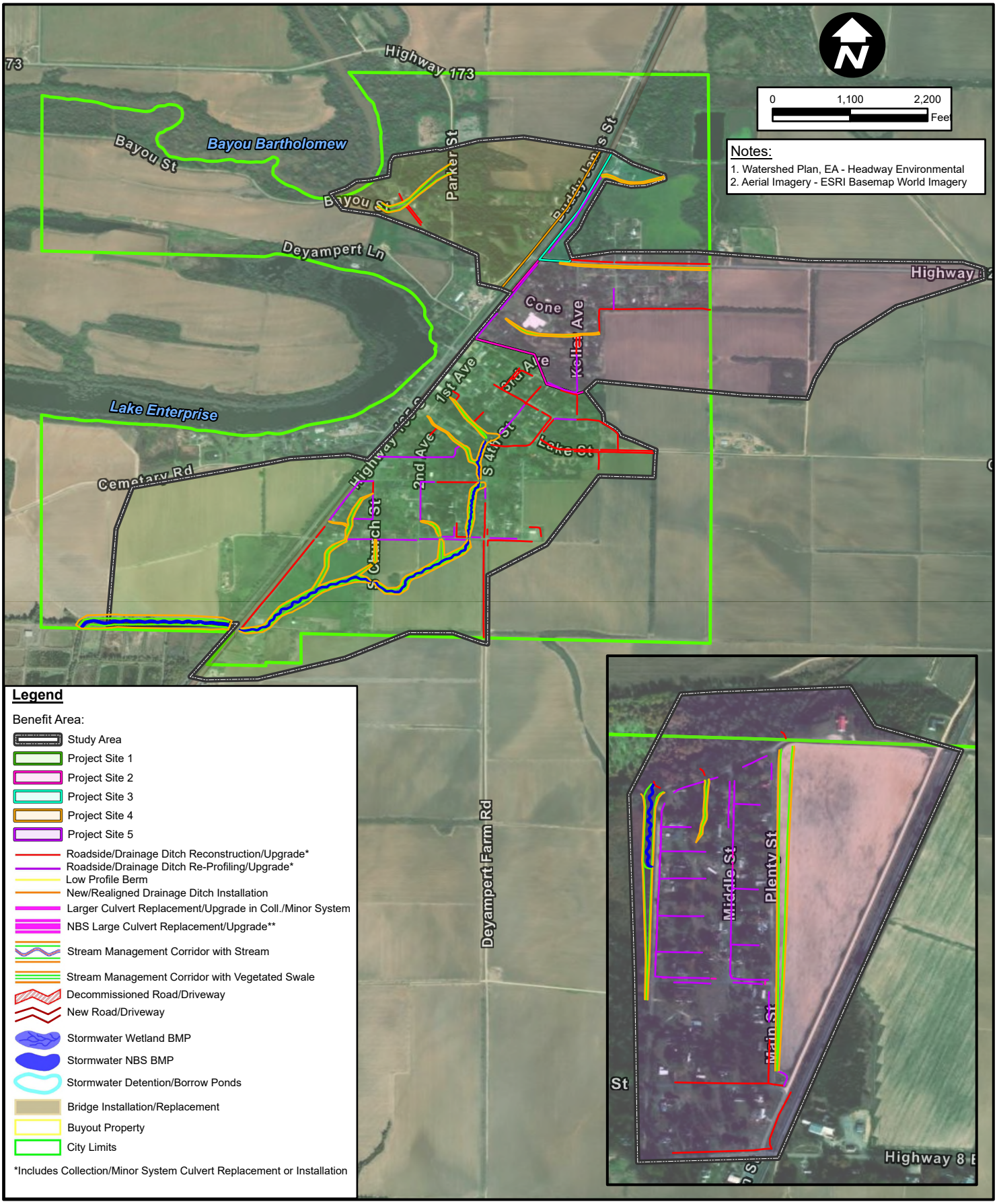
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LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Ms. Elizabeth Toombs
Tribal Historic Preservation Officer
Cherokee Nation
Post Office Box 948
Tahlequah, Oklahoma 74465

Dear Ms. Toombs:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Cherokee Nation regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Cherokee Nation in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

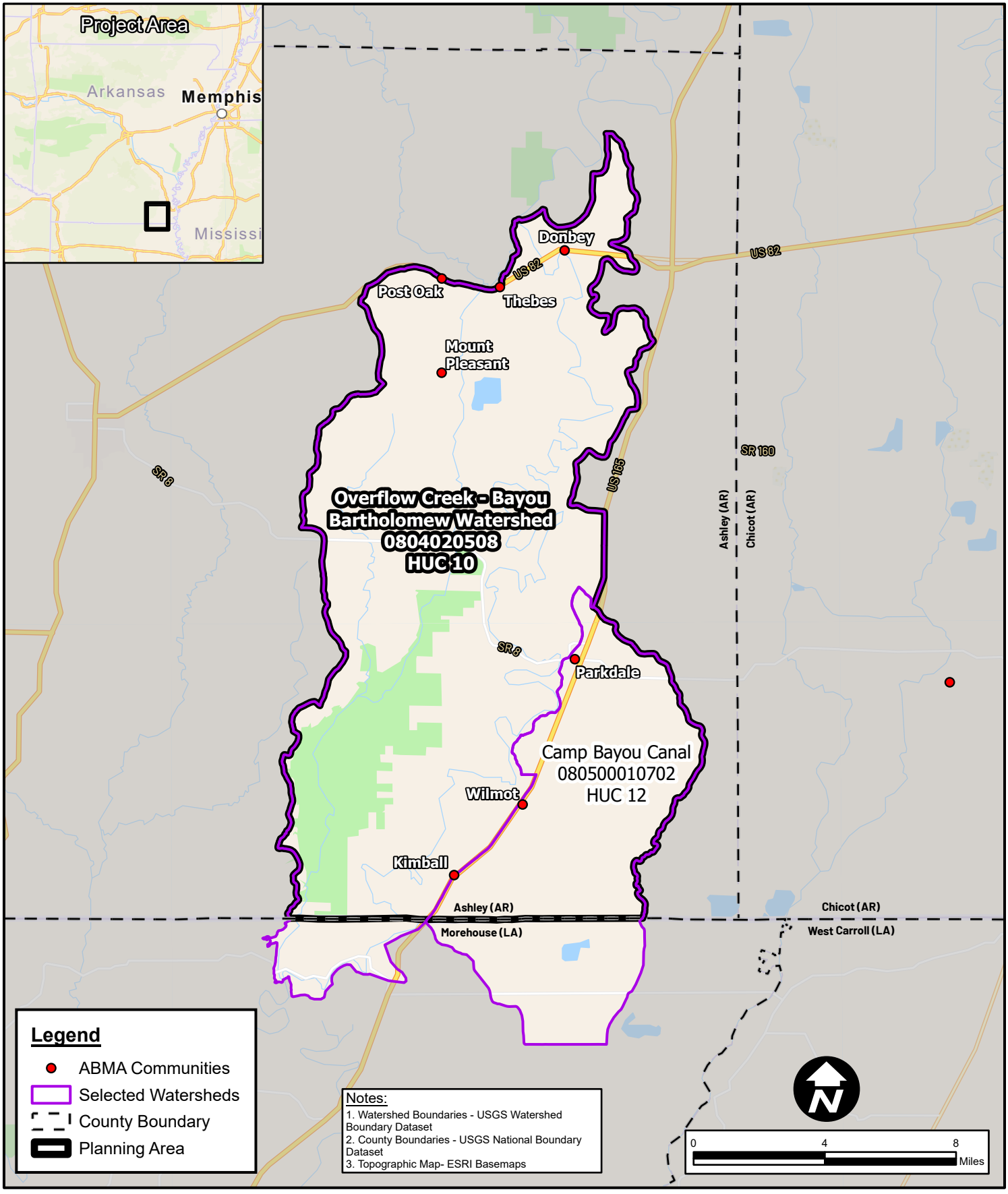
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Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201



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United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

Additionally, these archaeological sites and AHPP resources are located within a one mile radius of these project sites: [redacted]

Alternative 6A/MNMB Alternative: Combined NBS-Focused Alternative

Alternative 6A/Maximum Net Monetized Benefit (MNMB) Alternative combines the Nature Based Solutions (NBS)-Focused Alternatives for each of the five Project Sites. Alternative 6A includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
- Install 19,929 LF of stream management corridors (SMCs) in Wilmot and Parkdale, including a total of 13,089 LF of vegetated swale and 6,840 LF of national channel design (NCD) stream, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels.
- Decommission and remove 0.3 ac of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 structures.

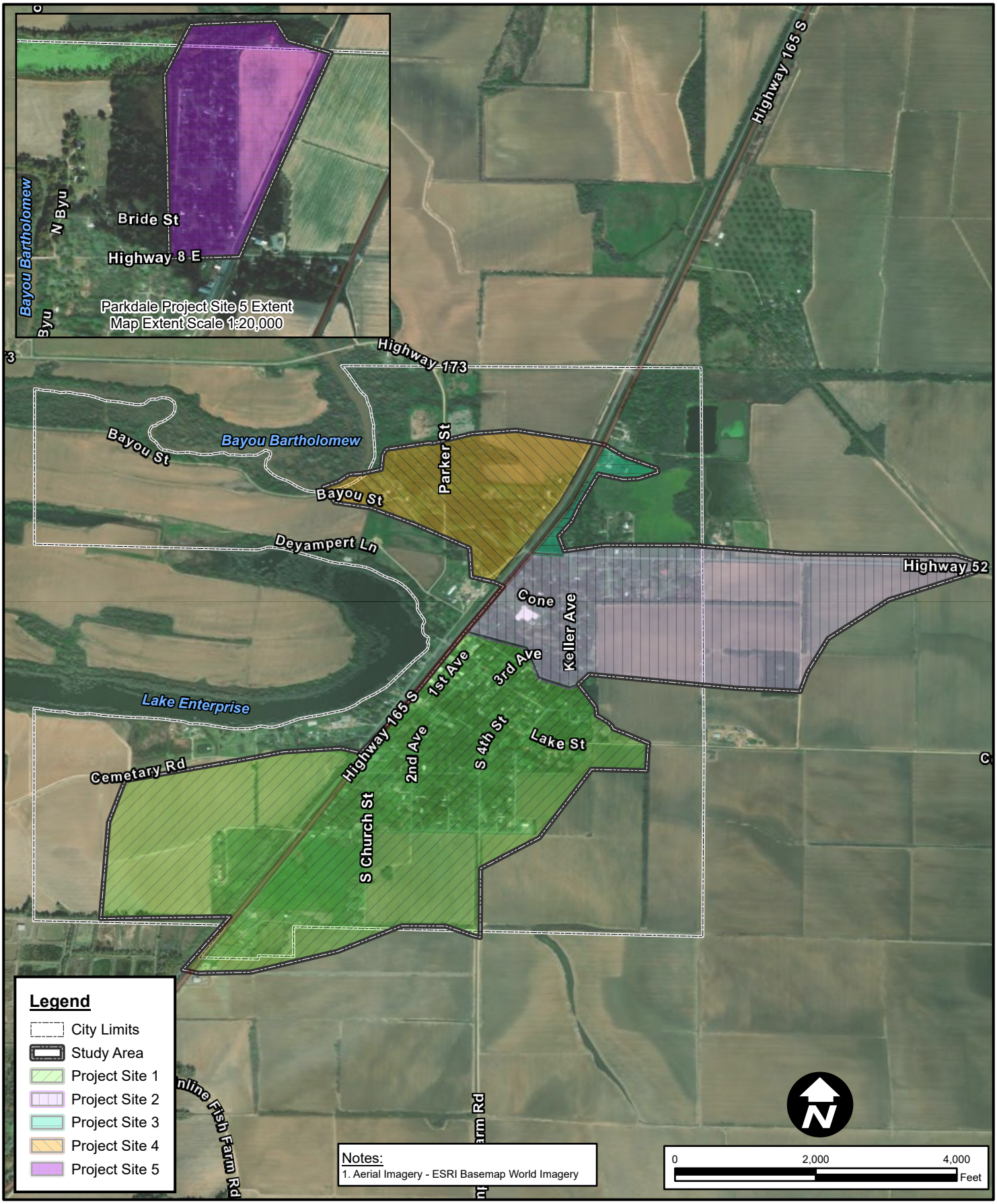
Alternative 6A will provide flood-risk reduction and flood-damage mitigation using NBS-focused measures wherever possible and appropriate. A combination of onsite/local stormwater bioretention cells and stormwater quality wetland (SWQs), upgraded stormwater collection/minor drainage systems, and the installation of SMCs will substantially reduce the frequency and severity of street and property flooding in the Study Area.

Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
- Install 19,929 LF of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels.
- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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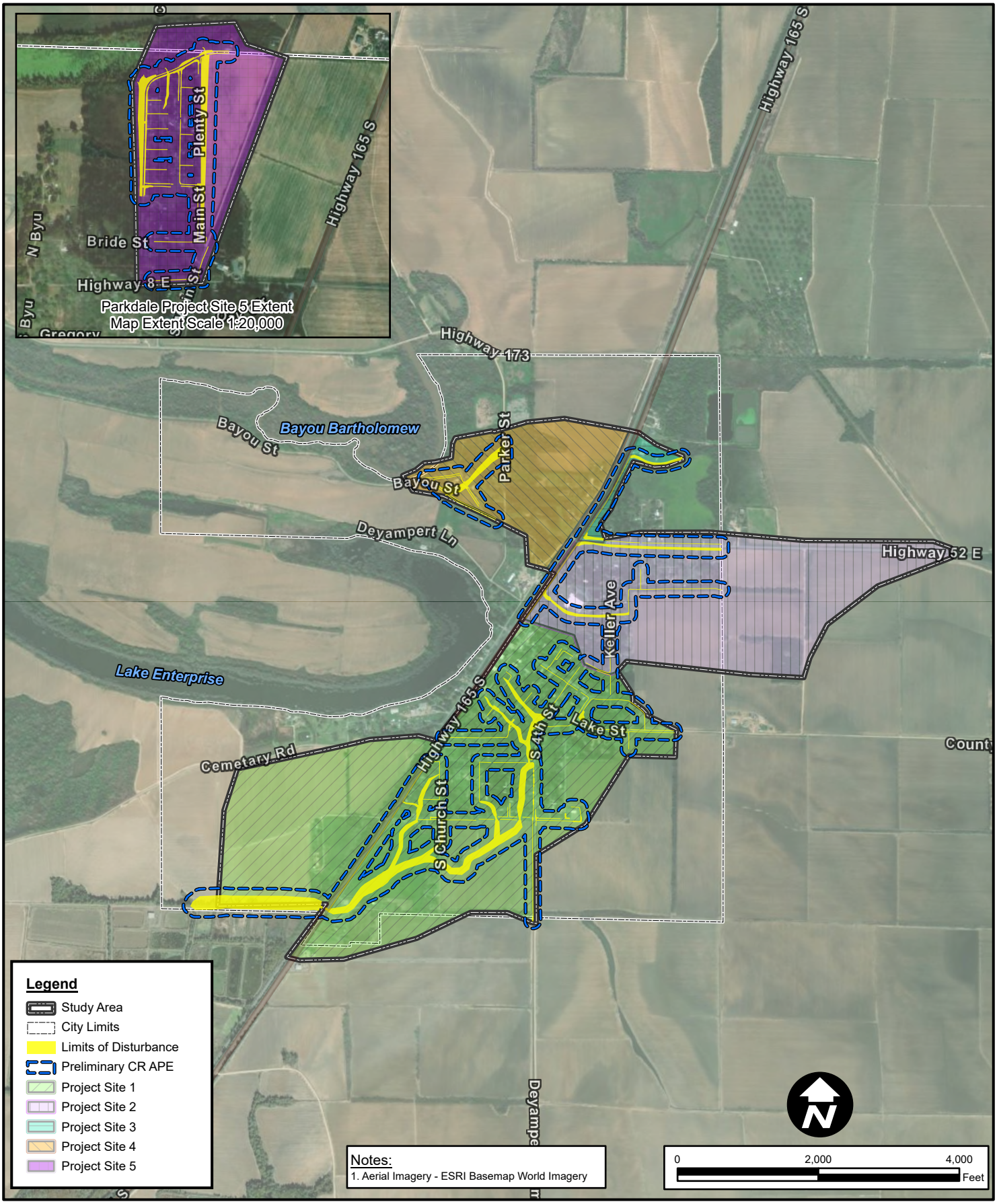
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

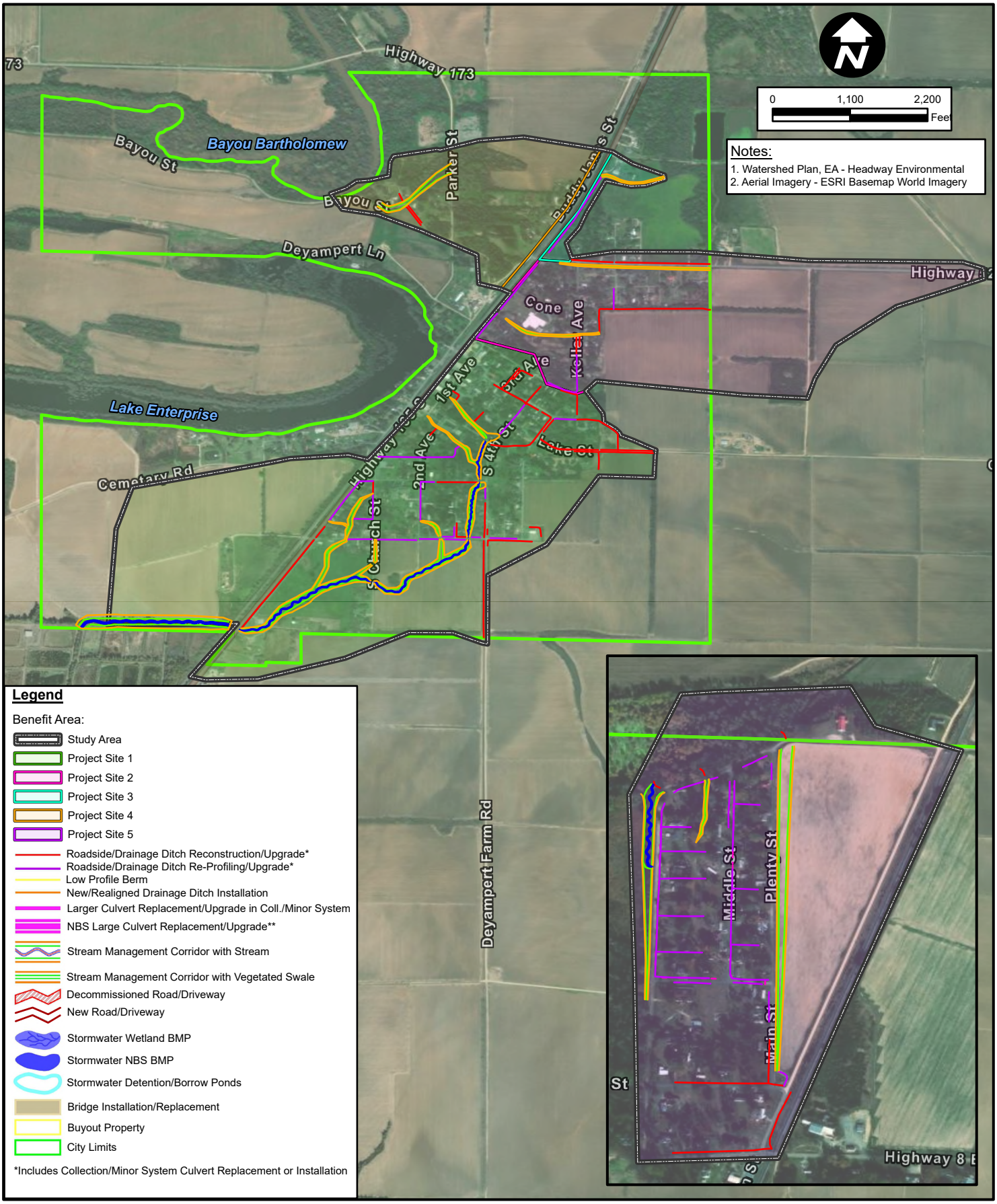
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
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Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Ms. Karen Brunso
Tribal Historic Preservation Officer
Chickasaw Nation
Post Office Box 1548
Ada, Oklahoma 74821

Dear Ms. Brunso:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Chickasaw Nation regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

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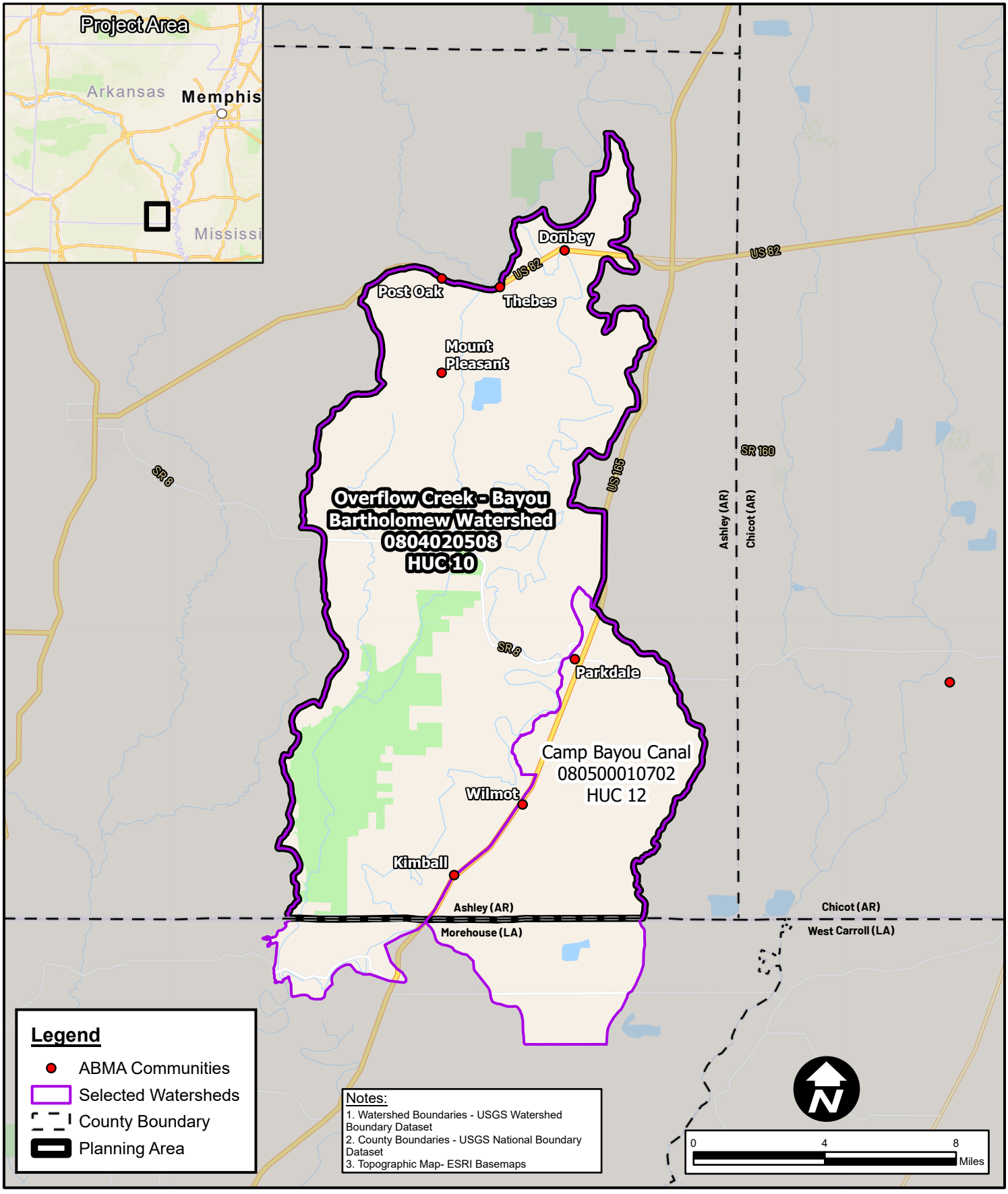
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USDA NRCS
United States Department of Agriculture
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PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

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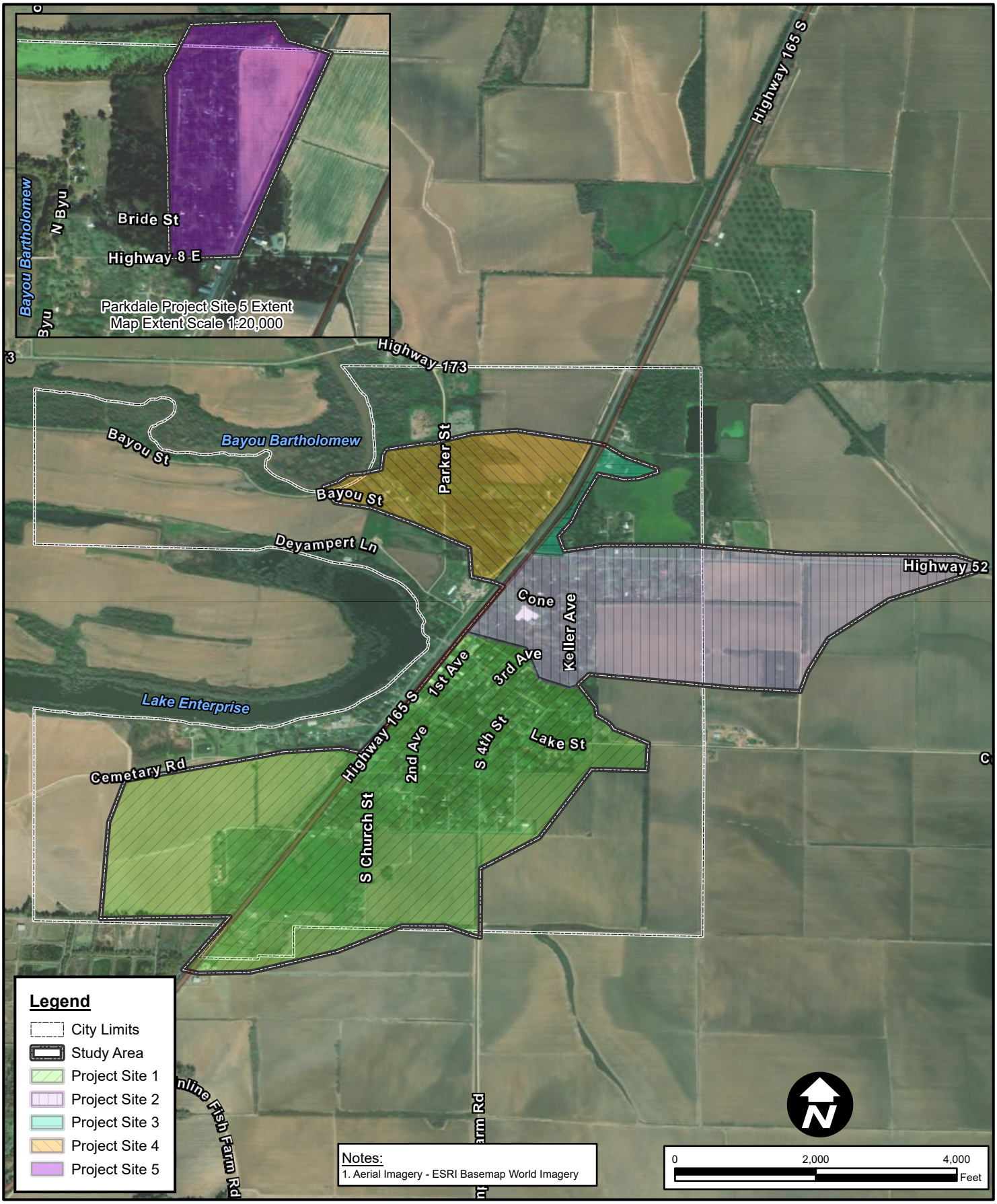
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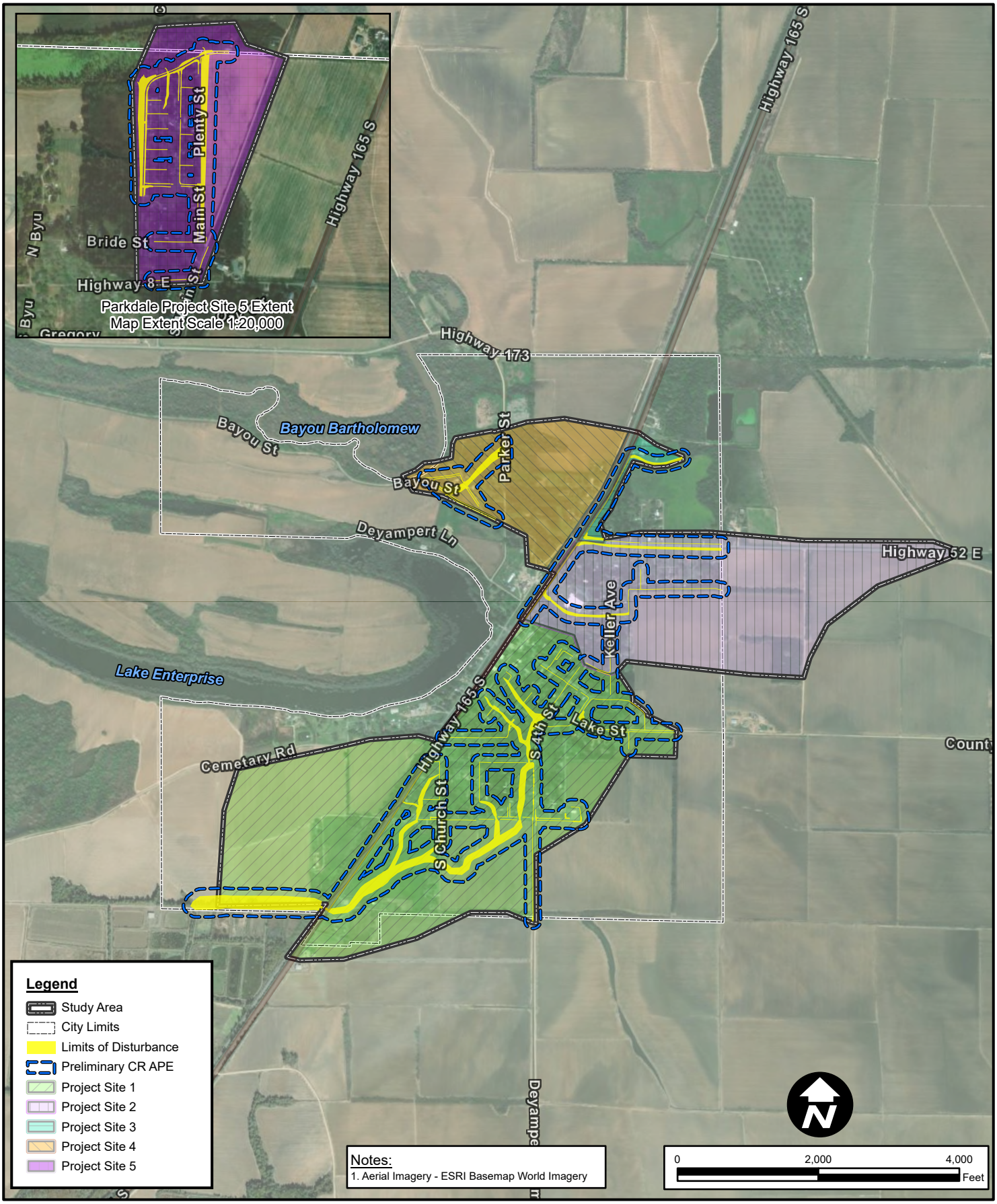
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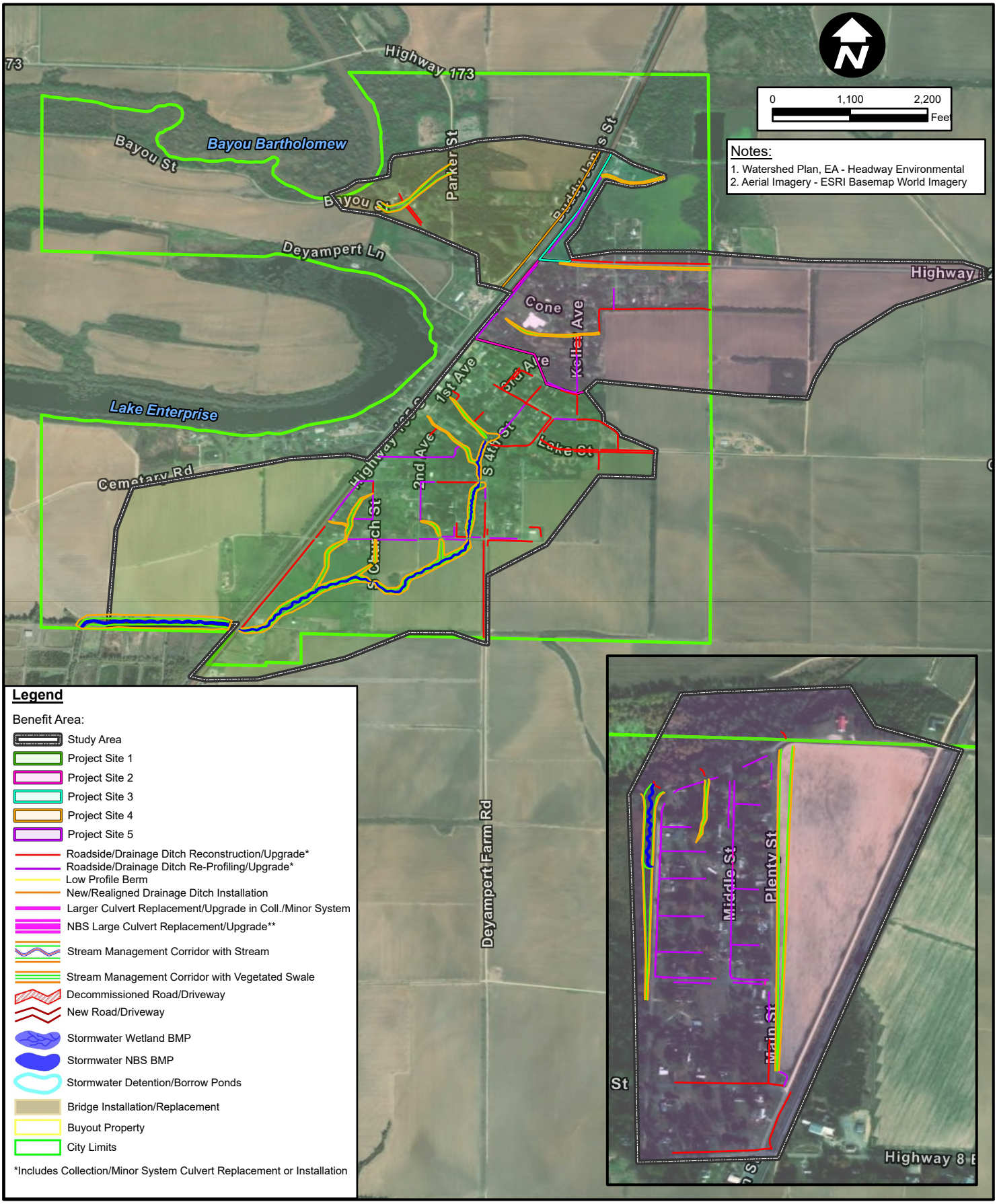
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Watershed Plan – Environmental Assessment
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Figure B-3

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USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Dr. Ian Thompson
Choctaw Nation Historic Preservation Department Director and Preservation Officer
Choctaw Nation of Oklahoma
Post Office Box 1210
Durant, Oklahoma 74702

Dear Dr. Thompson:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Continuing Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS initiated consultation with the Choctaw Nation of Oklahoma regarding this project in a letter dated October 19th, 2023 (included for your reference). We are writing to continue consultation under Section 106 of the National Historic Preservation Act (NHPA) regarding proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

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Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Initial Consultation and Scoping Letter
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Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
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Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201

October 19, 2023

Dr. Ian Thompson, Tribal Historic Preservation Officer & NAGPRA Program Coordinator
Madison Currie, NHPA Section 106 Review Coordinator
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74702-1210

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Dr. Thompson and Ms. Currie:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

To satisfy the public involvement and consultation requirements for Section 106 of the National Historic Preservation Act (NHPA), USDA-NRCS is interested in learning whether the project has the potential to impact any significant archaeological, religious or cultural sites so that USDA-NRCS can factor that into its identification and evaluation of feasible alternatives during the NEPA documentation process.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and surrounding small communities in Ashley County, Arkansas, which lie within one 12-digit and one 10-digit HUC watersheds. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm (central standard time), November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot, AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Scott Smallwood of my staff at Christopher.Smallwood@usda.gov or via phone at 501-237-3142.

RANDY CHILDRESS

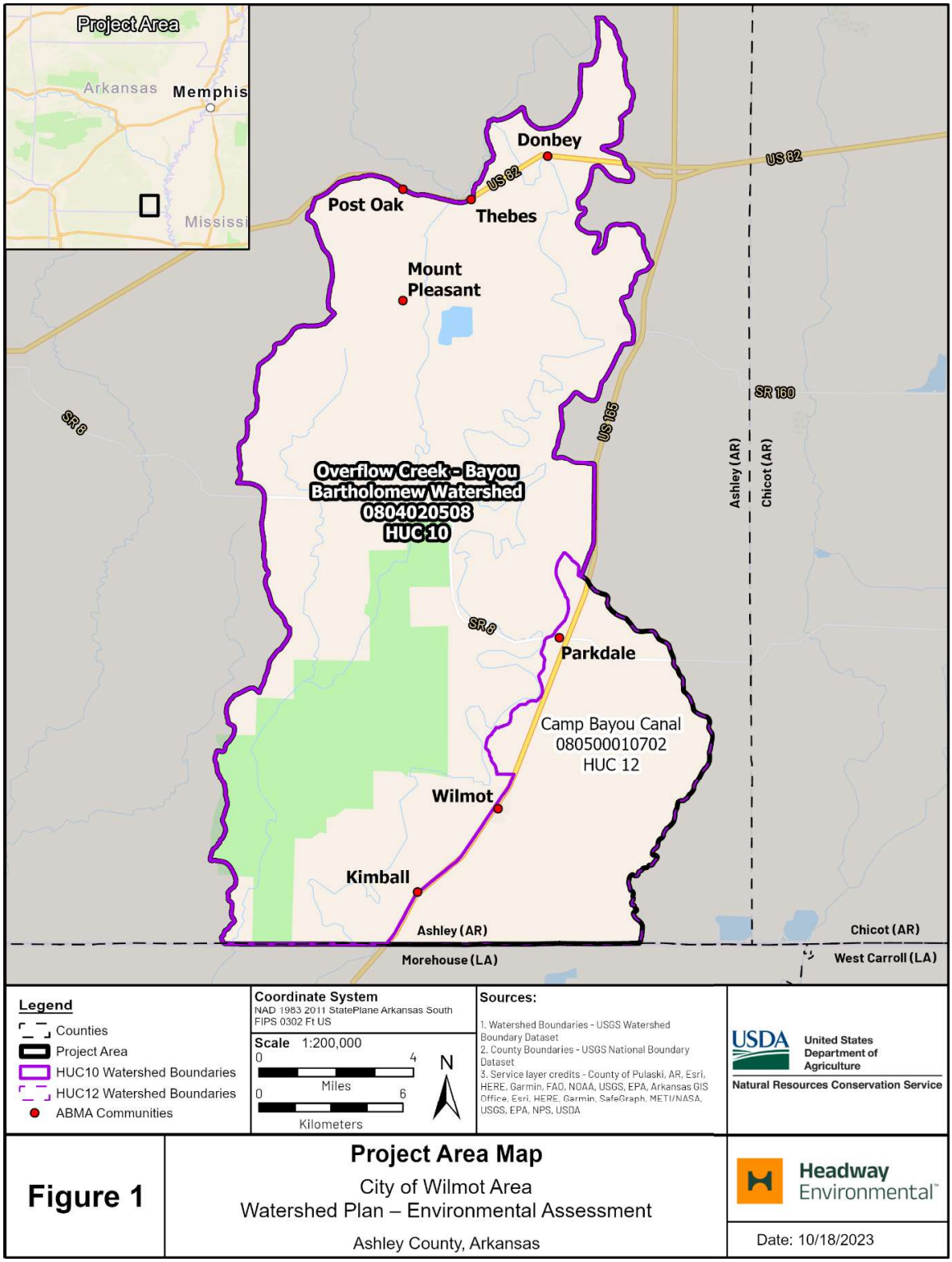
Digitally signed by RANDY CHILDRESS
Date: 2023.10.25 12:48:30 -05'00'

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Location Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

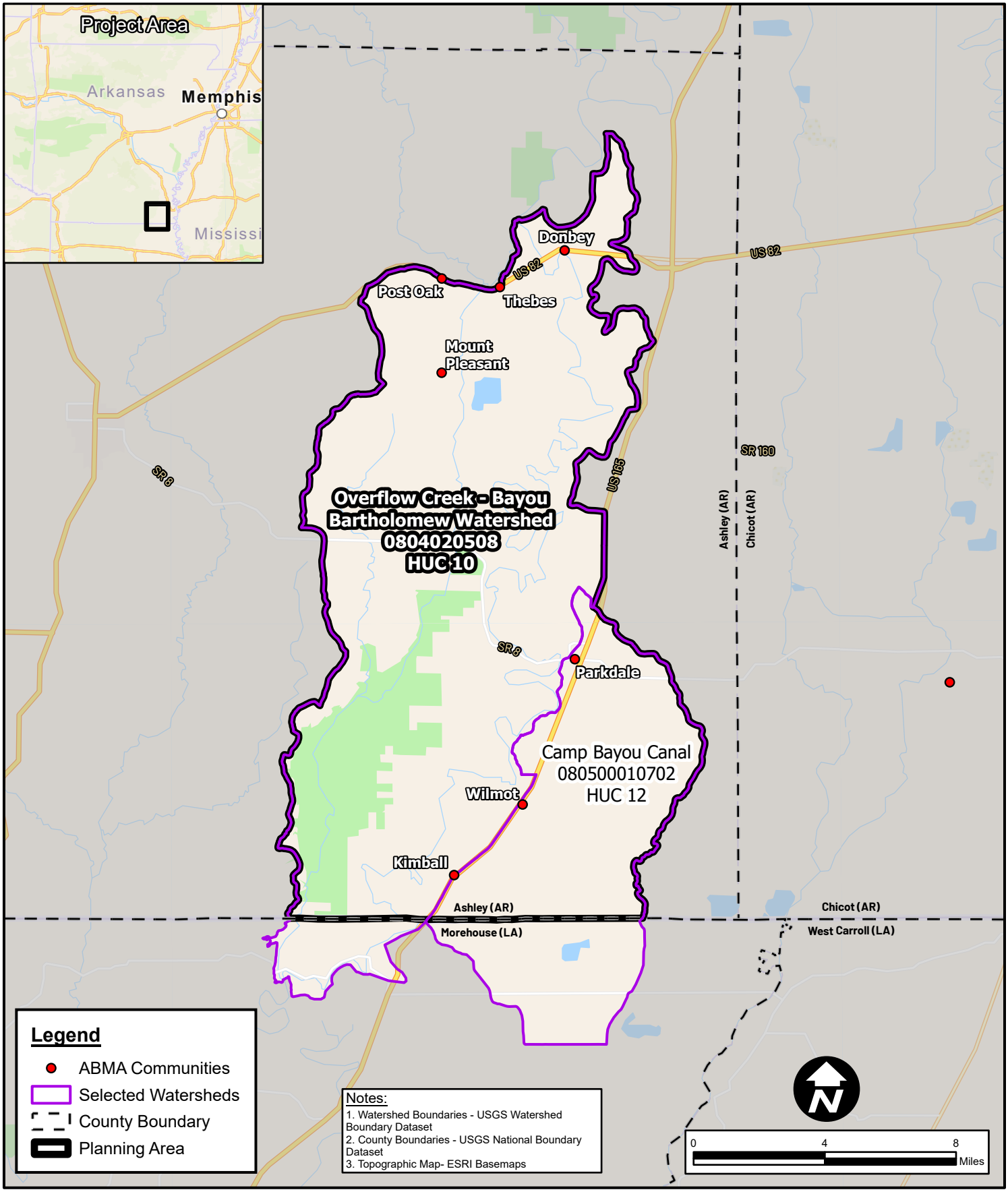
November 16, 2023
6:00 – 7:45 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will include a presentation followed by an open-house, come-and-go forum, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

Additionally, these archaeological sites and AHPP resources are located within a one mile radius of these project sites: [redacted]

Alternative 6A/MNMB Alternative: Combined NBS-Focused Alternative

Alternative 6A/Maximum Net Monetized Benefit (MNMB) Alternative combines the Nature Based Solutions (NBS)-Focused Alternatives for each of the five Project Sites. Alternative 6A includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
- Install 19,929 LF of stream management corridors (SMCs) in Wilmot and Parkdale, including a total of 13,089 LF of vegetated swale and 6,840 LF of national channel design (NCD) stream, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels.
- Decommission and remove 0.3 ac of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 structures.

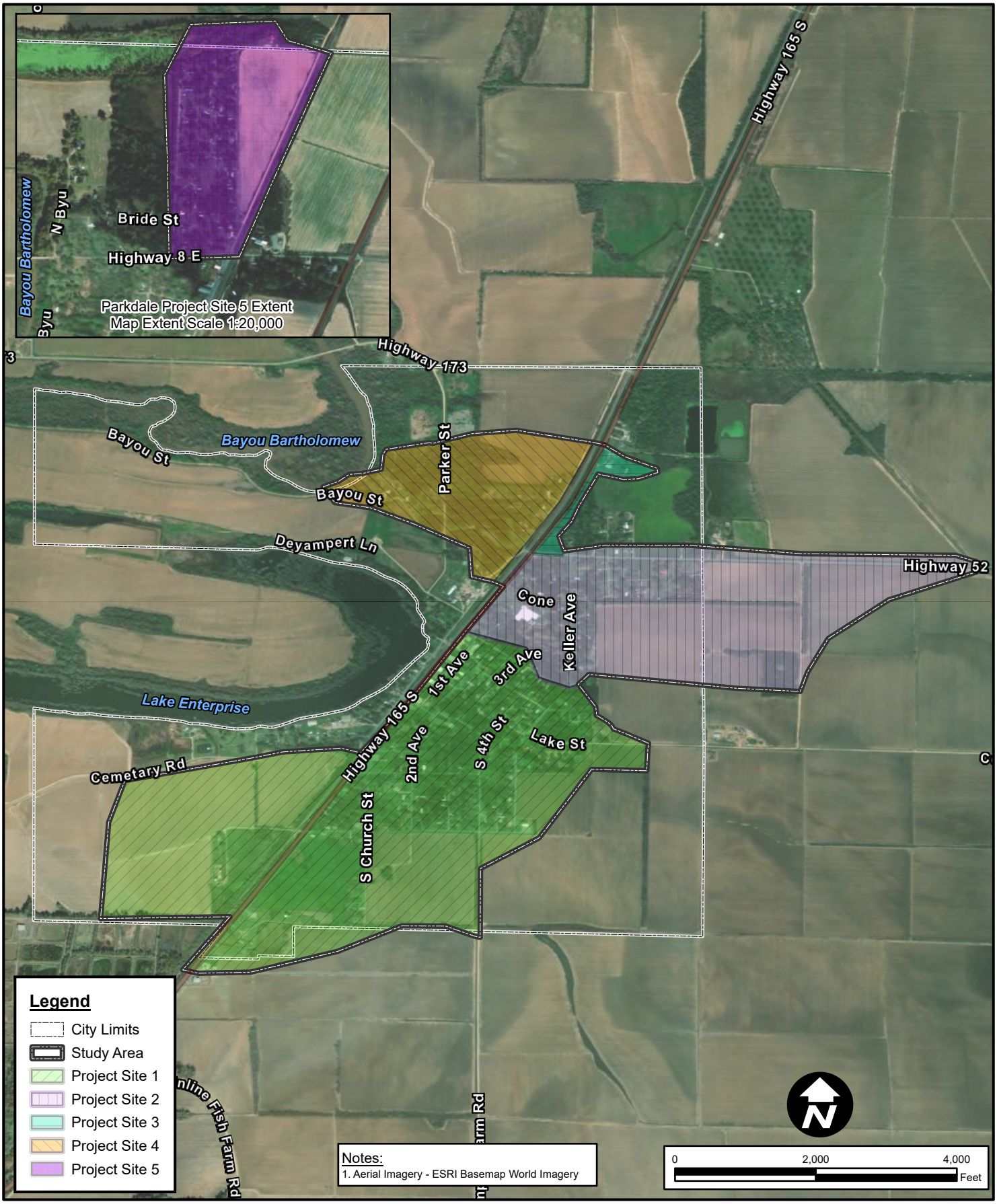
Alternative 6A will provide flood-risk reduction and flood-damage mitigation using NBS-focused measures wherever possible and appropriate. A combination of onsite/local stormwater bioretention cells and stormwater quality wetland (SWQs), upgraded stormwater collection/minor drainage systems, and the installation of SMCs will substantially reduce the frequency and severity of street and property flooding in the Study Area.

Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
- Install 19,929 LF of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels.
- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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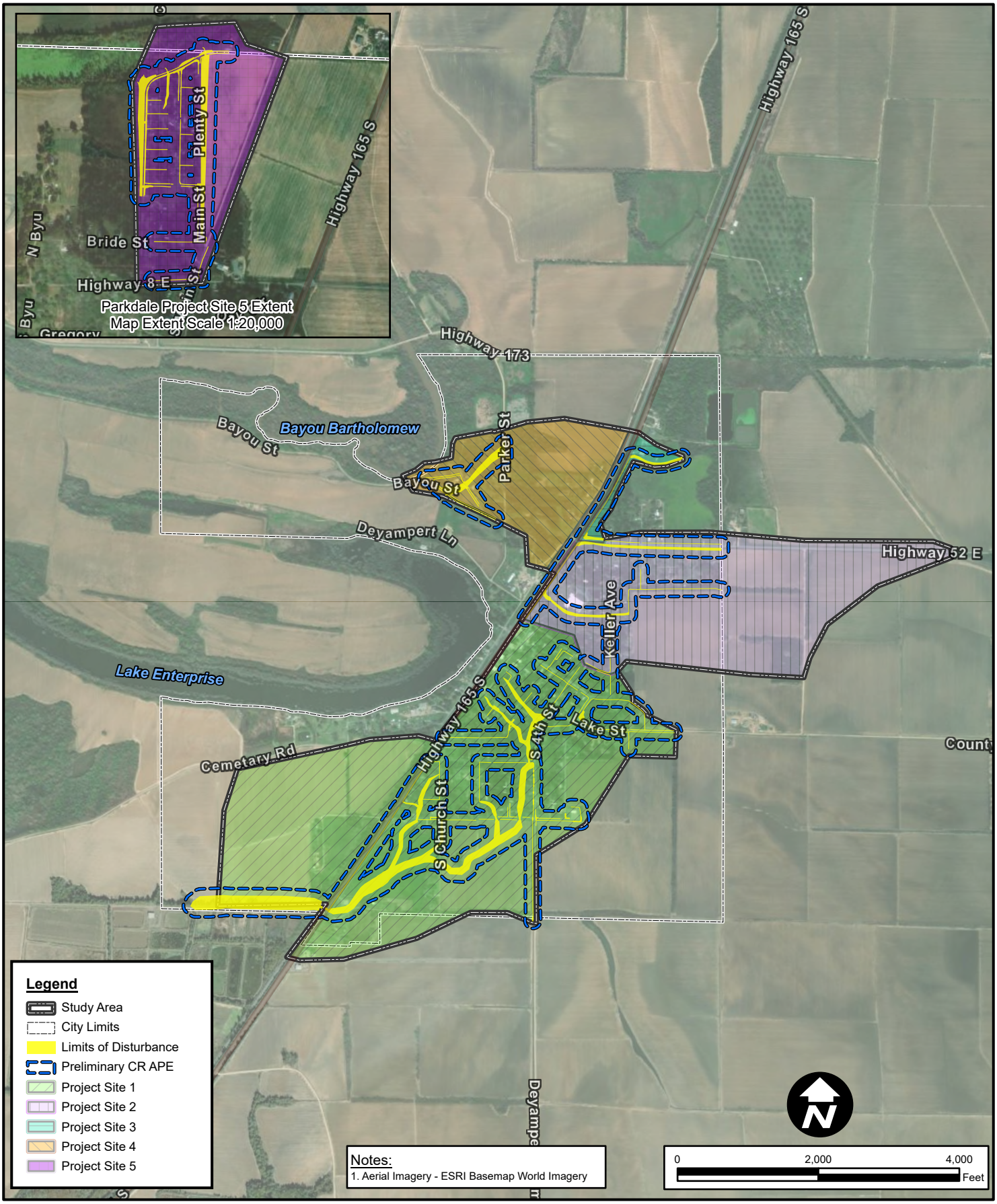
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

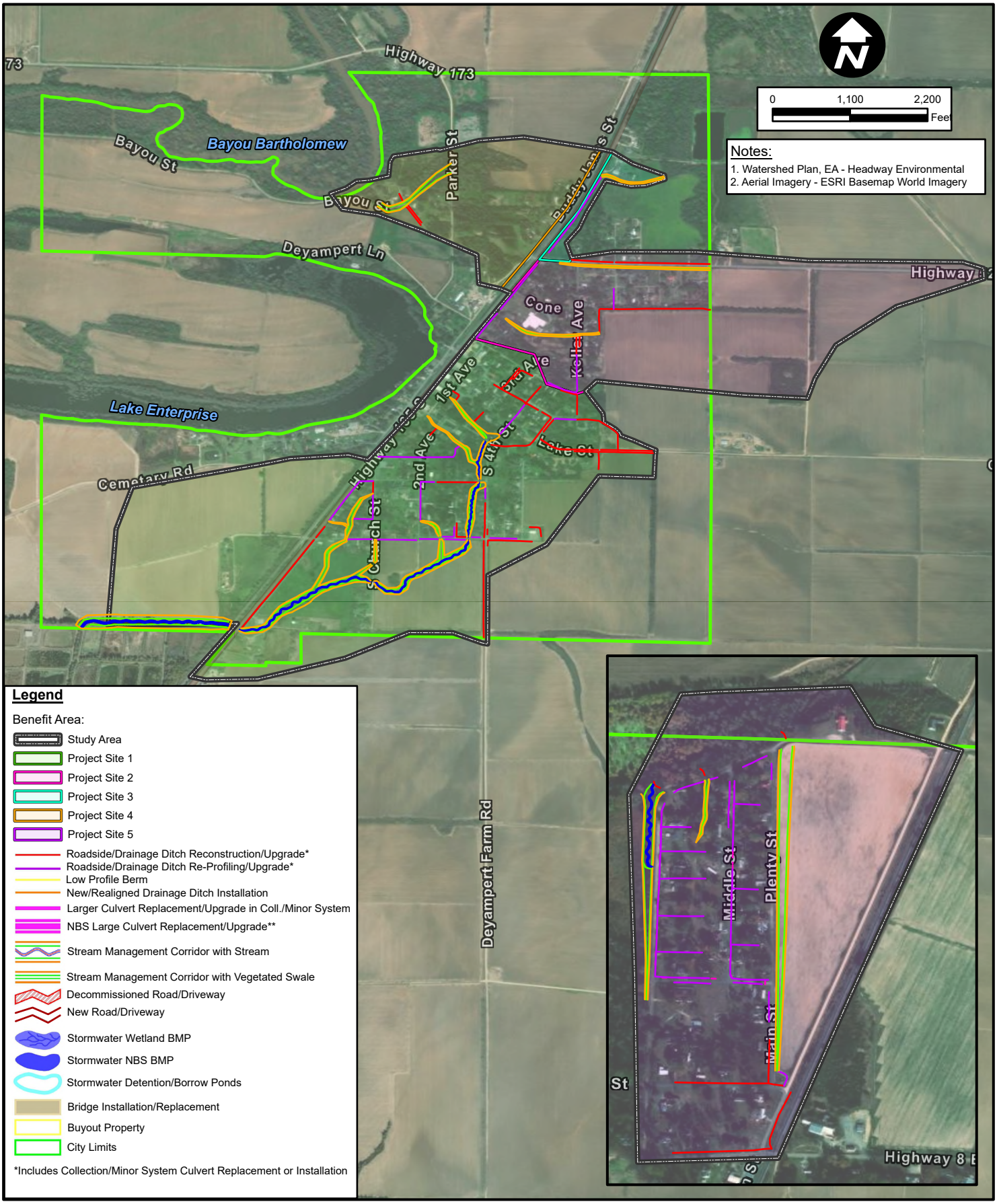
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Mr. Kristian Poncho
Tribal Historic Preservation Officer
Coushatta Tribe of Louisiana
Post Office Box 10
Elton, Louisiana 70532

Dear Mr. Poncho:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Continuing Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS initiated consultation with the Coushatta Tribe of Louisiana regarding this project in a letter dated October 19th, 2023 (included for your reference). We are writing to continue consultation under Section 106 of the National Historic Preservation Act (NHPA) regarding proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Coushatta Tribe of Louisiana in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

The NRCS respects the authority of the Coushatta Tribe of Louisiana as a sovereign nation. If at any time you wish to formally share your interests, recommendations, and concerns directly with NRCS, please notify the State Conservation Engineer, Stephen Smedley at Stephen.Smedley@usda.gov, (501) 301-3141 and Resource Conservationist, Bill Kinkaid William.Kinkaid@usda.gov, (501) 301-3127.

Sincerely,



Amanda J. Mathis
State Conservationist

Enclosures:
Initial Consultation and Scoping Letter
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201

October 19, 2023

Dr. Linda Langley, Tribal Historic Preservation Officer
Kassie Dawsey, Section 106 Coordinator
Coushatta Tribe of Louisiana
P.O. Box 10
Elton, LA 70532

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Dr. Langley and Ms. Dawsey:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

To satisfy the public involvement and consultation requirements for Section 106 of the National Historic Preservation Act (NHPA), USDA-NRCS is interested in learning whether the project has the potential to impact any significant archaeological, religious or cultural sites so that USDA-NRCS can factor that into its identification and evaluation of feasible alternatives during the NEPA documentation process.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and surrounding small communities in Ashley County, Arkansas, which lie within one 12-digit and one 10-digit HUC watersheds. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm (central standard time), November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot, AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Scott Smallwood of my staff at Christopher.Smallwood@usda.gov or via phone at 501-237-3142.

RANDY CHILDRESS

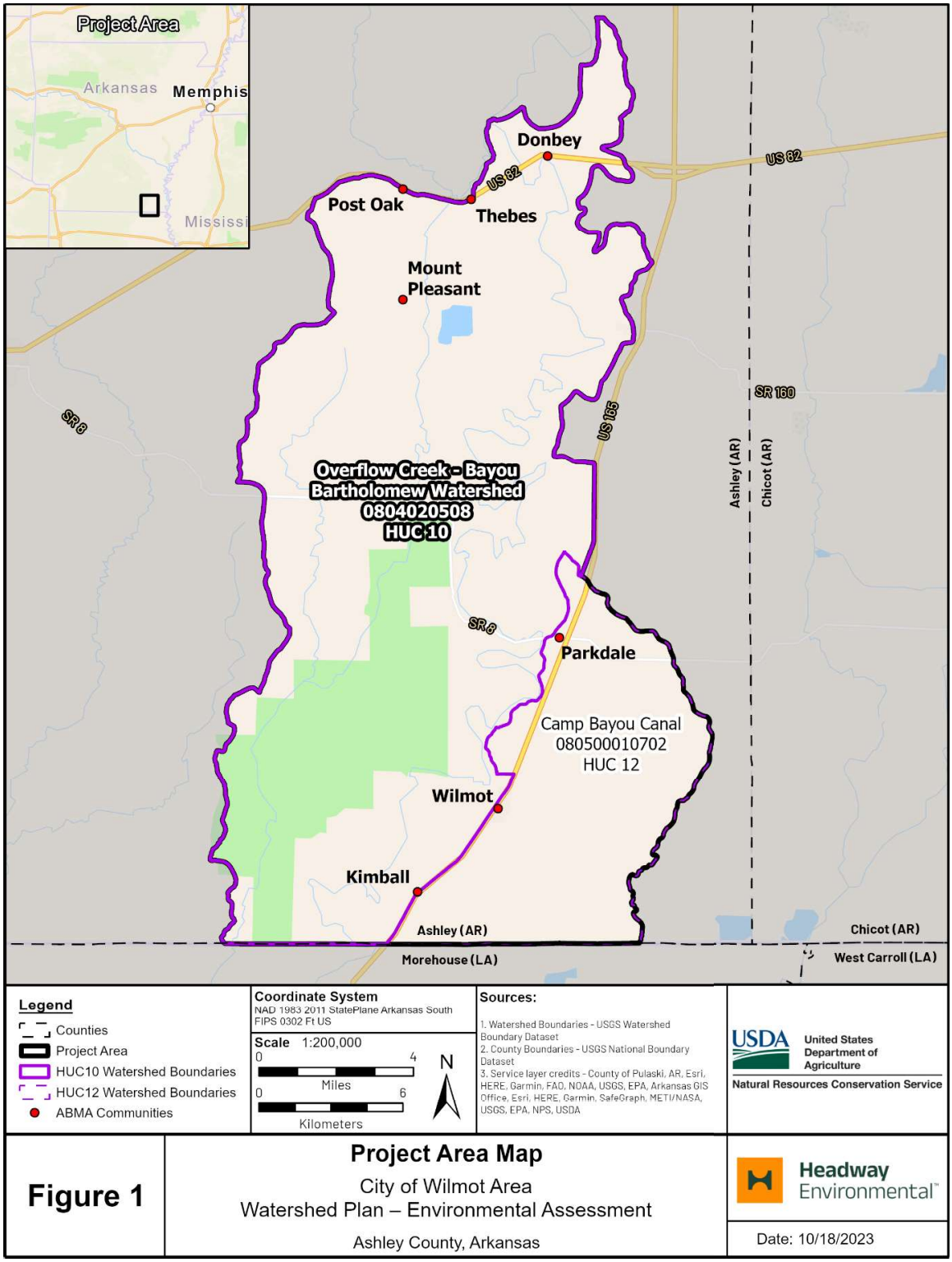
Digitally signed by RANDY CHILDRESS
Date: 2023.10.25 12:49:19 -05'00'

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Location Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

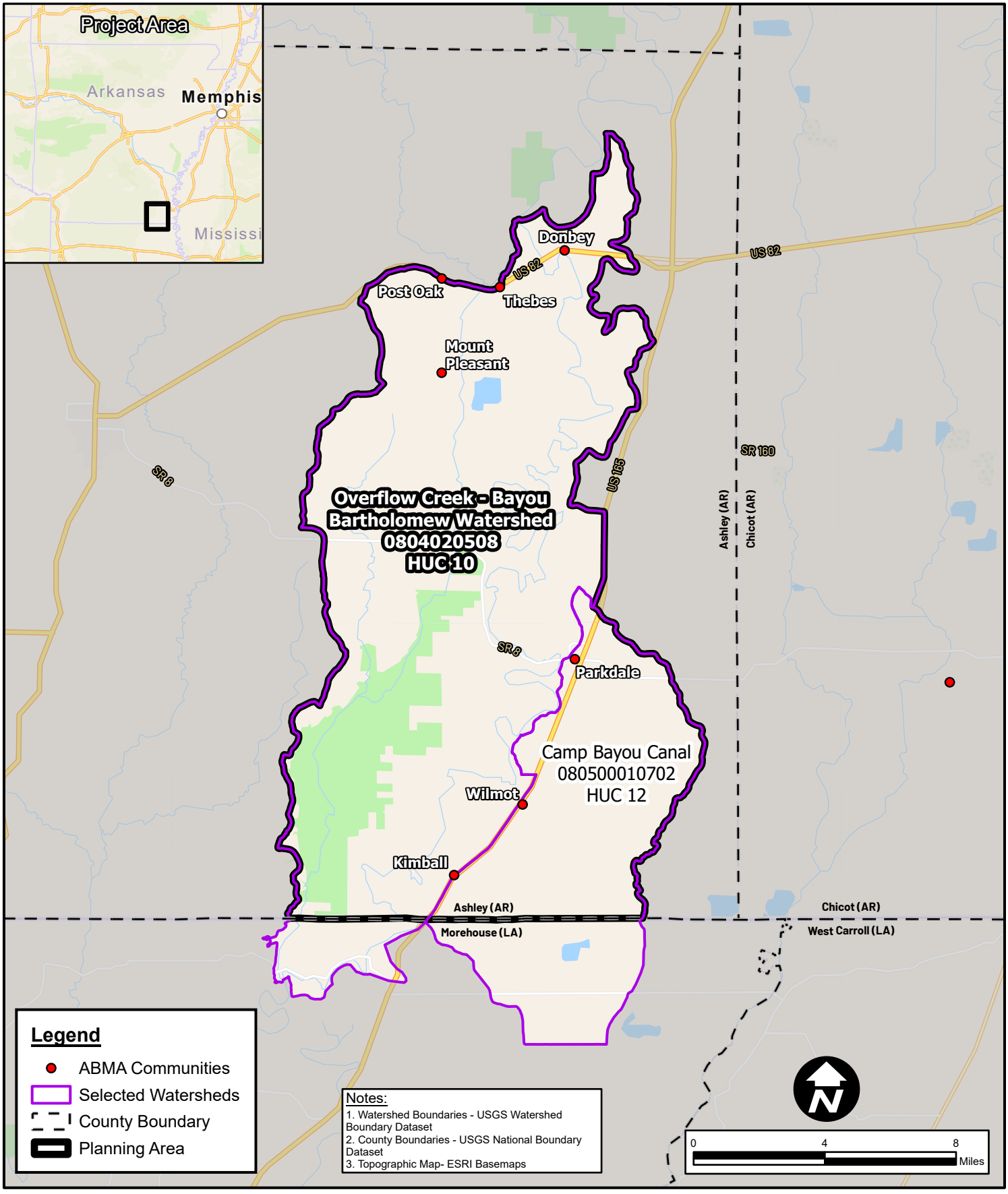
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Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

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Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

Additionally, these archaeological sites and AHPP resources are located within a one mile radius of these project sites: [redacted]

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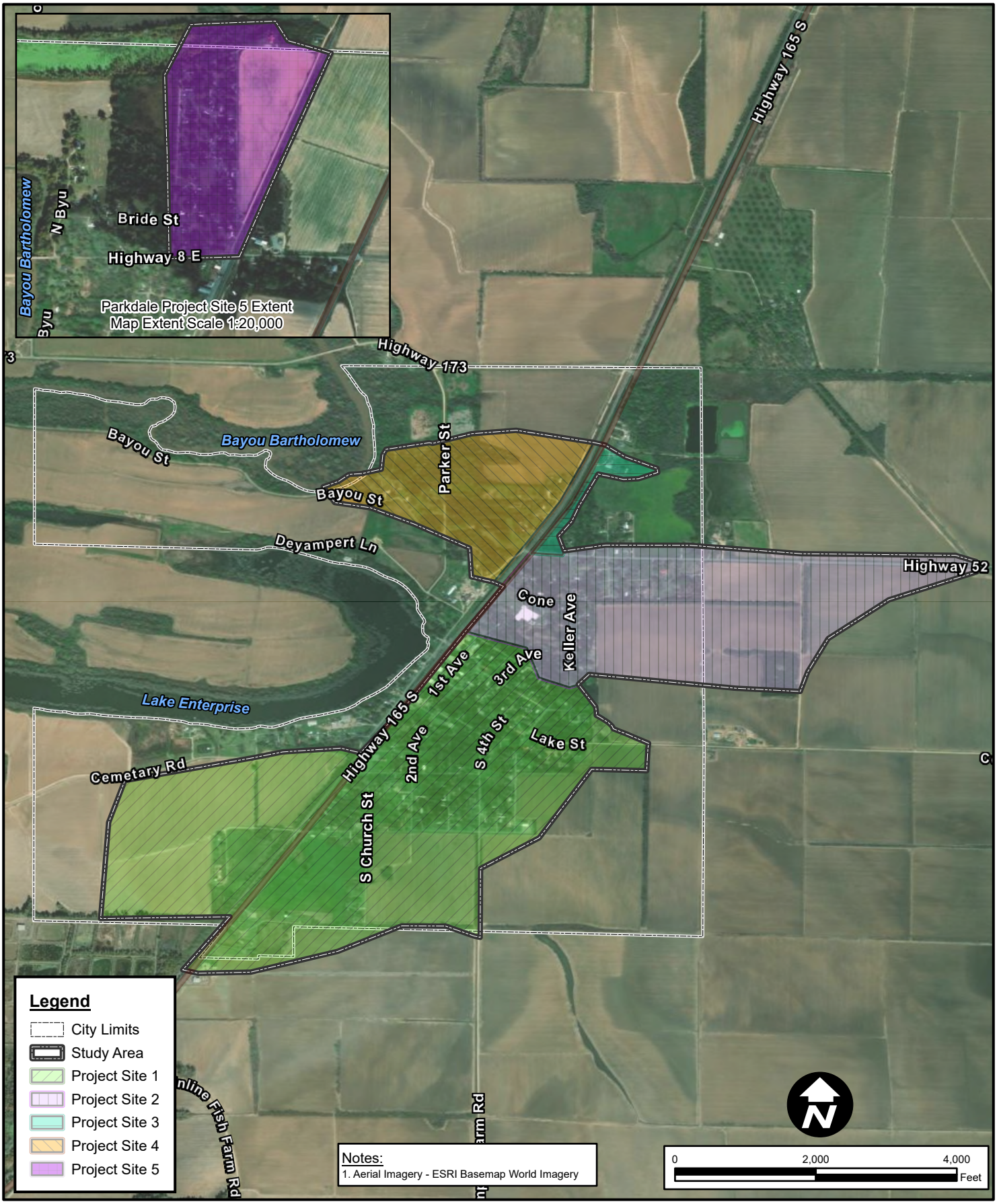
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Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
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- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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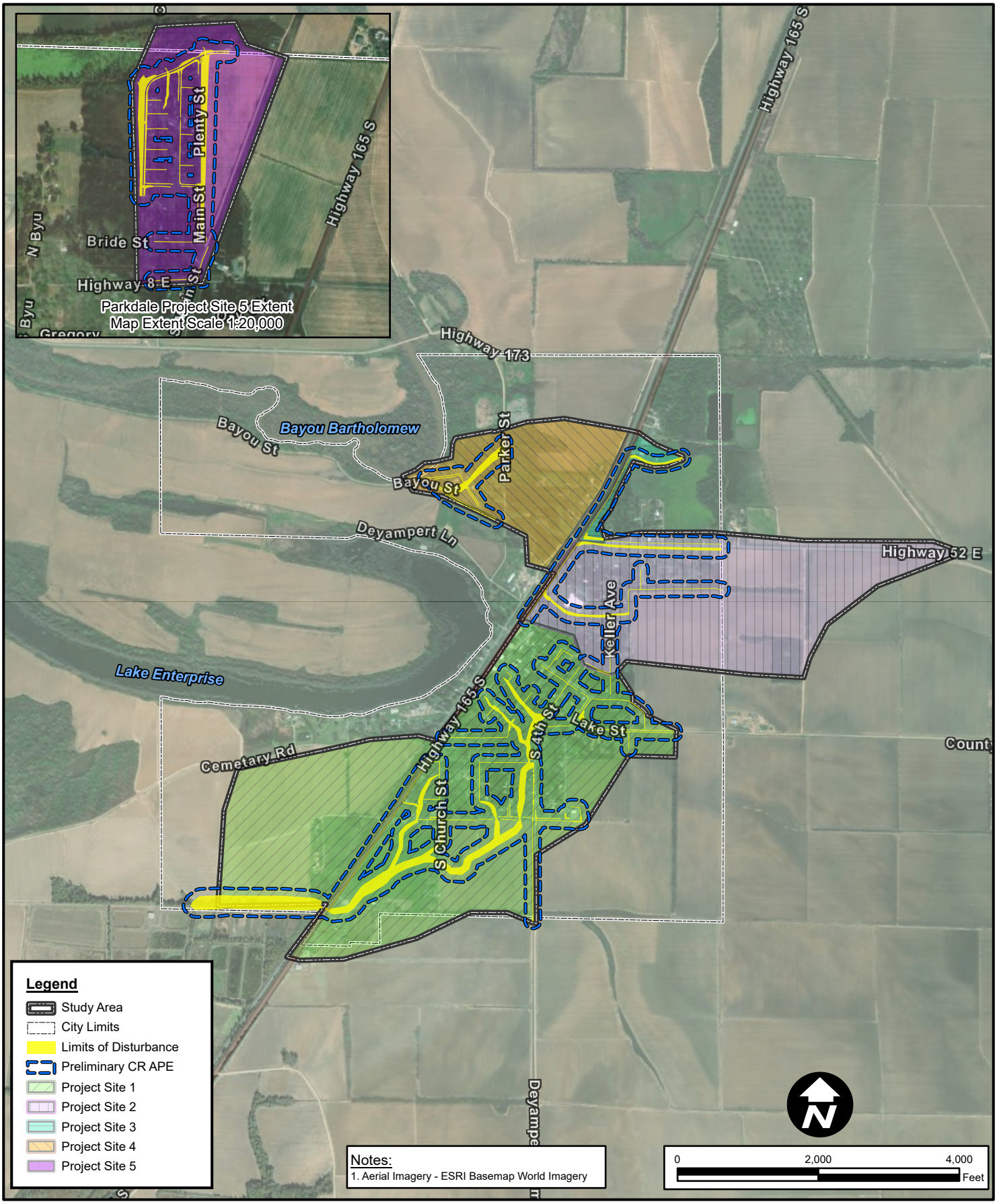
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

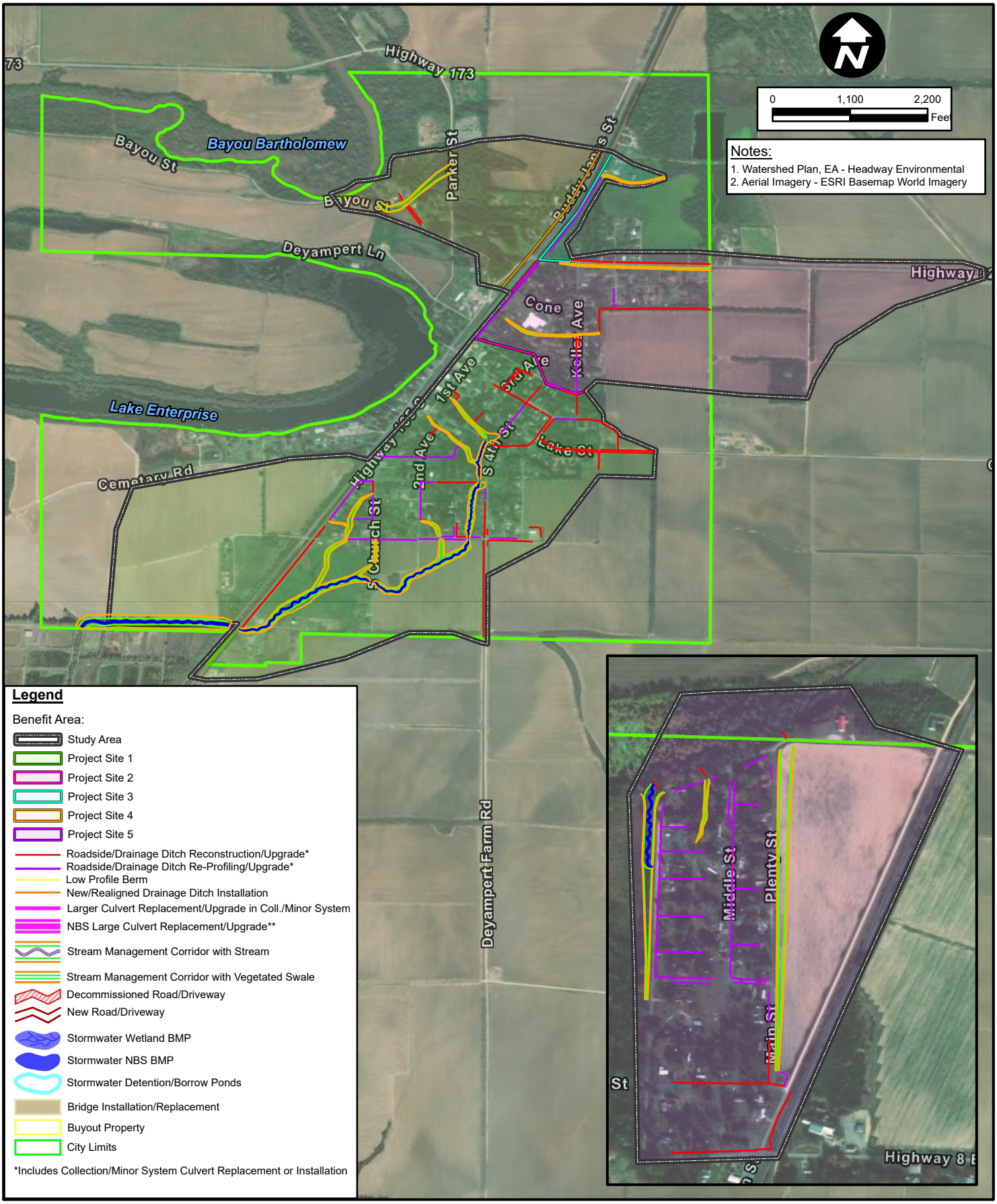
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Ms. Katelyn Lucas
Tribal Historic Preservation Officer
Delaware Nation
Post Office Box 825
Anadarko, Oklahoma 73005

Dear Ms. Lucas:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Delaware Nation regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

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NRCS recognizes the important role of the Delaware Nation in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

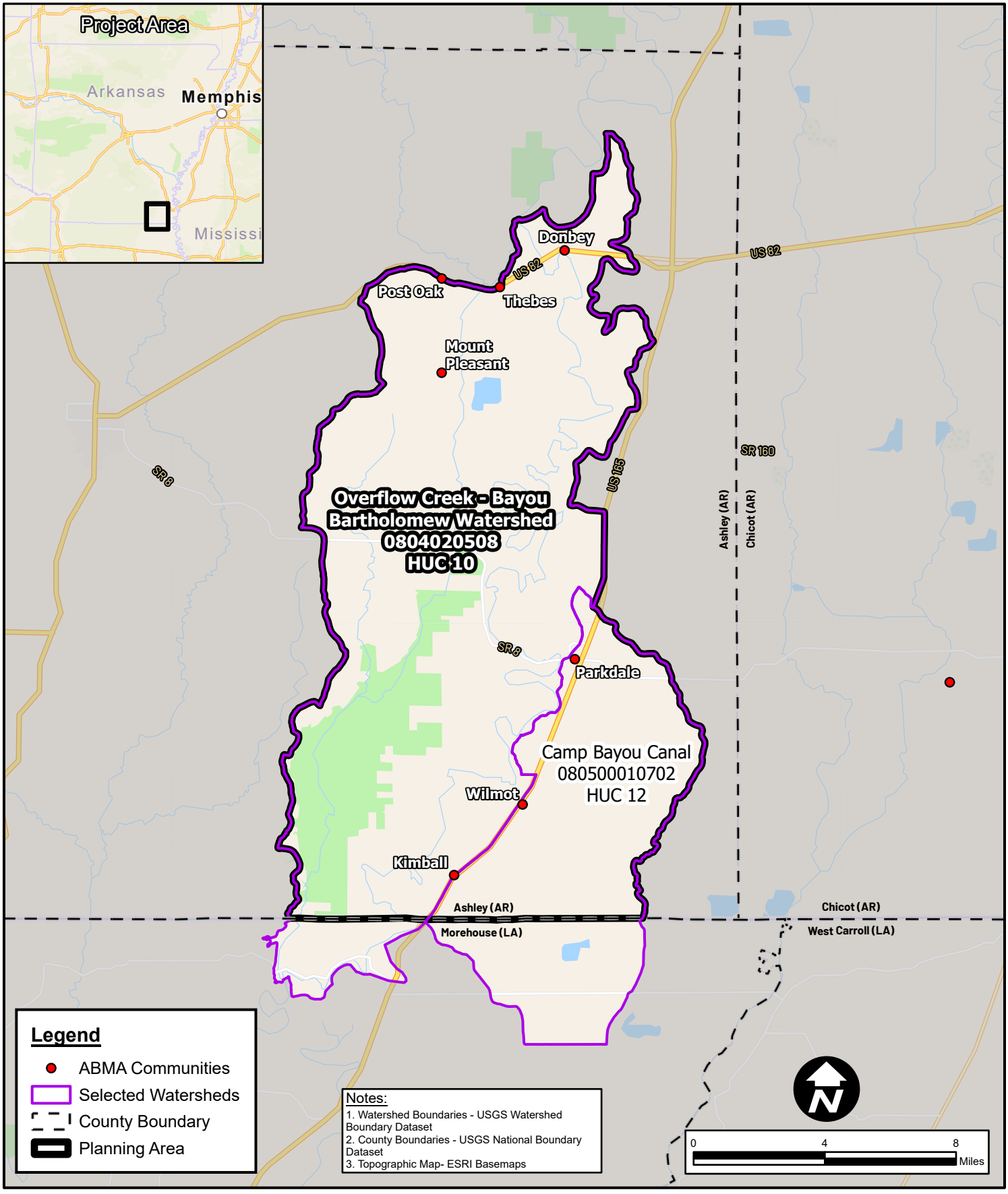
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Sincerely,

Amanda J. Mathis
State Conservationist

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Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
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USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

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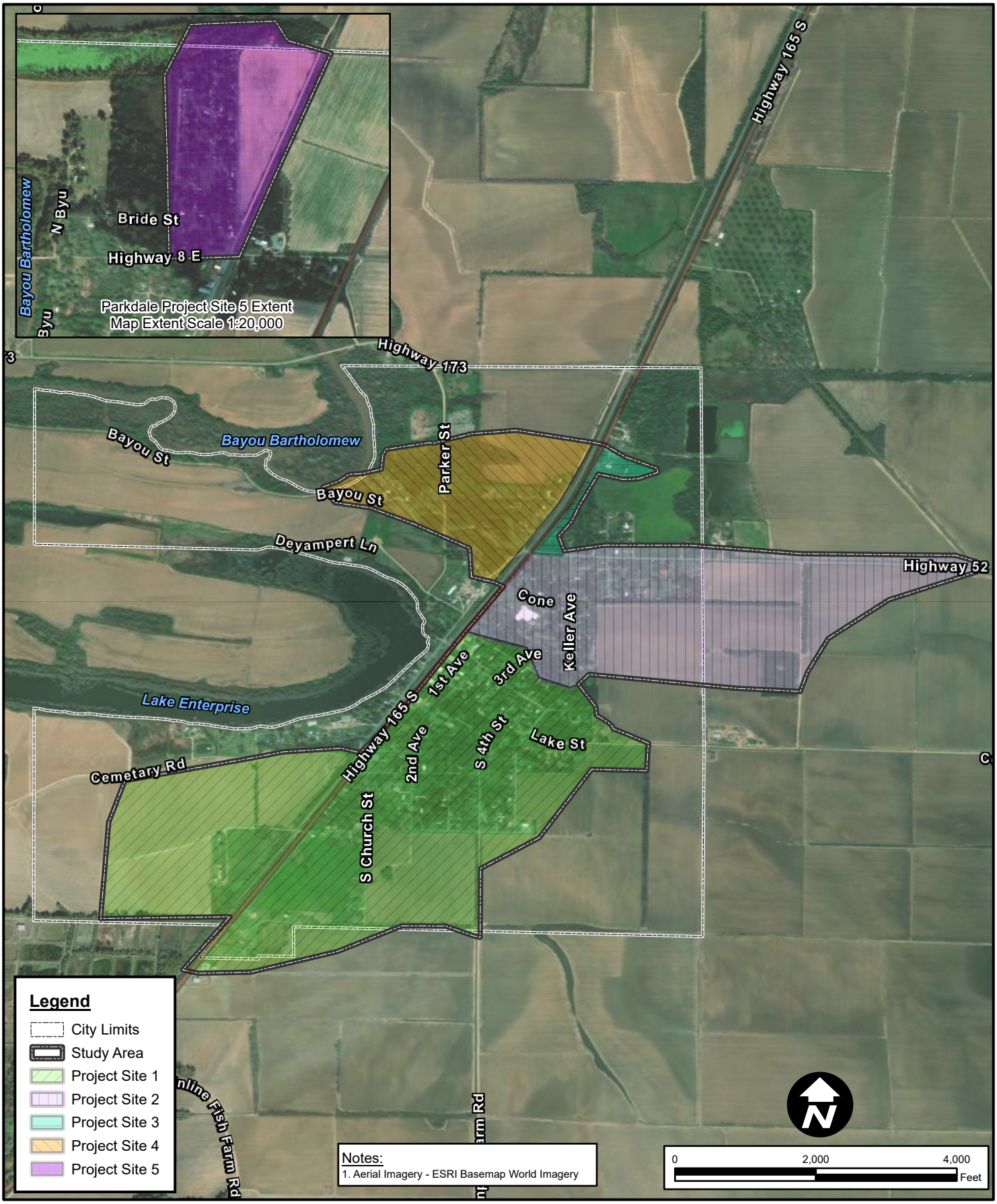
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Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

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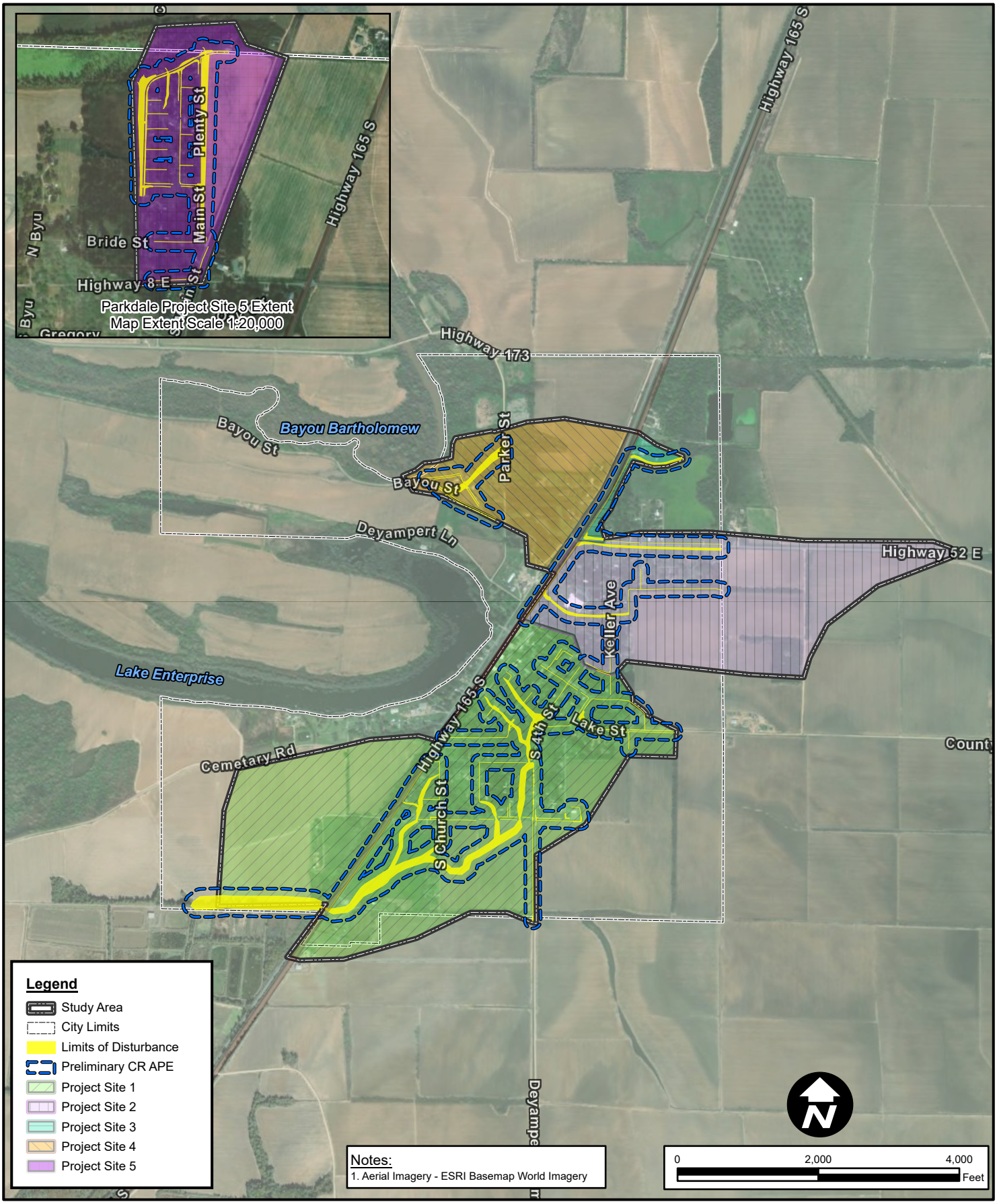
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

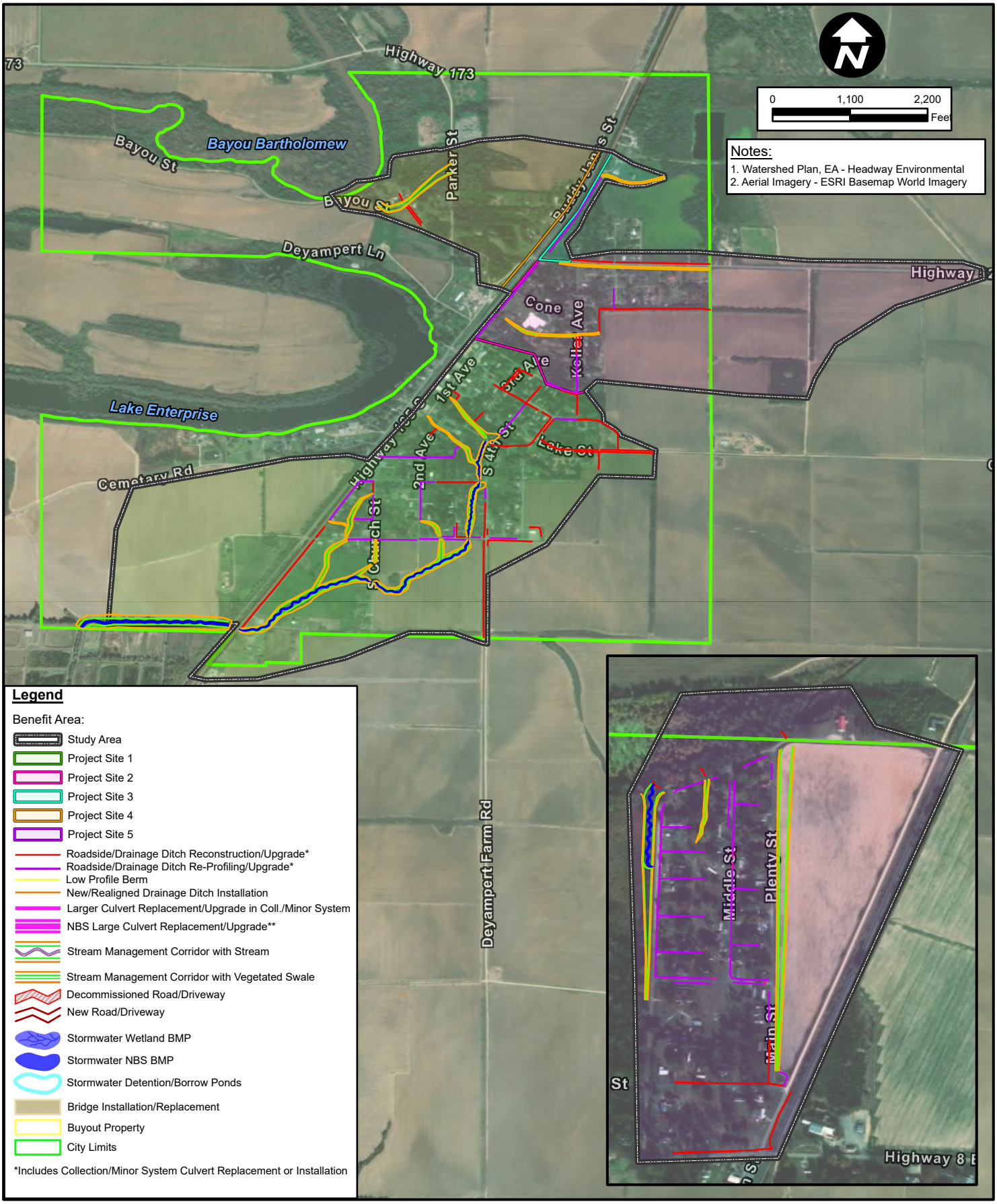
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

VIA EMAIL

SEP 0 1 2026

Ms. Lora Nuckolls
Tribal Historic Preservation Officer
Eastern Shawnee Tribe of Oklahoma
12755 South 705 Road
Wyandotte, Oklahoma 74370

Dear Ms. Nuckolls:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Eastern Shawnee Tribe of Oklahoma regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Eastern Shawnee Tribe of Oklahoma in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

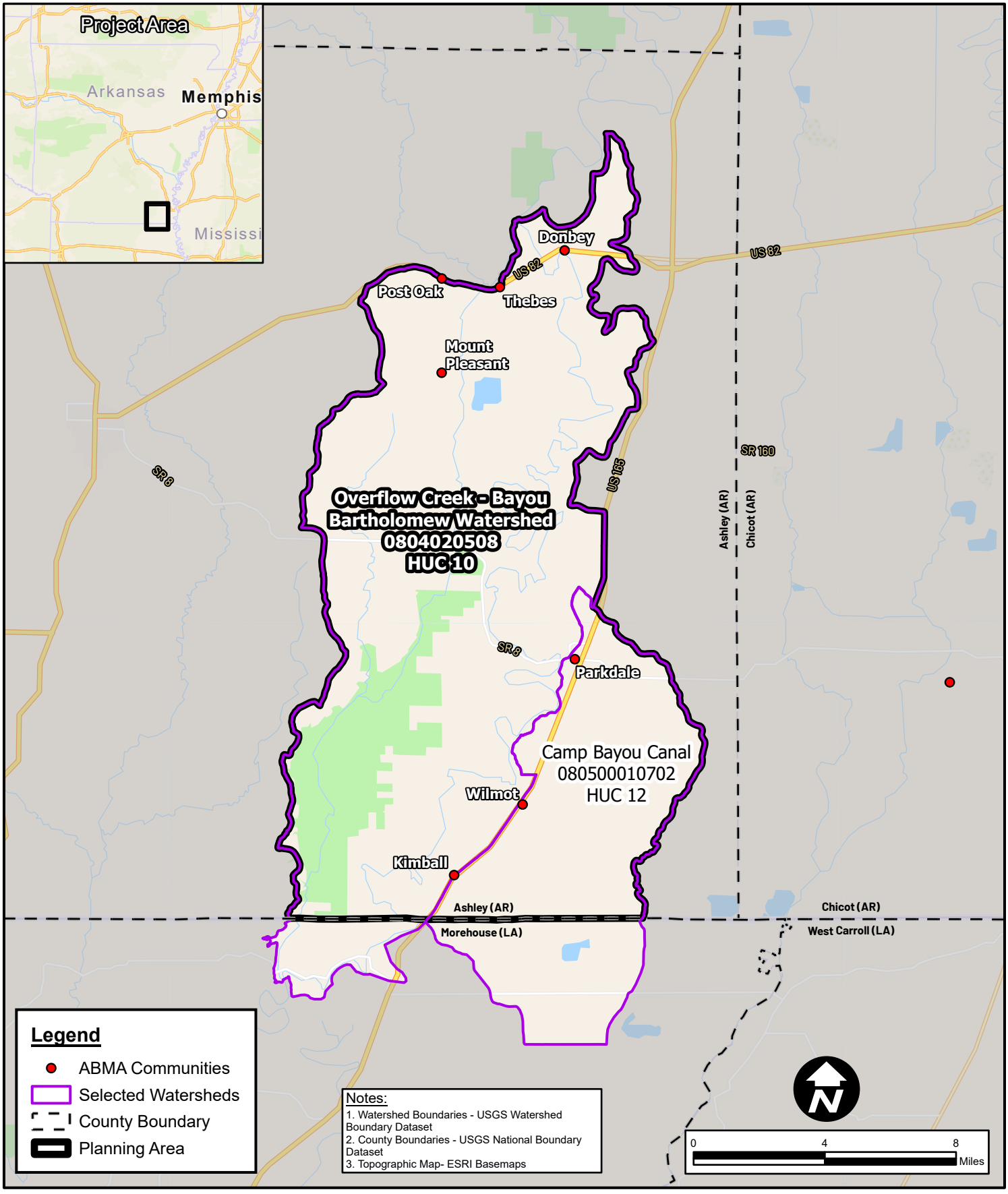
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Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

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Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
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United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

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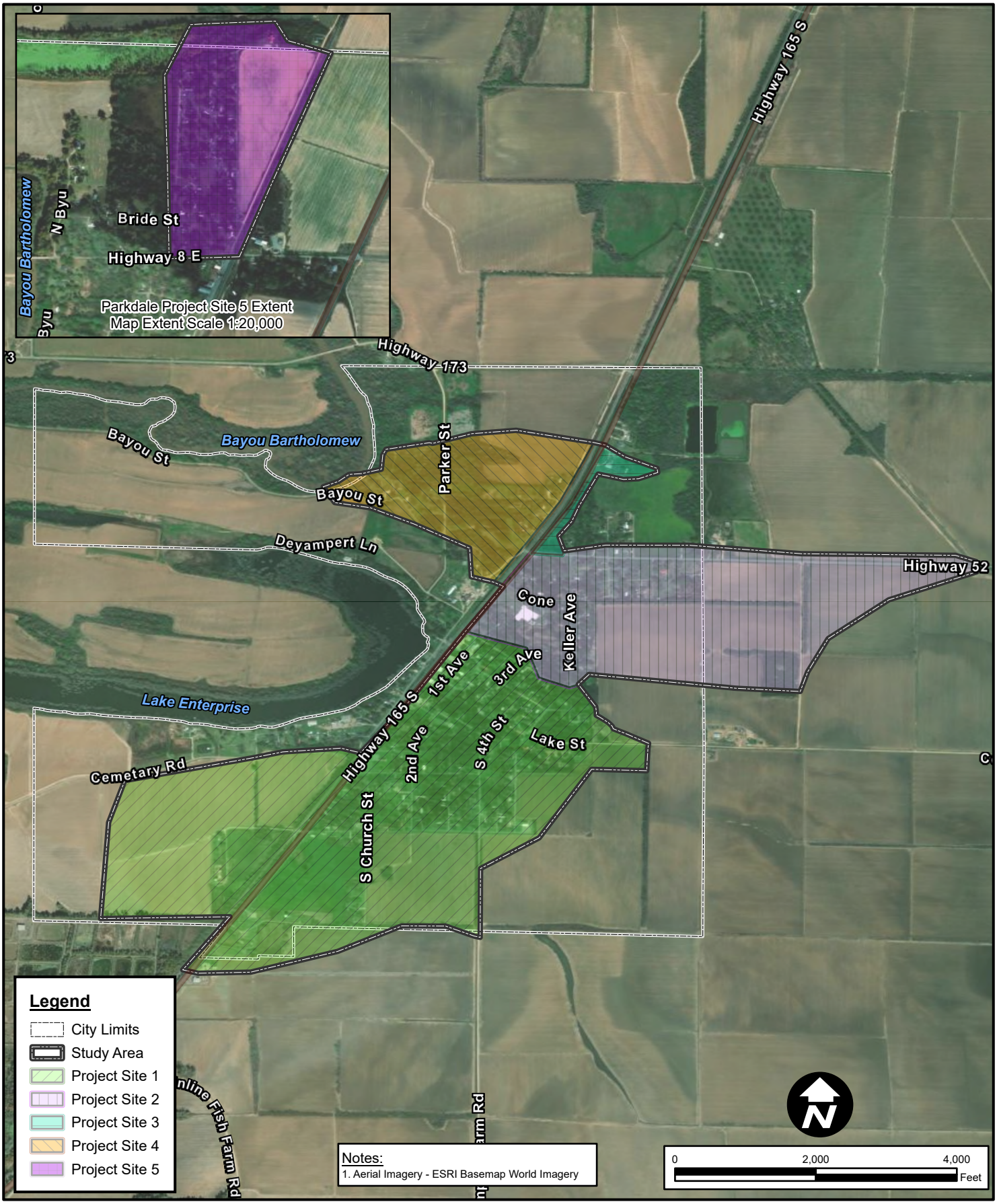
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Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

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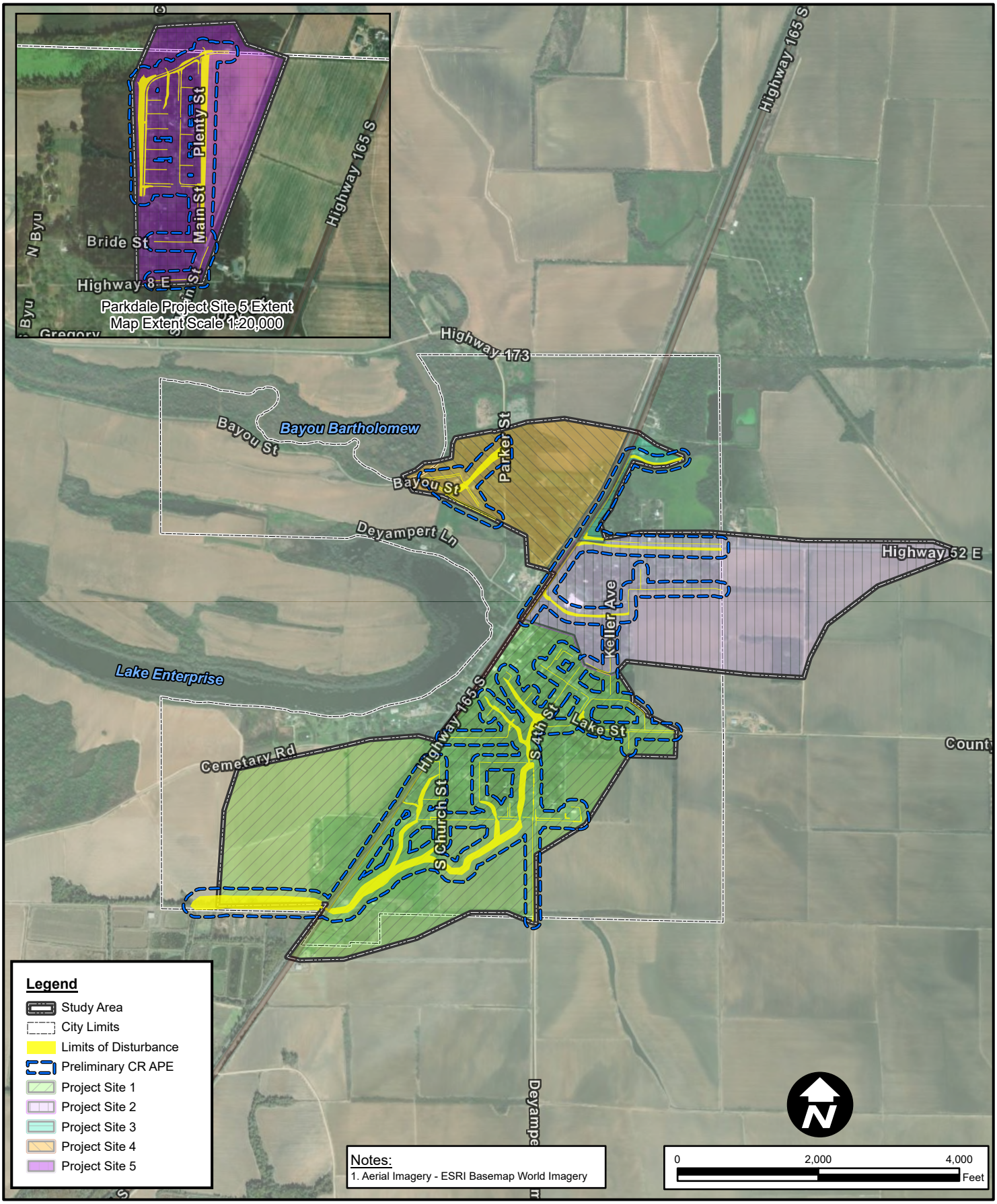
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

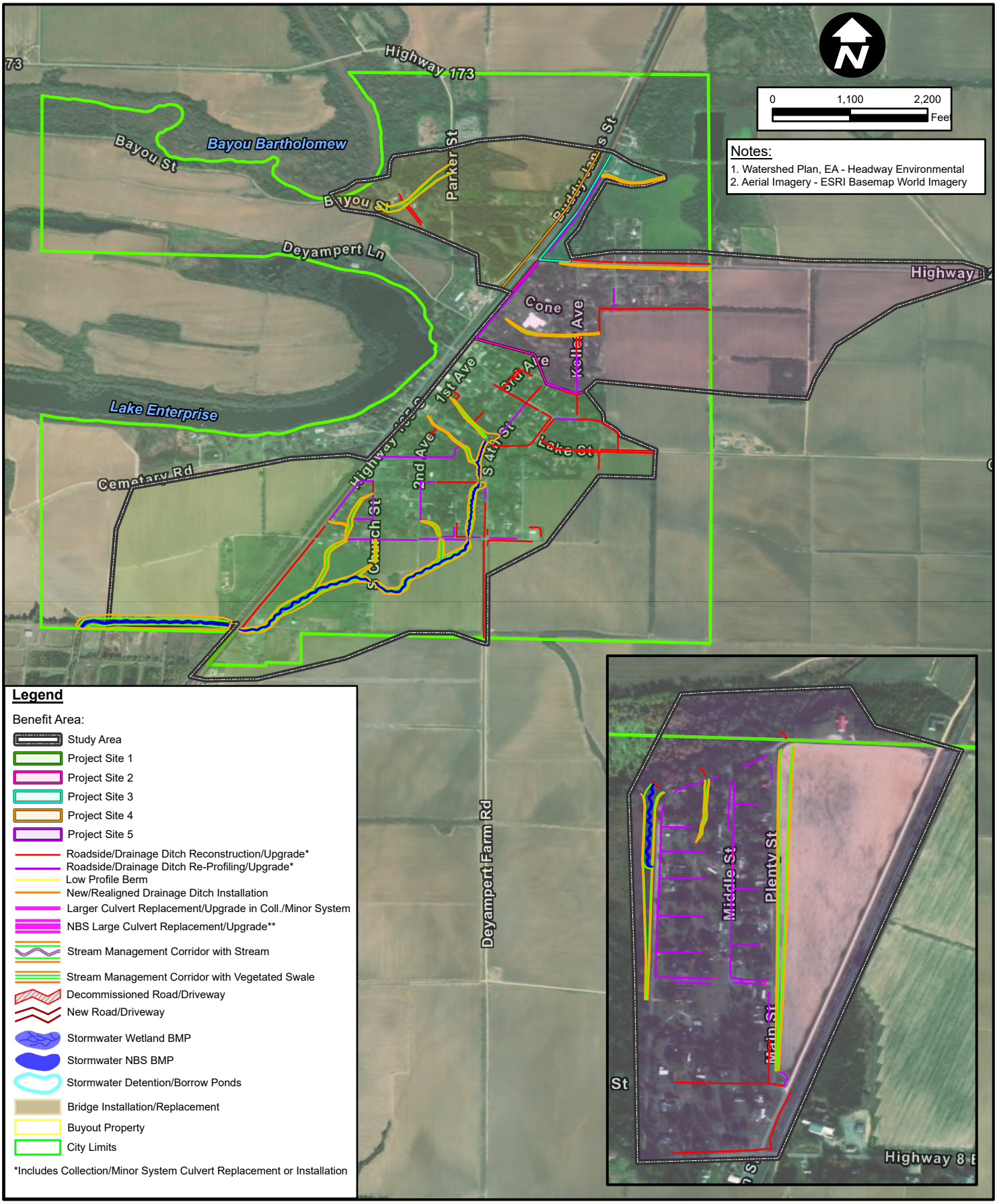
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Ms. Johnna Flynn
Tribal Historic Preservation Officer
Jena Band of Choctaw Indians
Post Office Box 14
Jena, Louisiana 71342

Dear Ms. Flynn:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Jena Band of Choctaw Indians regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

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If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

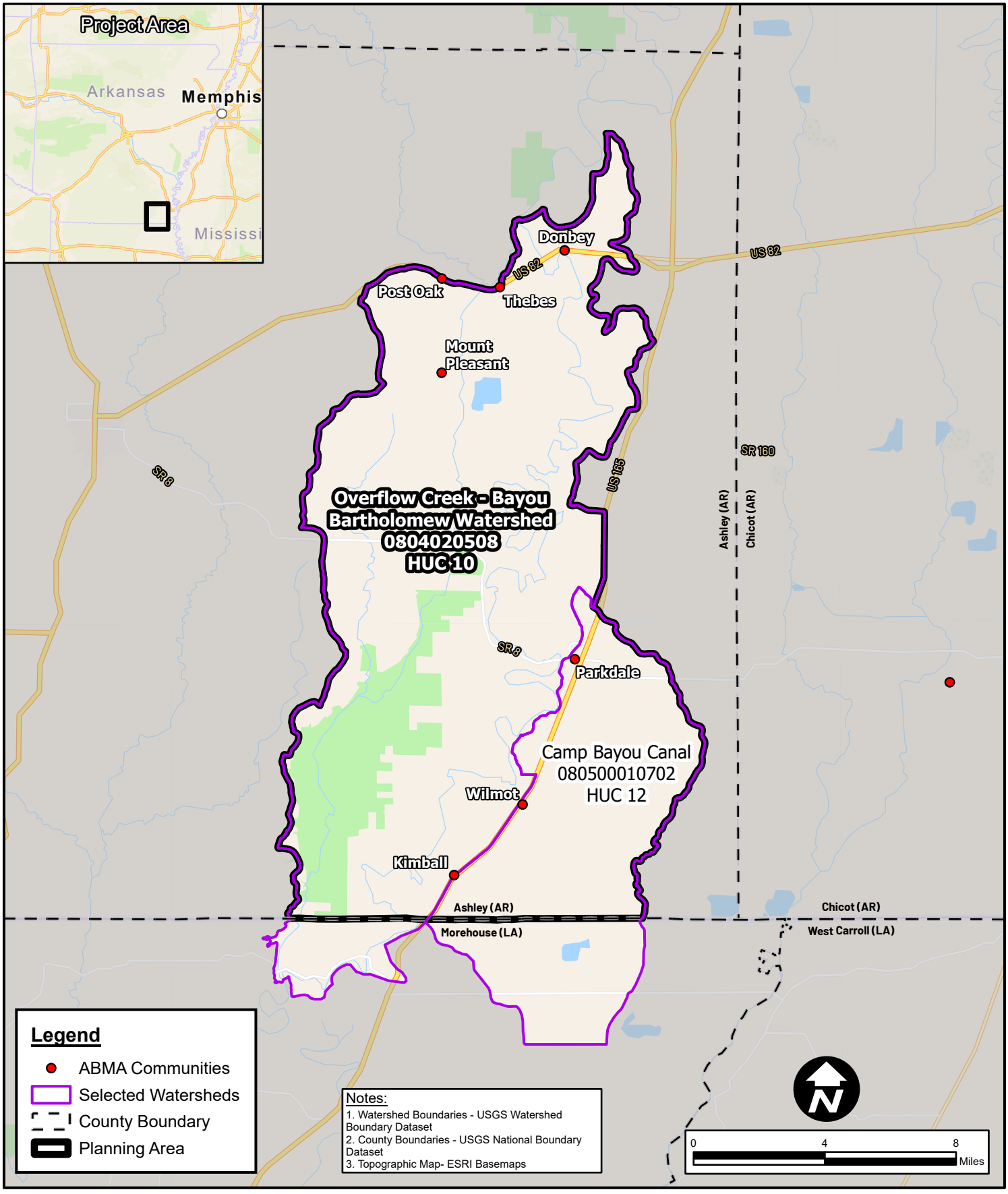
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United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

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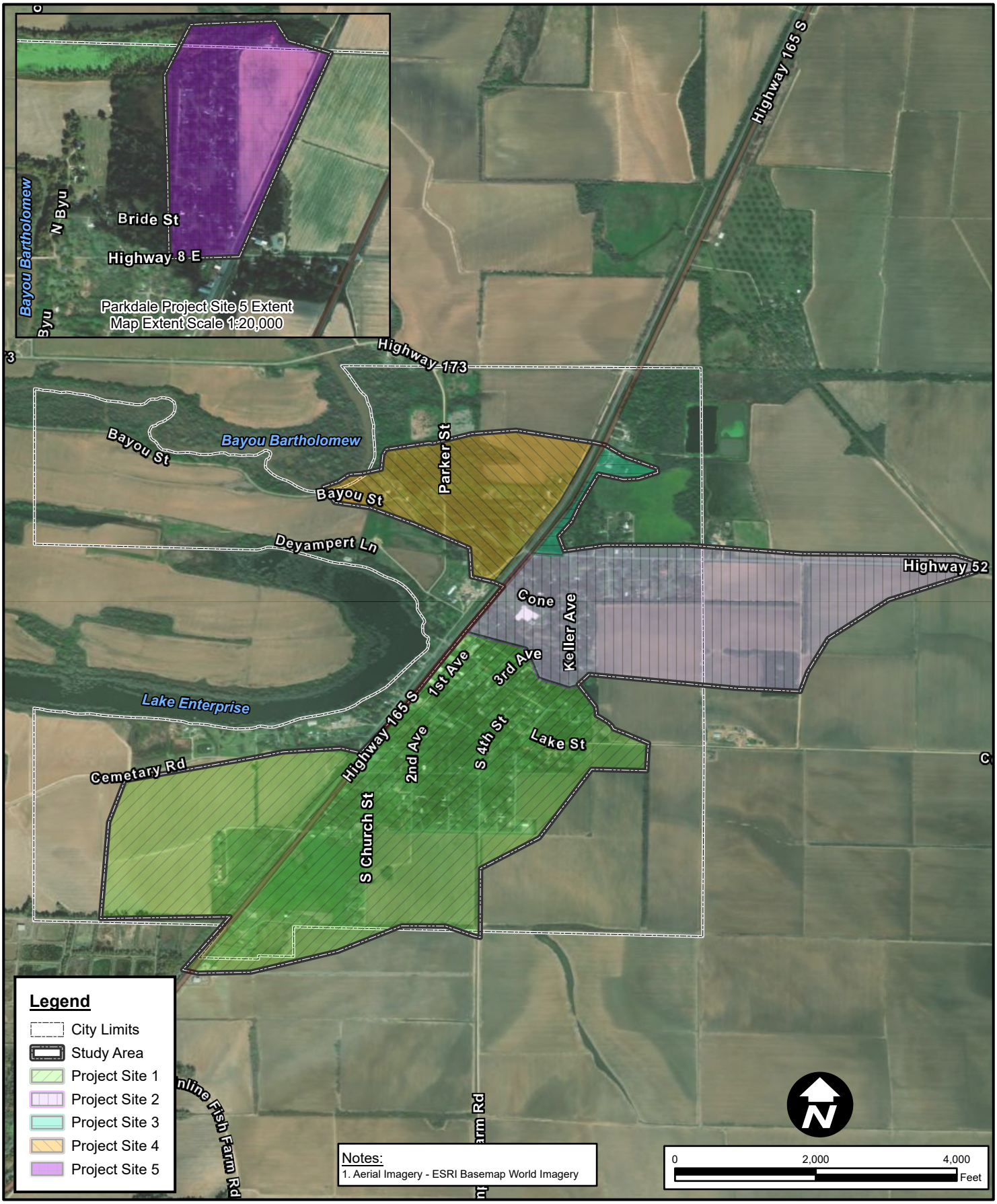
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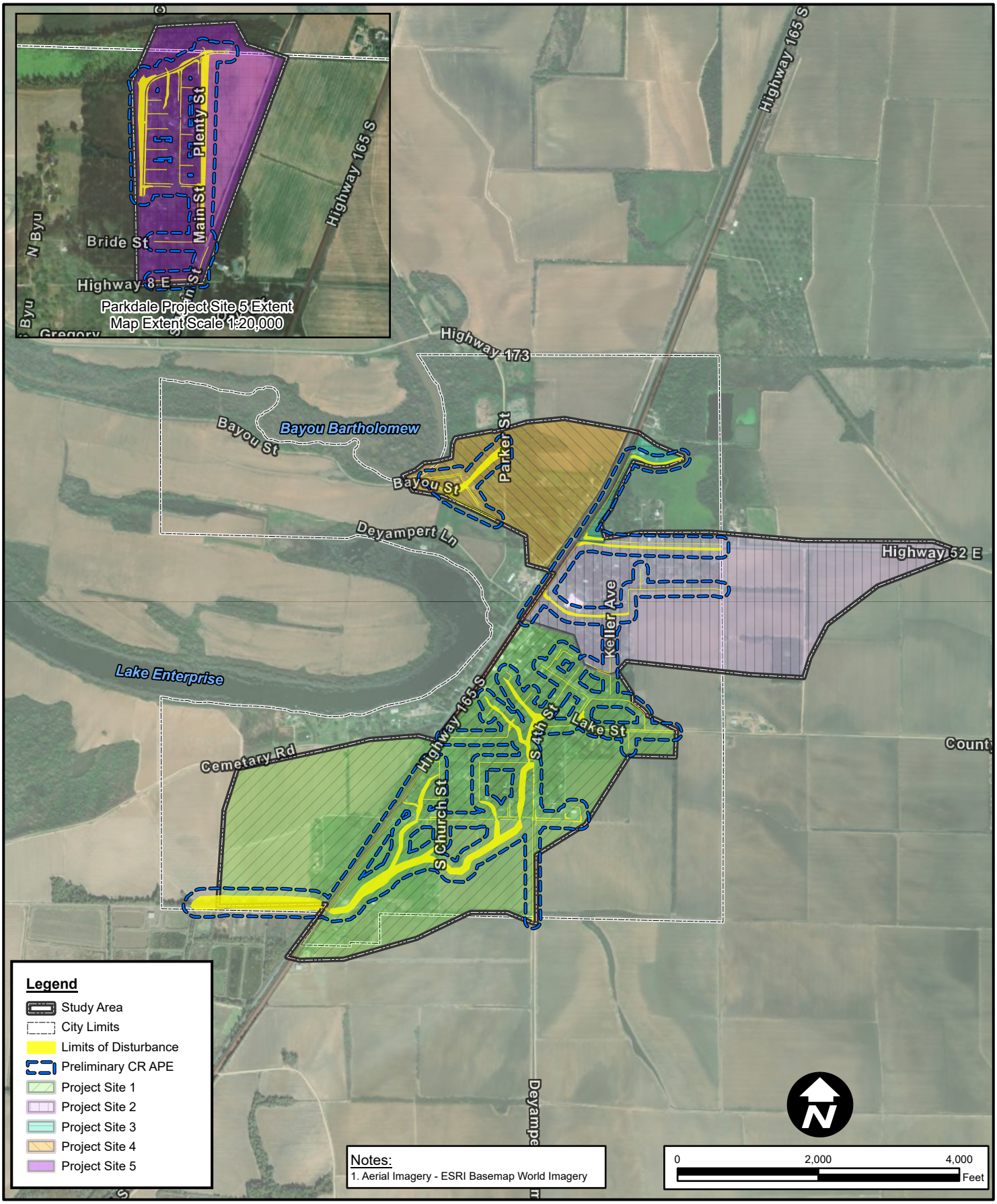
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
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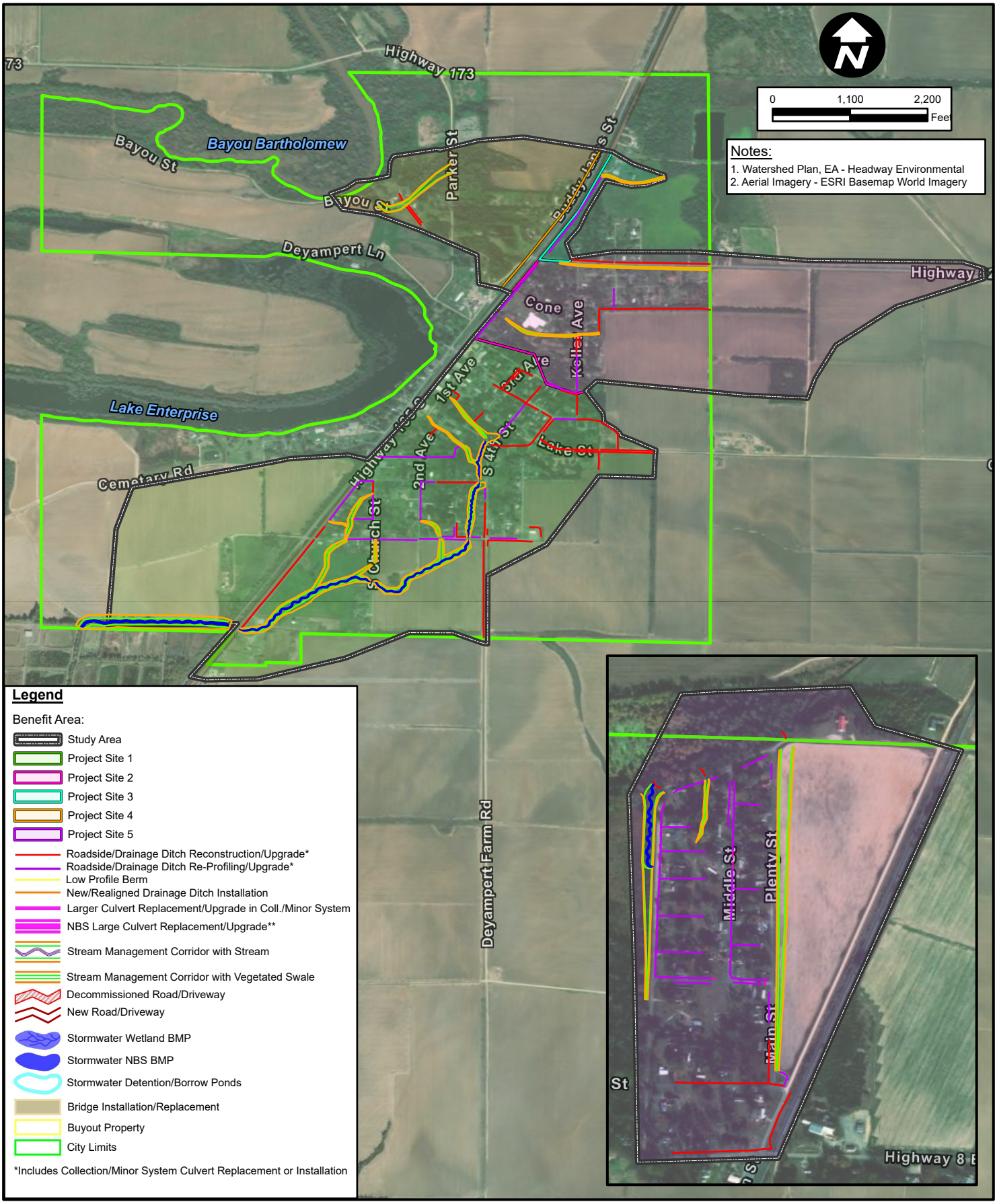
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LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Ms. Stephanie Yahola
Town King
Kialegee Tribal Town
Post Office Box 332
Wetumka, Oklahoma 74883

Dear Ms. Yahola:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

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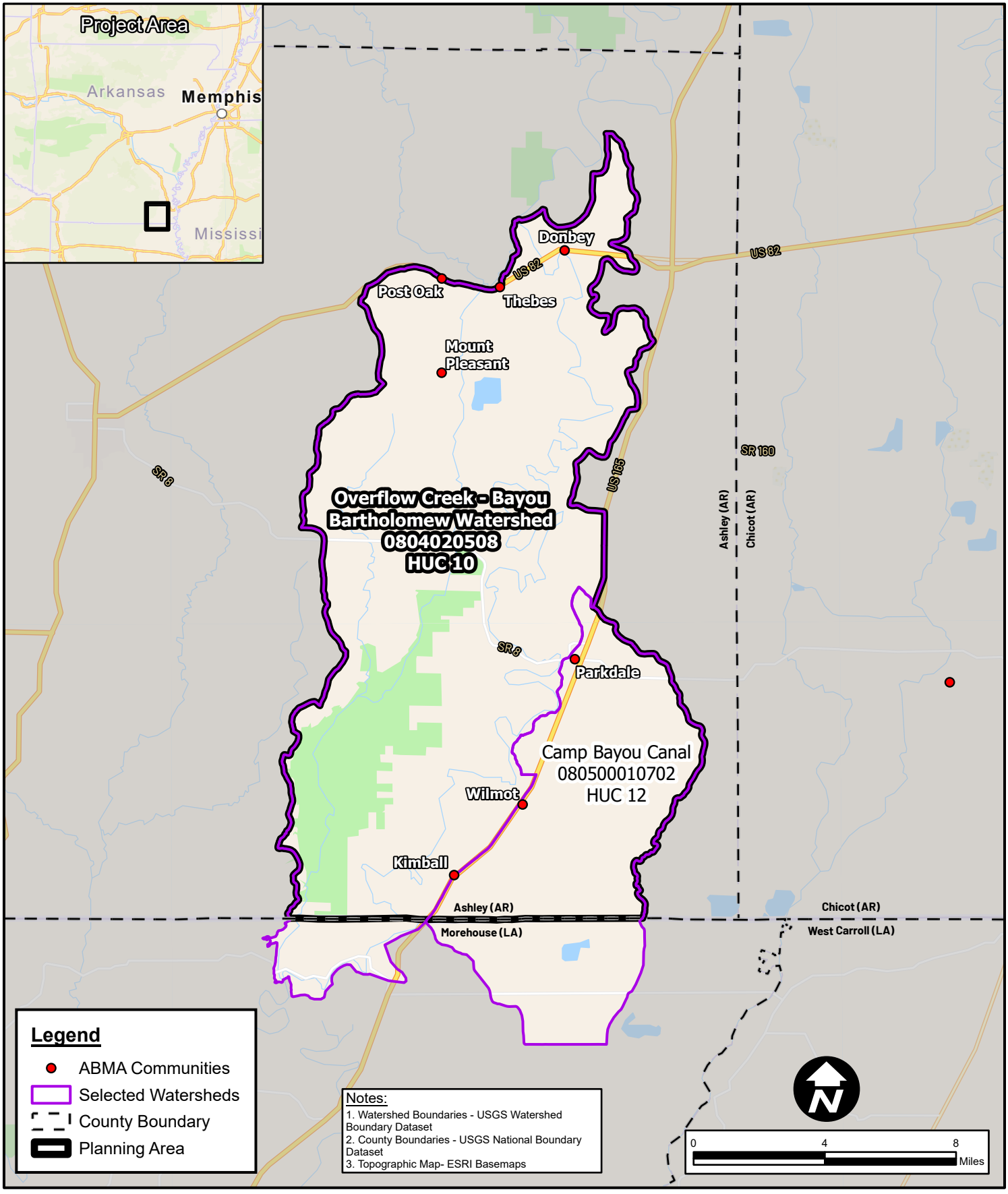
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Amanda J. Mathis
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USDA NRCS
United States Department of Agriculture
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PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

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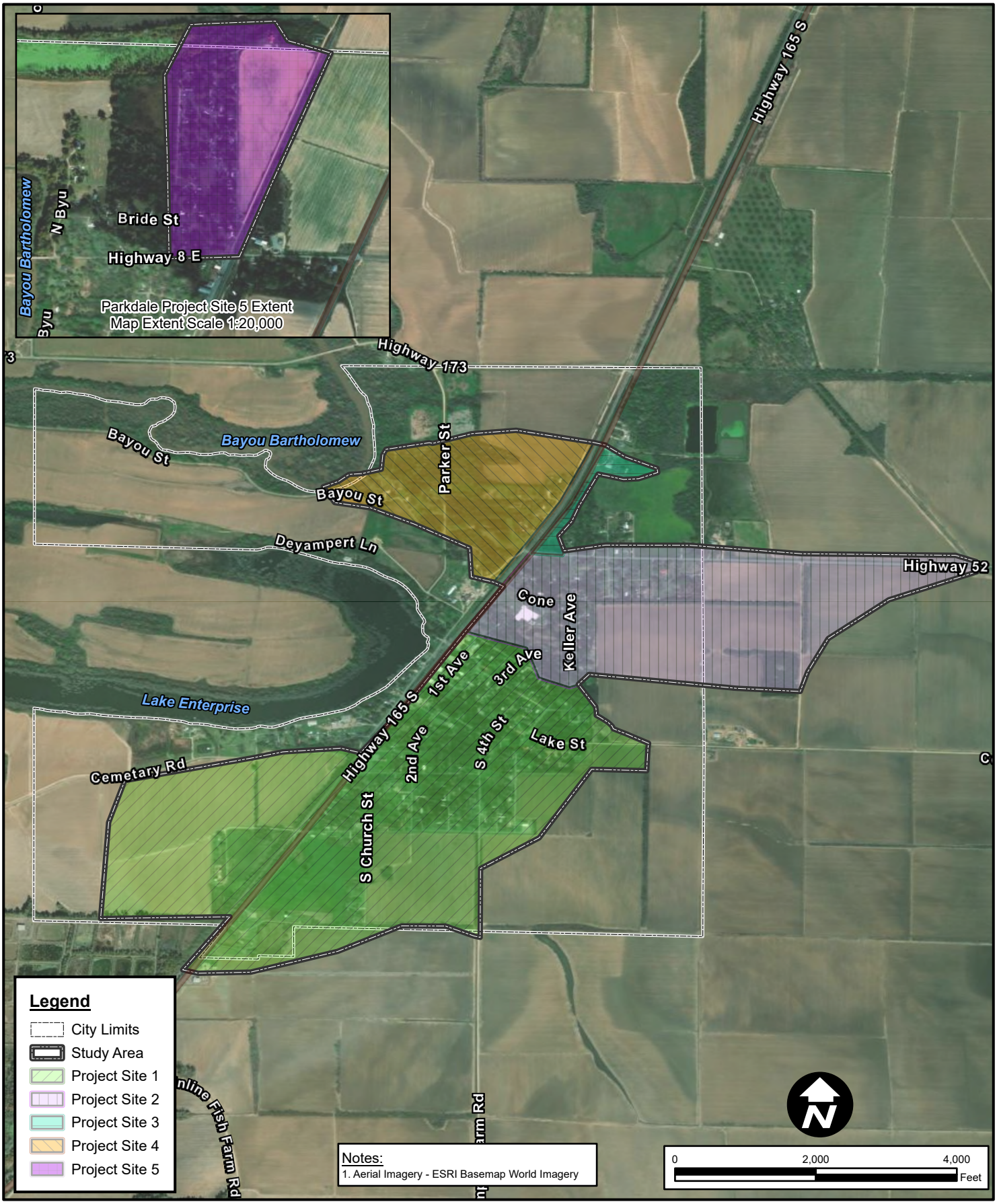
Alternative 6A will provide flood-risk reduction and flood-damage mitigation using NBS-focused measures wherever possible and appropriate. A combination of onsite/local stormwater bioretention cells and stormwater quality wetland (SWQs), upgraded stormwater collection/minor drainage systems, and the installation of SMCs will substantially reduce the frequency and severity of street and property flooding in the Study Area.

Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
- Install 19,929 LF of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels.
- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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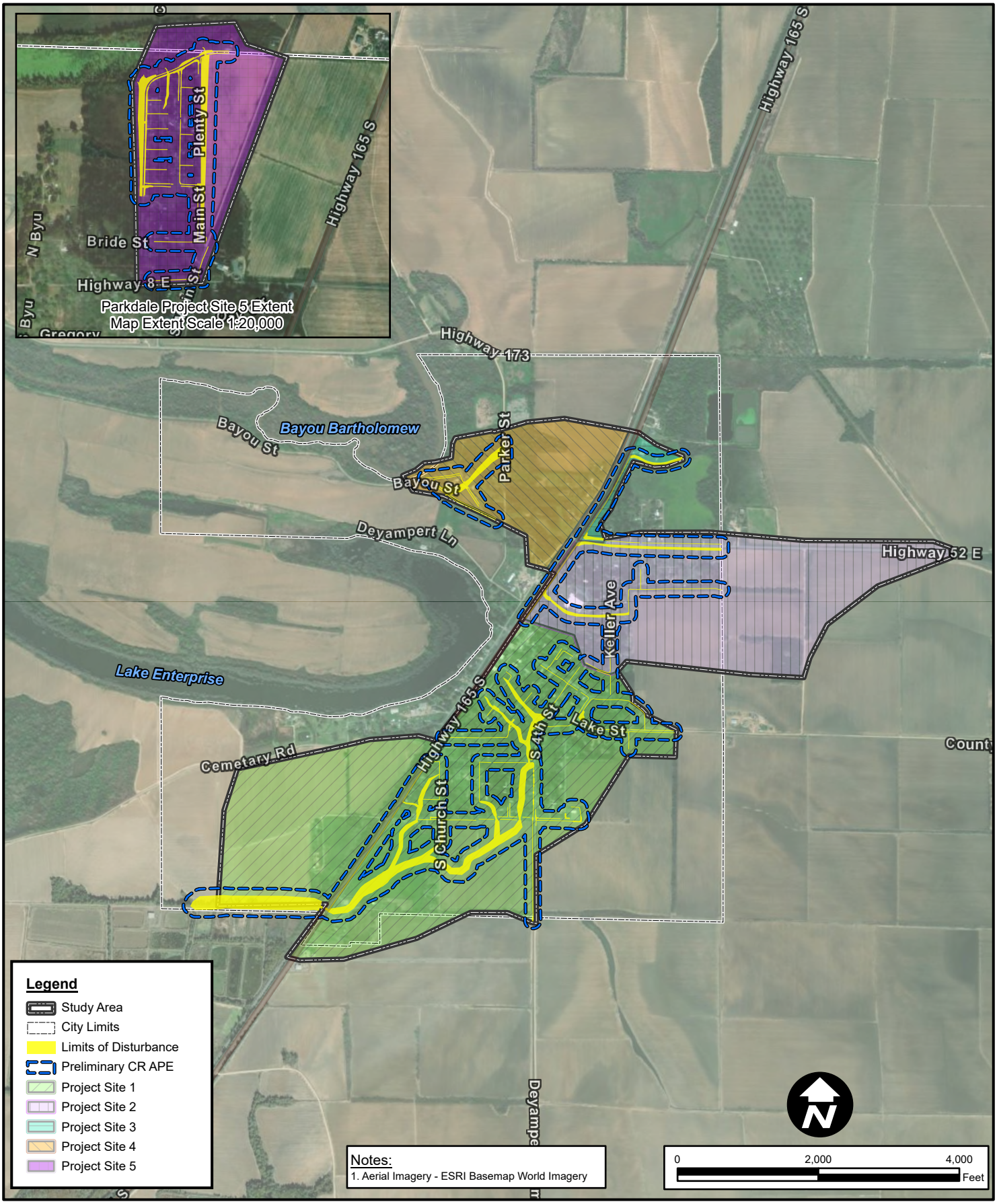
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

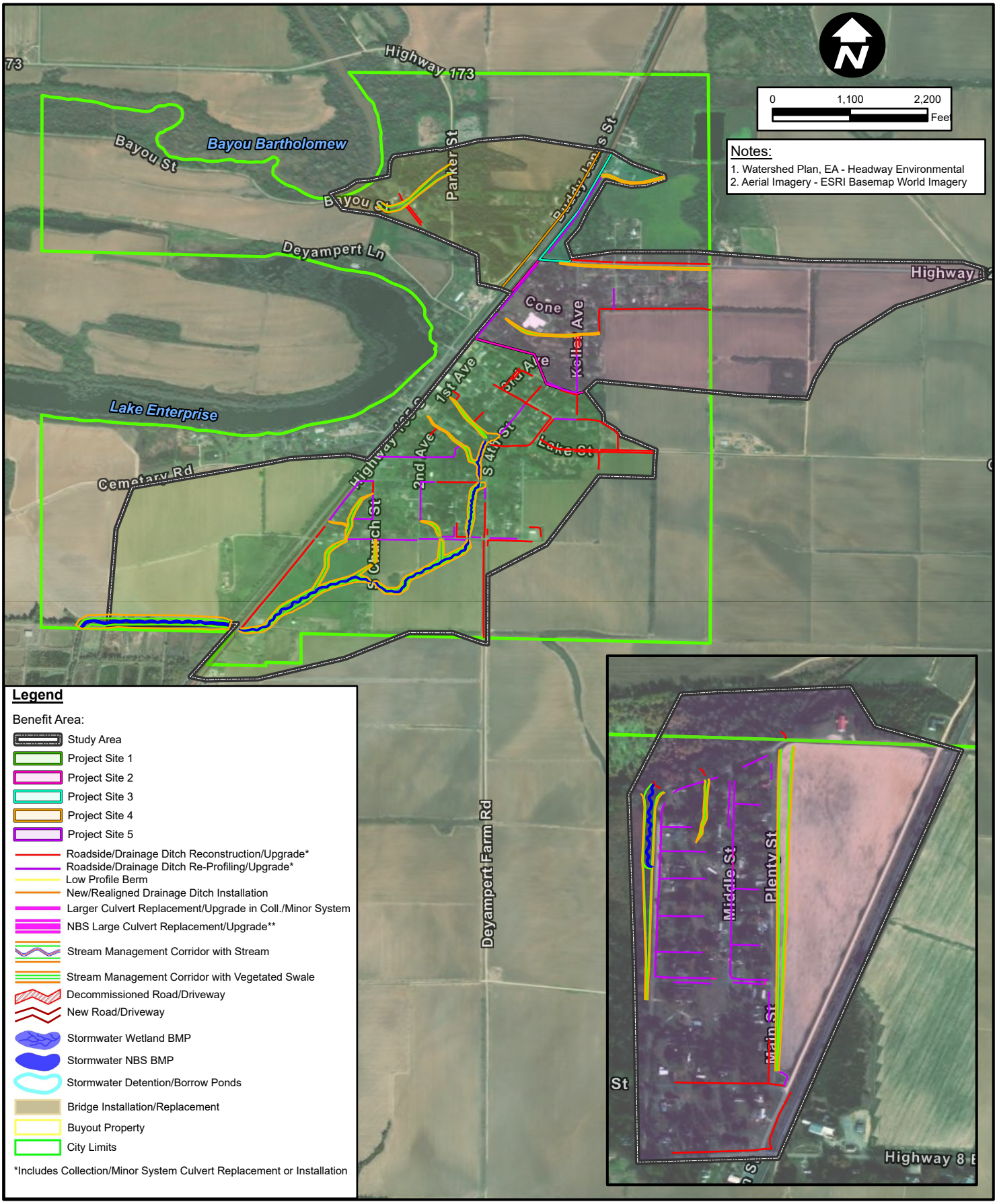
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Ms. Melanie Carson
Tribal Historic Preservation Officer
Mississippi Band of Choctaw Indians
Post Office Box 6010
Choctaw, Mississippi 39350

Dear Ms. Carson:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Continuing Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS initiated consultation with the Mississippi Band of Choctaw Indians regarding this project in a letter dated October 19th, 2023 (included for your reference). We are writing to continue consultation under Section 106 of the National Historic Preservation Act (NHPA) regarding proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Mississippi Band of Choctaw Indians in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

The NRCS respects the authority of the Mississippi Band of Choctaw Indians as a sovereign nation. If at any time you wish to formally share your interests, recommendations, and concerns directly with NRCS, please notify the State Conservation Engineer, Stephen Smedley at Stephen.Smedley@usda.gov, (501) 301-3141 and Resource Conservationist, Bill Kinkaid William.Kinkaid@usda.gov, (501) 301-3127.

Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Initial Consultation and Scoping Letter
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201

October 19, 2023

Mr. Kenneth H. Carleton, Tribal Historic Preservation Officer/Archeologist
Mississippi Band of Choctaw Indians
P.O. Box 6010
Choctaw, MS 39350

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Mr. Carleton:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

To satisfy the public involvement and consultation requirements for Section 106 of the National Historic Preservation Act (NHPA), USDA-NRCS is interested in learning whether the project has the potential to impact any significant archaeological, religious or cultural sites so that USDA-NRCS can factor that into its identification and evaluation of feasible alternatives during the NEPA documentation process.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and surrounding small communities in Ashley County, Arkansas, which lie within one 12-digit and one 10-digit HUC watersheds. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm (central standard time), November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot, AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Scott Smallwood of my staff at Christopher.Smallwood@usda.gov or via phone at 501-237-3142.

RANDY CHILDRESS

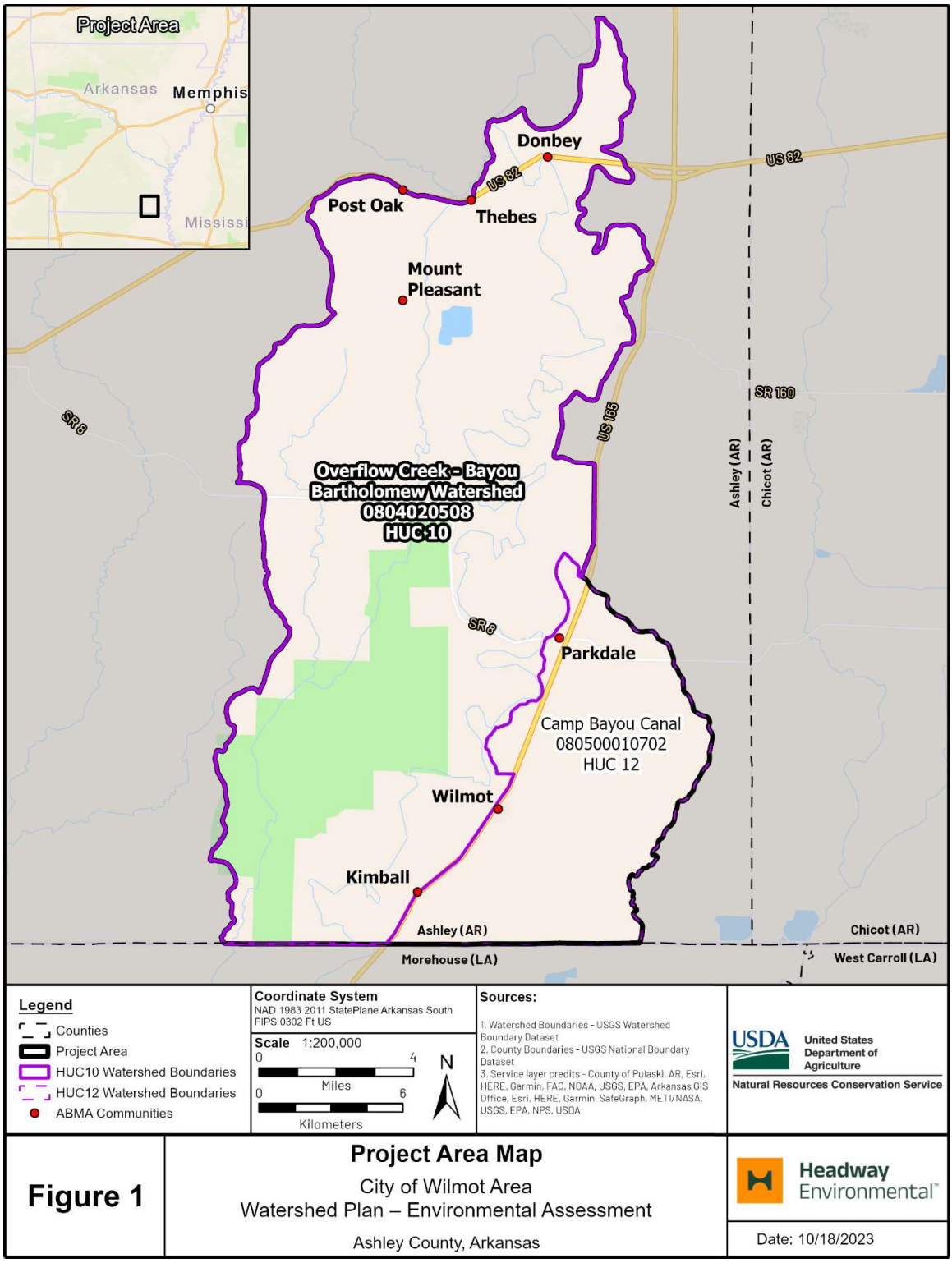
Digitally signed by RANDY CHILDRESS
Date: 2023.10.25 12:50:08 -05'00'

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Location Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

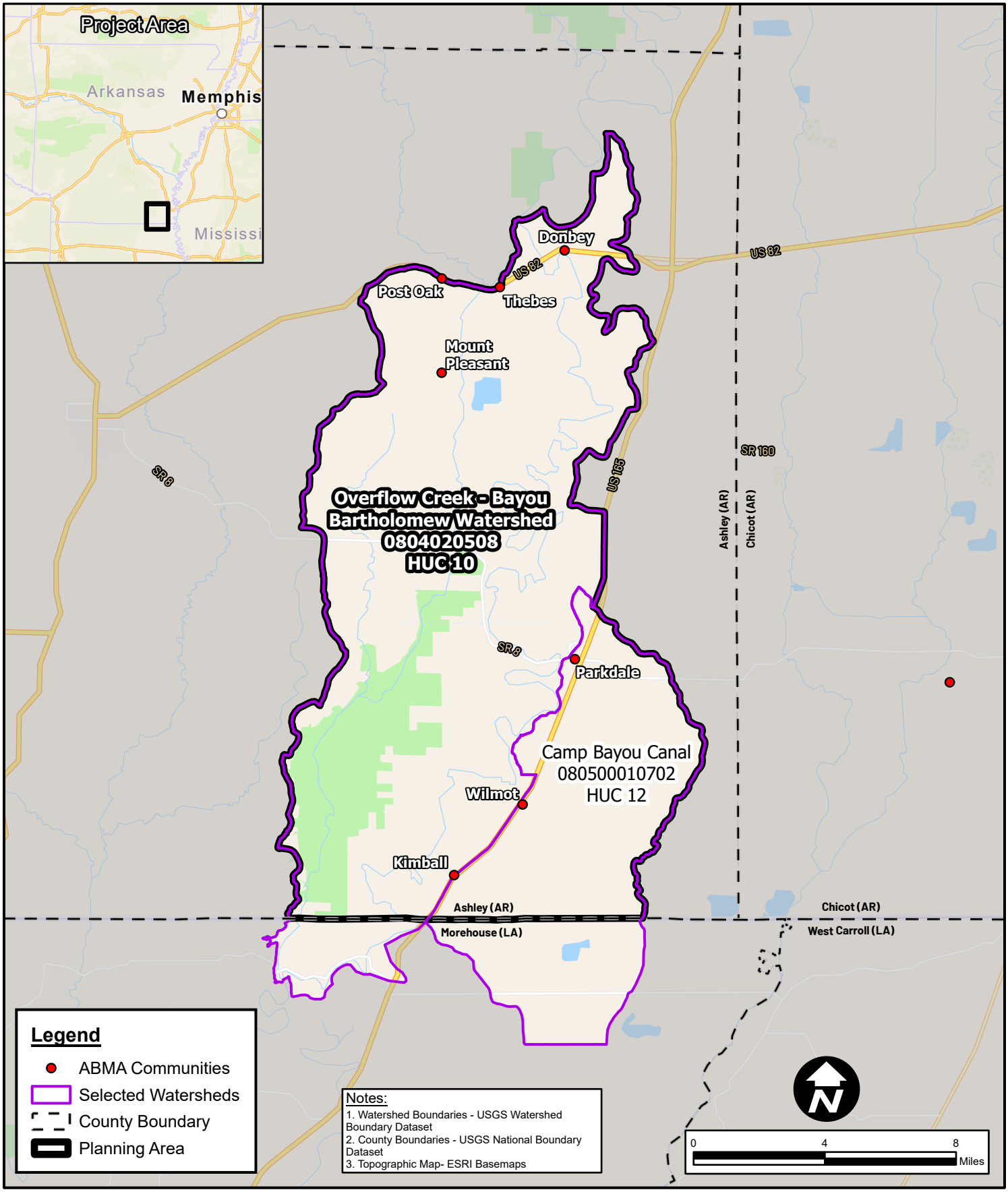
November 16, 2023
6:00 – 7:45 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will include a presentation followed by an open-house, come-and-go forum, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.



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PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

Additionally, these archaeological sites and AHPP resources are located within a one mile radius of these project sites: [redacted]

Alternative 6A/MNMB Alternative: Combined NBS-Focused Alternative

Alternative 6A/Maximum Net Monetized Benefit (MNMB) Alternative combines the Nature Based Solutions (NBS)-Focused Alternatives for each of the five Project Sites. Alternative 6A includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
- Install 19,929 LF of stream management corridors (SMCs) in Wilmot and Parkdale, including a total of 13,089 LF of vegetated swale and 6,840 LF of national channel design (NCD) stream, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels.
- Decommission and remove 0.3 ac of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 structures.

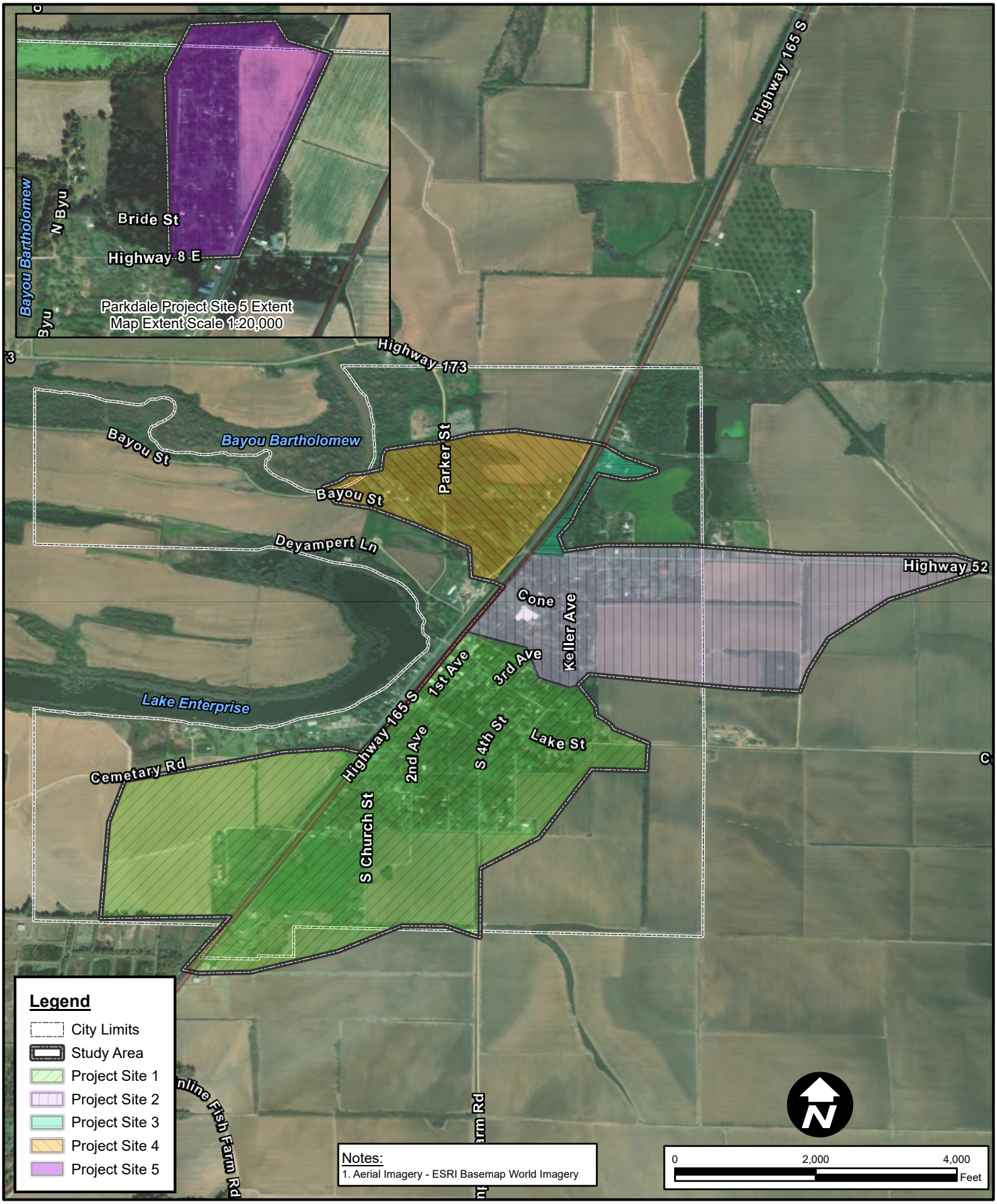
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Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
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- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
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Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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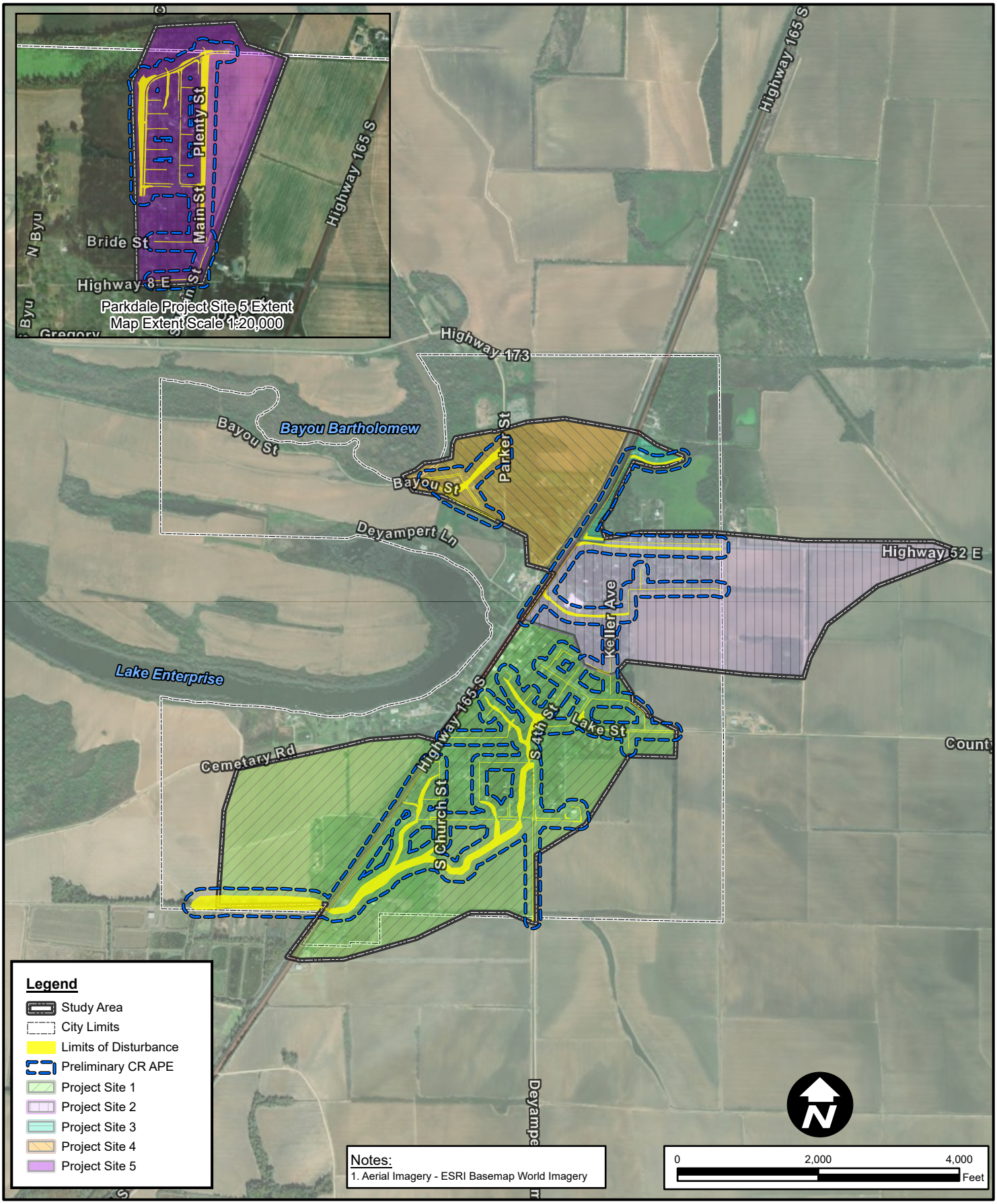
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

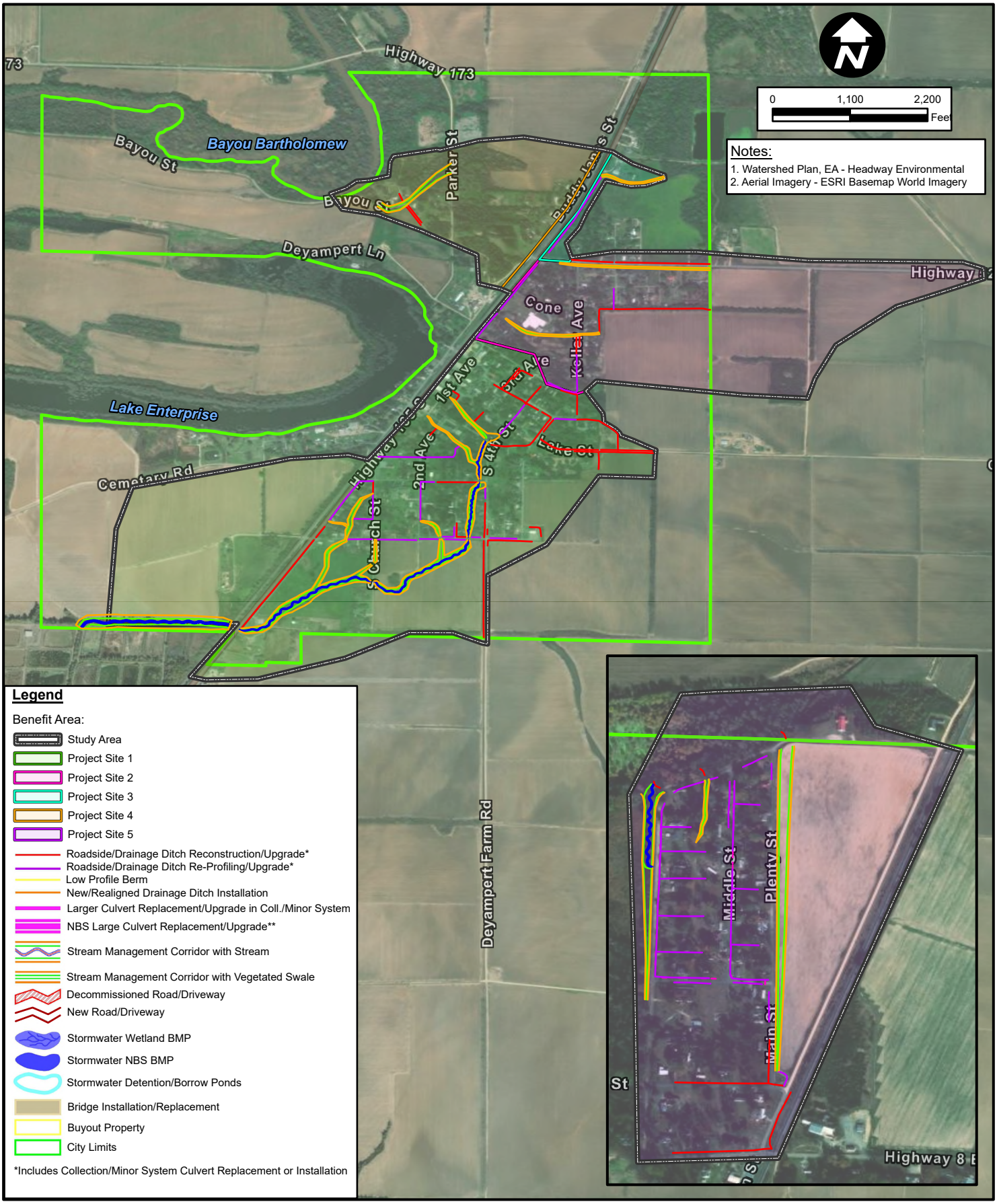
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Dr. Savannah Waters
Tribal Historic Preservation Officer
Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

Dear Dr. Waters:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Muscogee (Creek) Nation regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Muscogee (Creek) Nation in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

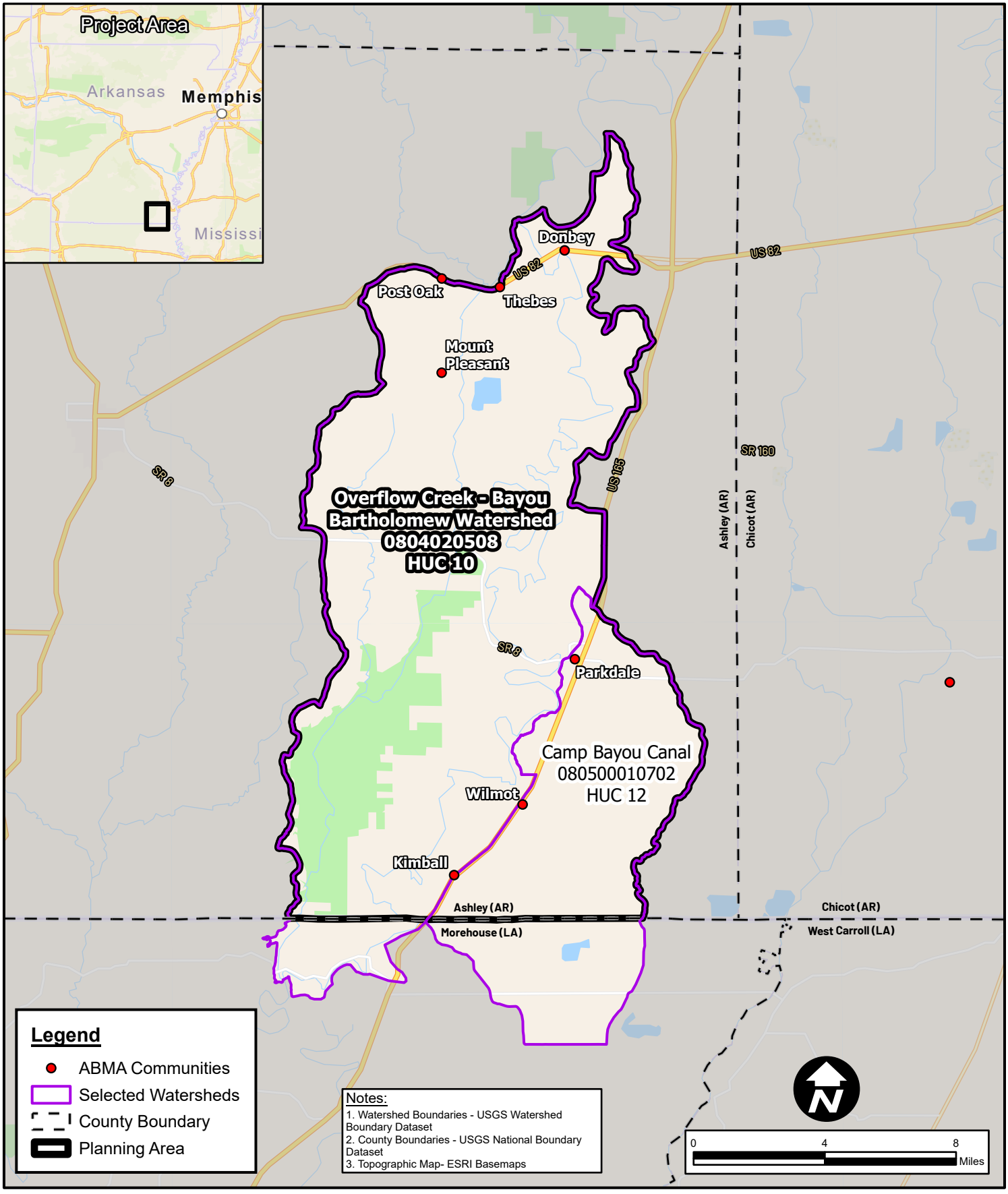
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Amanda J. Mathis
State Conservationist

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Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
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USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

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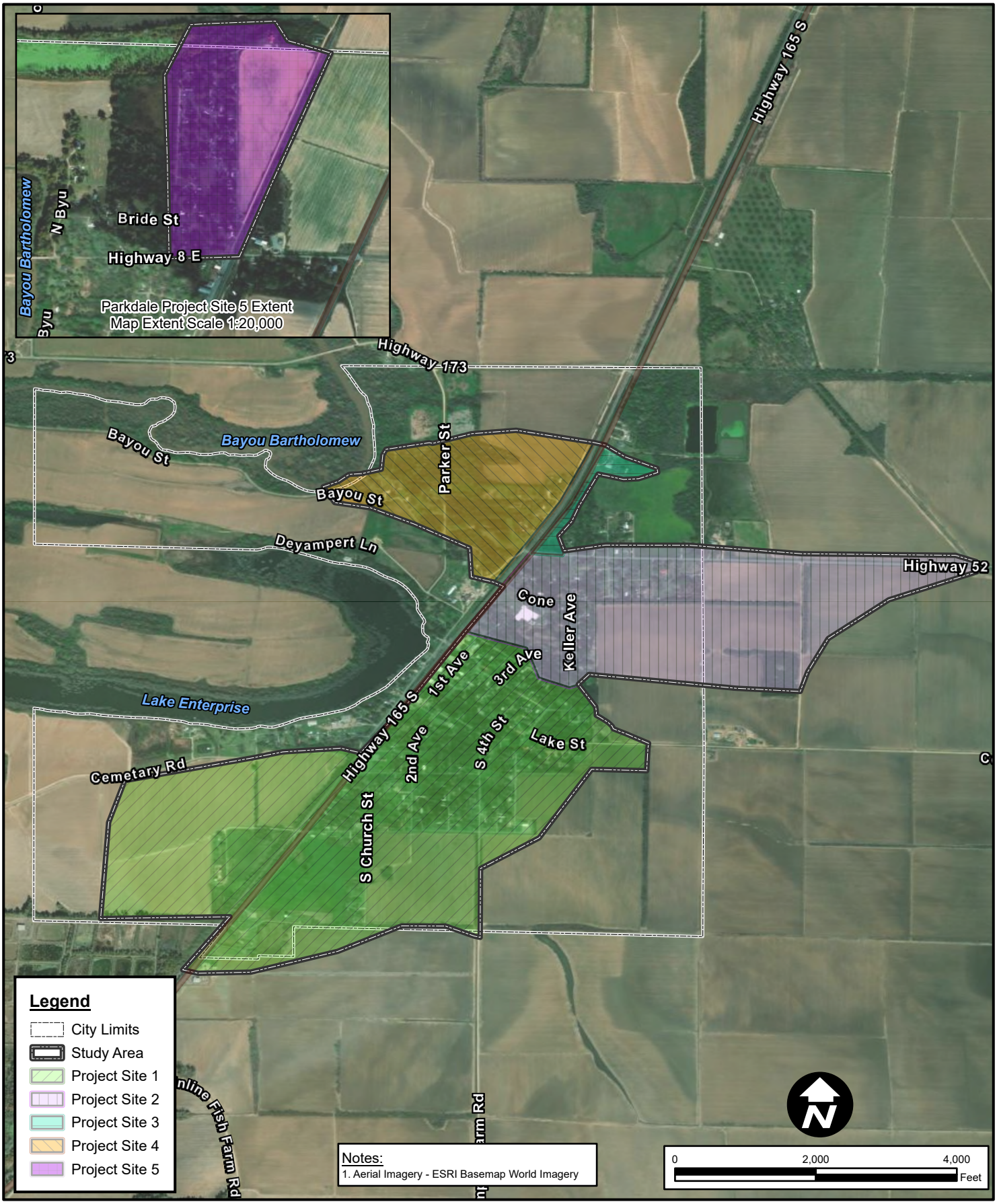
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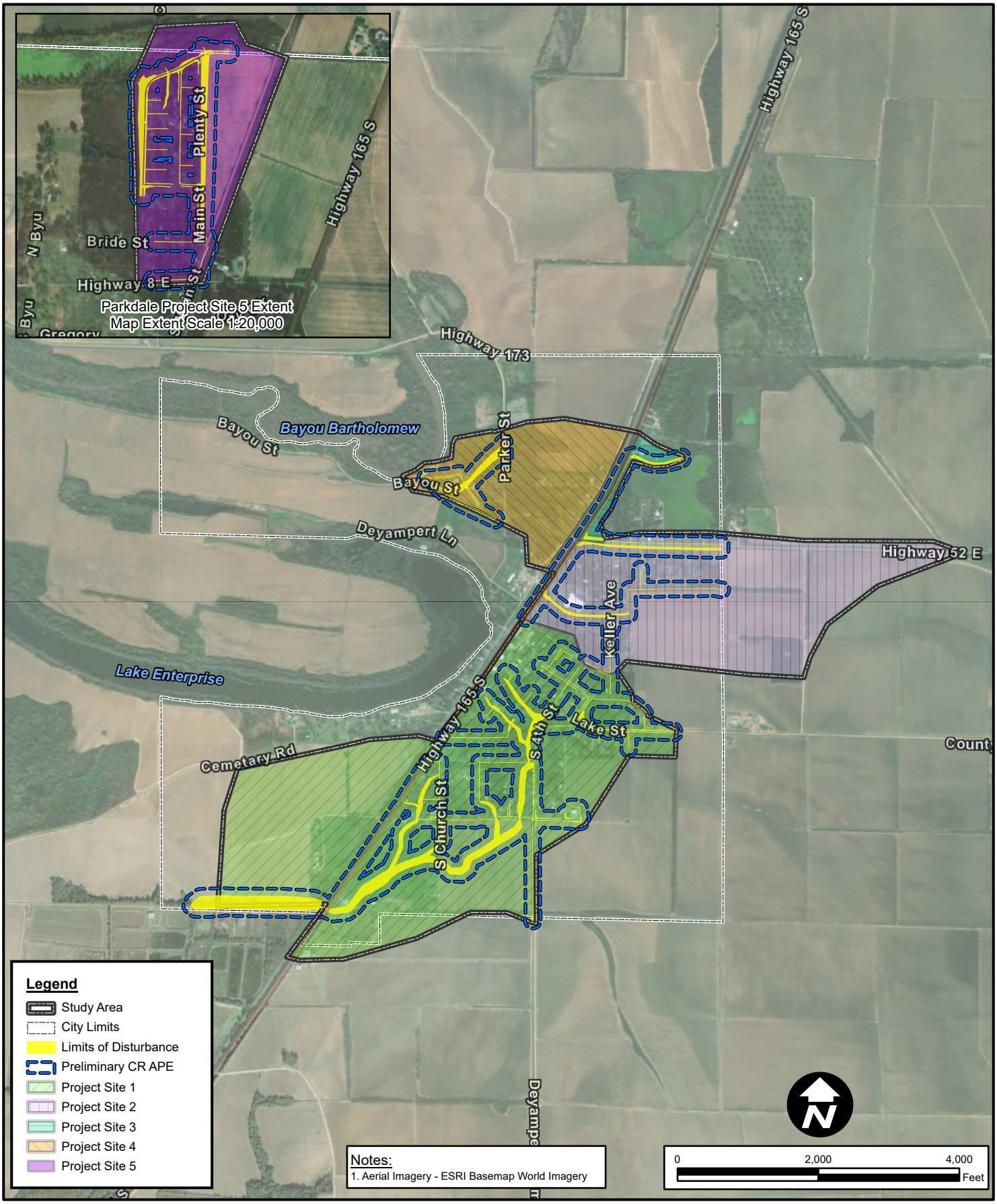
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

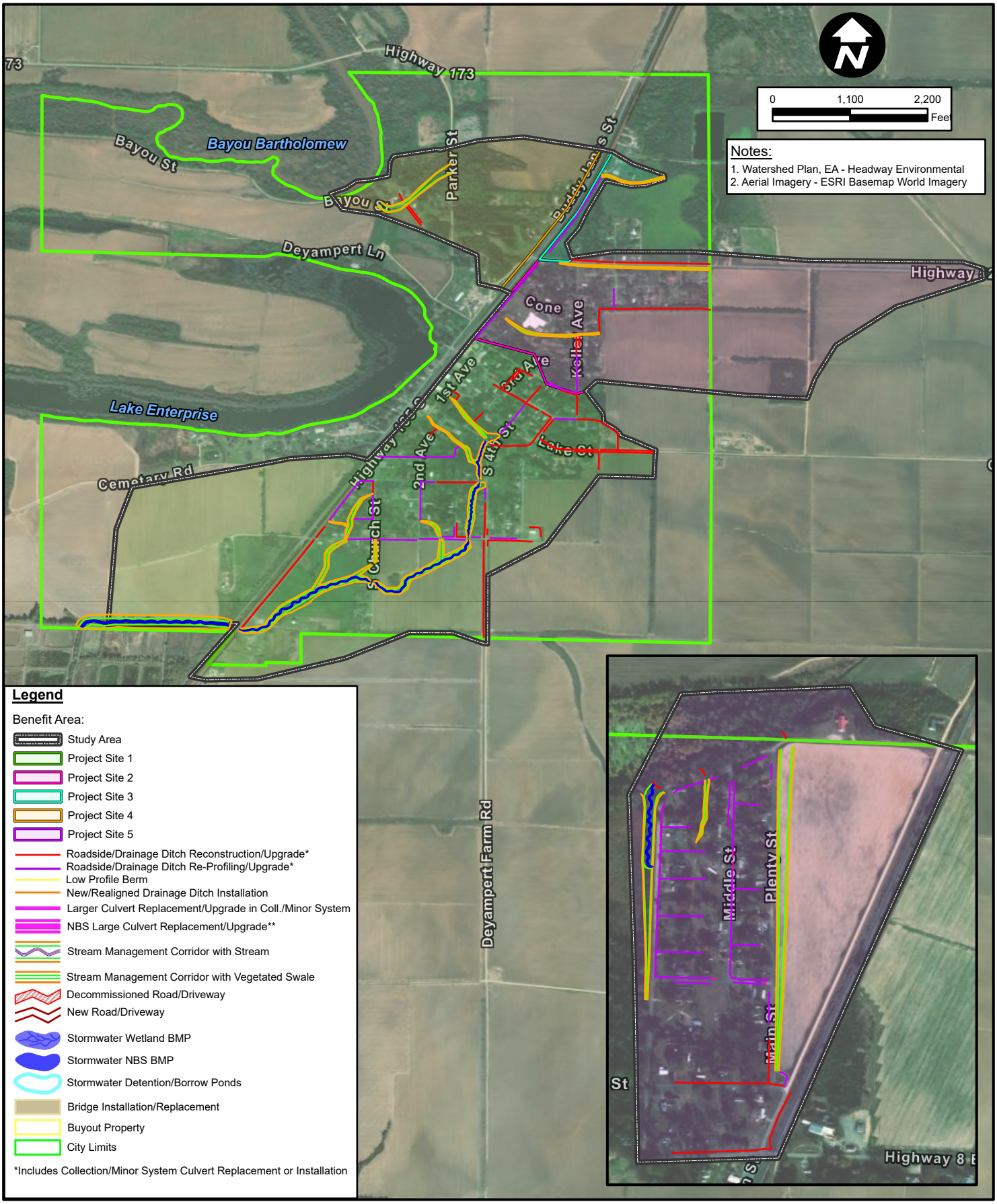
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Dr. Andrea Hunter
Osage Nation Historic Preservation Director and Tribal Historic Preservation Officer
The Osage Nation
627 Grandview Avenue
Pawhuska, Oklahoma 74056

Dear Dr. Hunter:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Osage Nation regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Osage Nation in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

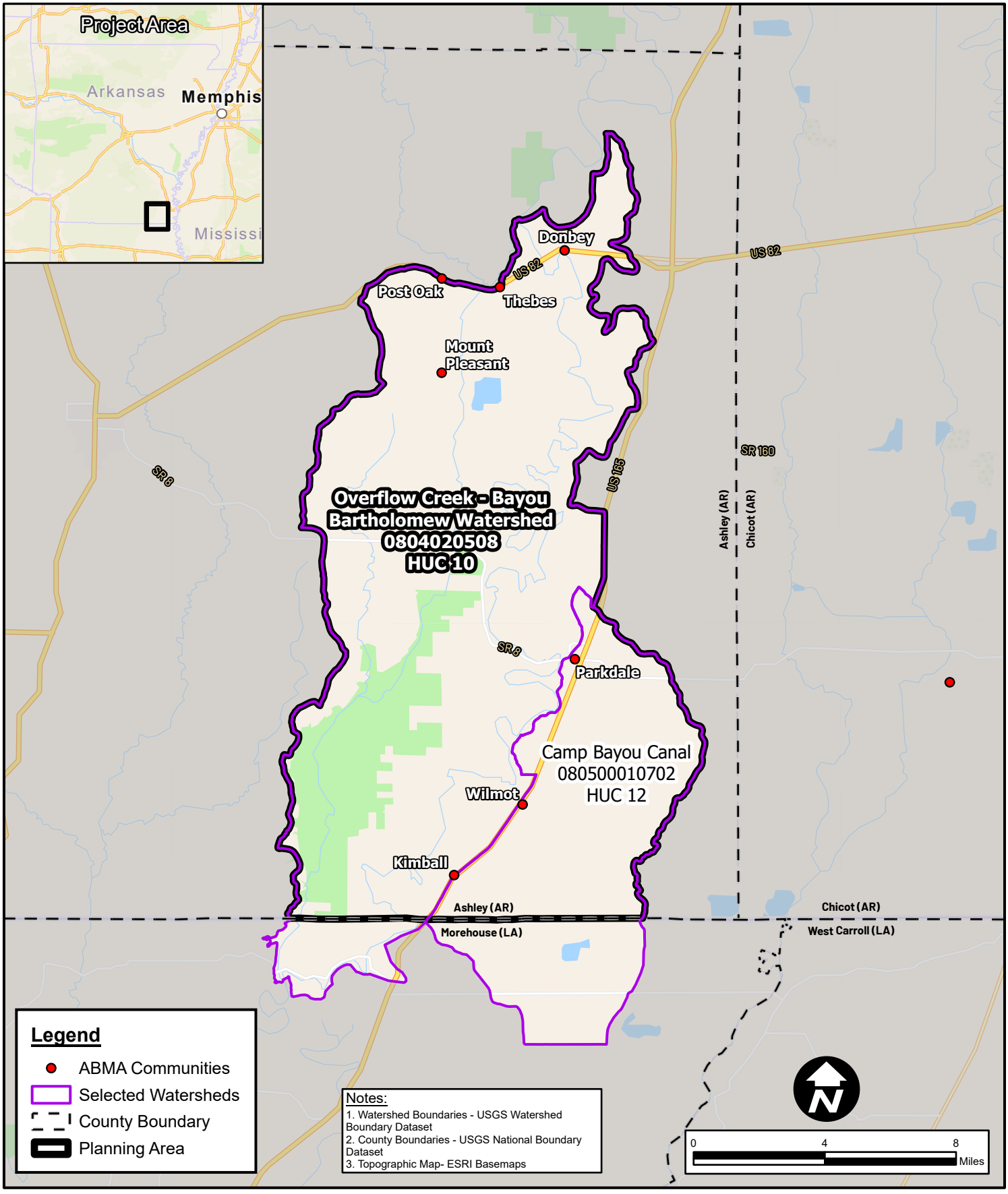
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Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

Additionally, these archaeological sites and AHPP resources are located within a one mile radius of these project sites: [redacted]

Alternative 6A/MNMB Alternative: Combined NBS-Focused Alternative

Alternative 6A/Maximum Net Monetized Benefit (MNMB) Alternative combines the Nature Based Solutions (NBS)-Focused Alternatives for each of the five Project Sites. Alternative 6A includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
- Install 19,929 LF of stream management corridors (SMCs) in Wilmot and Parkdale, including a total of 13,089 LF of vegetated swale and 6,840 LF of national channel design (NCD) stream, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels.
- Decommission and remove 0.3 ac of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 structures.

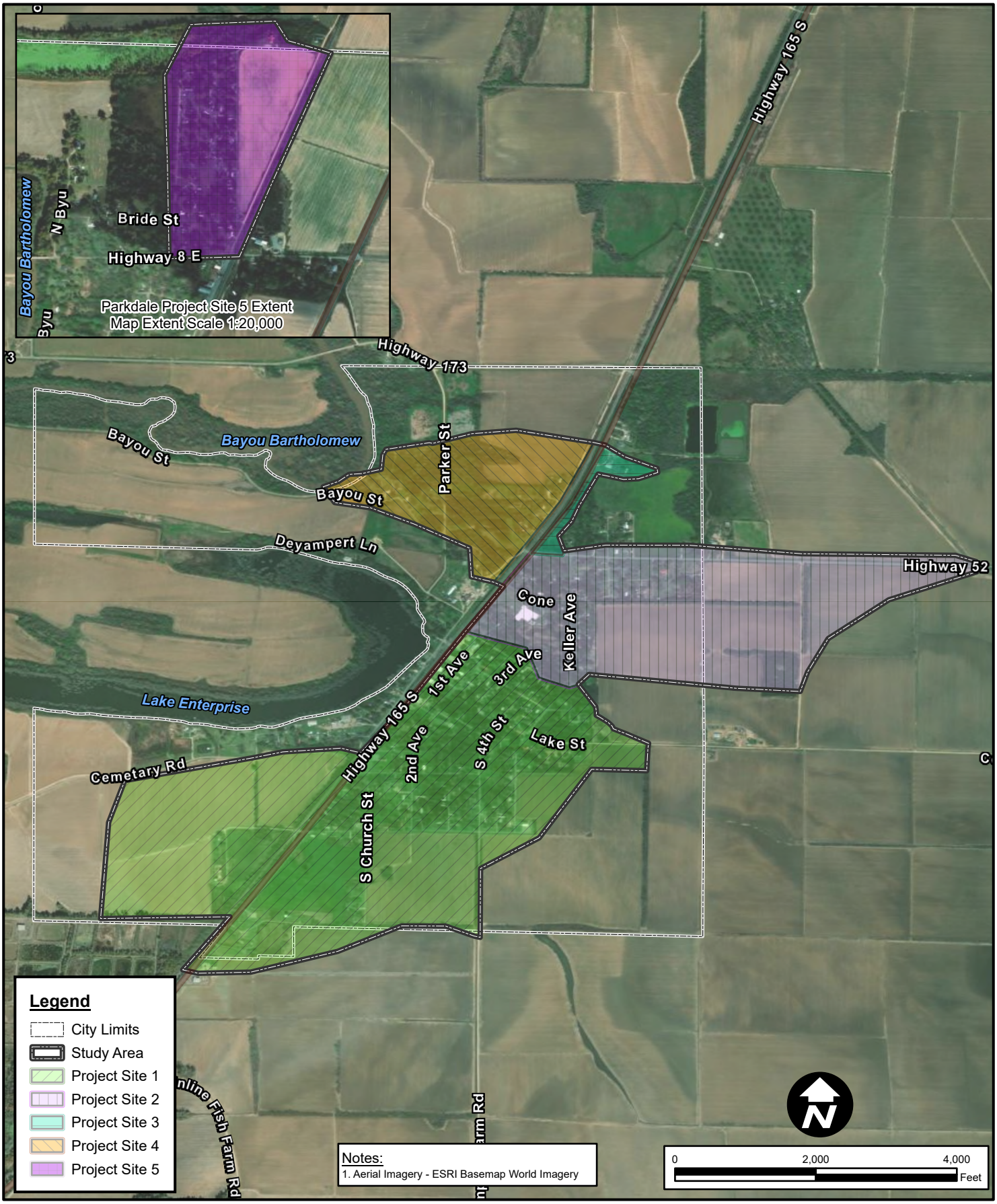
Alternative 6A will provide flood-risk reduction and flood-damage mitigation using NBS-focused measures wherever possible and appropriate. A combination of onsite/local stormwater bioretention cells and stormwater quality wetland (SWQs), upgraded stormwater collection/minor drainage systems, and the installation of SMCs will substantially reduce the frequency and severity of street and property flooding in the Study Area.

Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
- Install 19,929 LF of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels.
- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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Natural Resources Conservation Service

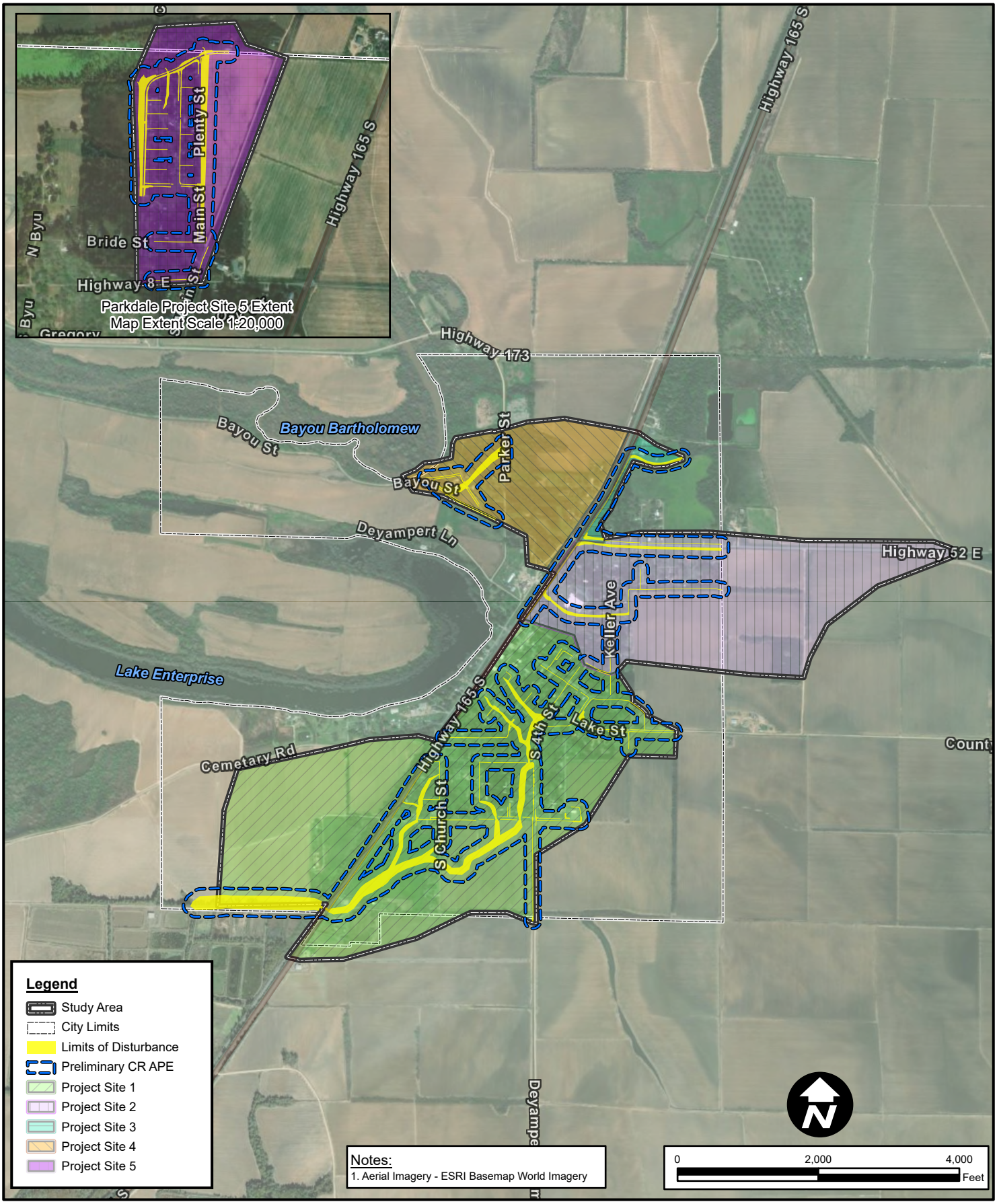
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

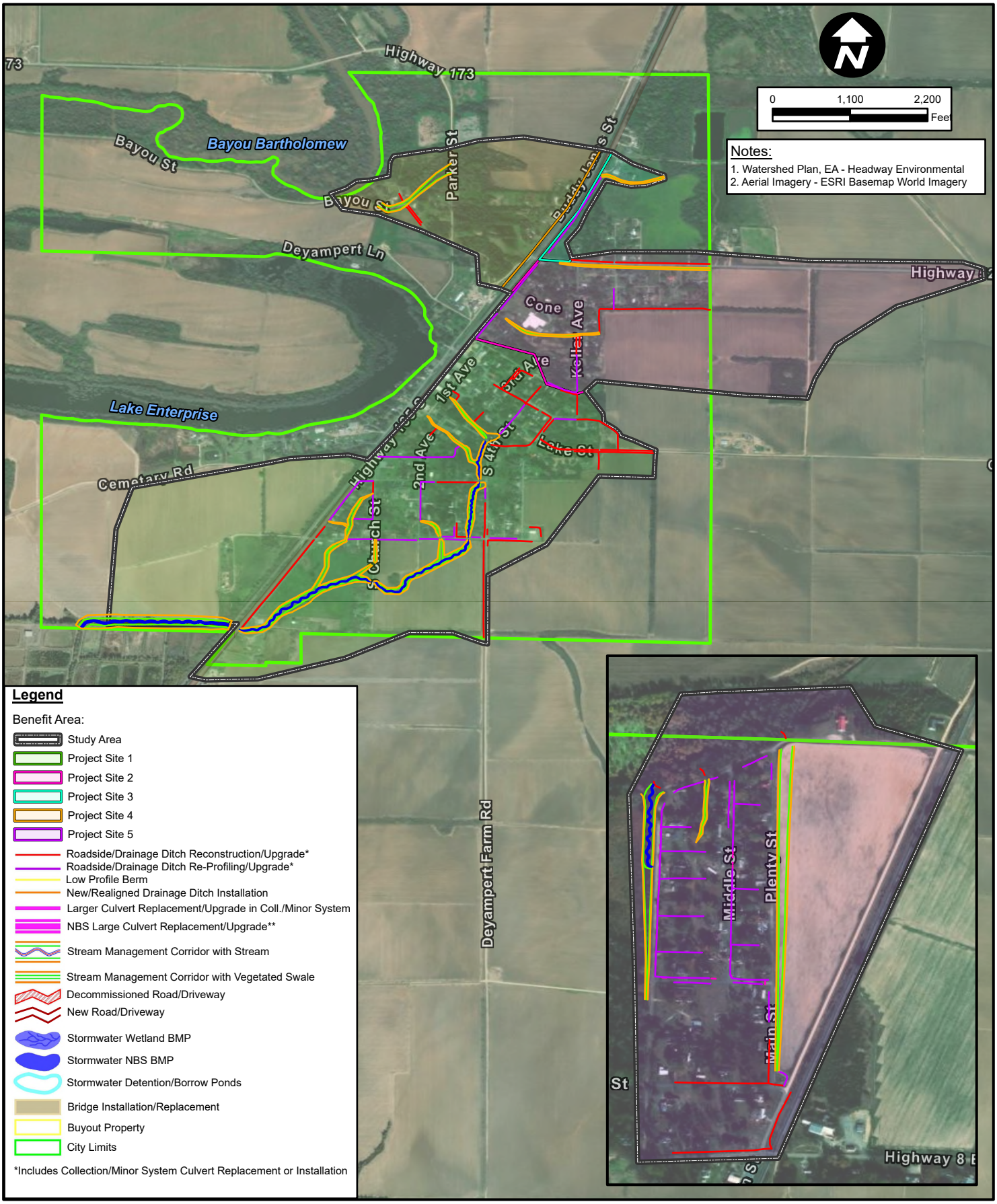
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

VIA EMAIL

SEP 0 1 2026

Ms. Billie Burtrum
Quapaw Nation Historic Preservation Program Director and Preservation Officer
Quapaw Nation
Post Office Box 765
Quapaw, Oklahoma 74363

Dear Ms. Burtrum:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Continuing Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS initiated consultation with the Quapaw Nation regarding this project in a letter dated October 19th, 2023 (included for your reference). We are writing to continue consultation under Section 106 of the National Historic Preservation Act (NHPA) regarding proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Quapaw Nation in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

The NRCS respects the authority of the Quapaw Nation as a sovereign nation. If at any time you wish to formally share your interests, recommendations, and concerns directly with NRCS, please notify the State Conservation Engineer, Stephen Smedley at Stephen.Smedley@usda.gov, (501) 301-3141 and Resource Conservationist, Bill Kinkaid William.Kinkaid@usda.gov, (501) 301-3127.

Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
Initial Consultation and Scoping Letter
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

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C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201

October 19, 2023

Mr. Everett Bandy, Tribal Historic Preservation Officer
Quapaw Nation
P.O. Box 765
Quapaw, OK 74363

RE: Consultation under Section 106 of the National Historic Preservation Act of 1966, Amended for the City of Wilmot Area Watershed Plan and Environmental Assessment, Ashley County, Arkansas

Dear Mr. Bandy:

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) at 40 CFR Part 1501.6, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) is requesting that you participate in project scoping and development of the City of Wilmot Area Watershed Plan and Environmental Assessment (Plan-EA). This request is being made because you may have special expertise or jurisdiction related to this project. The Plan-EA is being prepared to fulfill USDA-NRCS' NEPA compliance responsibilities pertaining to our potential federal financial assistance through the Watershed Protection and Flood Prevention Program (Public Law 83-566) for this project.

To satisfy the public involvement and consultation requirements for Section 106 of the National Historic Preservation Act (NHPA), USDA-NRCS is interested in learning whether the project has the potential to impact any significant archaeological, religious or cultural sites so that USDA-NRCS can factor that into its identification and evaluation of feasible alternatives during the NEPA documentation process.

The Arkansas Black Mayors Association (ABMA), the project sponsor and fiscal agent, has received funding to develop a Plan-EA for the City of Wilmot and surrounding small communities in Ashley County, Arkansas, which lie within one 12-digit and one 10-digit HUC watersheds. The city of Wilmot and the ABMA in collaboration, have documentation showing the significant problems caused by flooding from heavy rainstorm events over the past five years. The flood waters have damaged commercial and residential properties and displaced some Ashley County residents. Also, city streets, county roads, highways, and bridges continue to deteriorate from flood events that occur more frequently than normal. Therefore, the ABMA and USDA-NRCS are preparing this Plan-EA to evaluate alternatives to meet the needs and resource concerns of citizens in the watershed project area. The Plan-EA will consider alternatives for the City of Wilmot and surrounding areas and may include: 1) No Action (future without project), 2) Structural, 3) Non-Structural, and 4) Pie-in-the-sky.

With this letter, your agency is invited to participate in the project scoping process and to contribute to the development of the Plan EA. You are invited to a public scoping meeting scheduled from 6:00 to 7:45 pm (central standard time), November 16, 2023, at the Wilmot Community Center, 2764 Hwy 165 South, Wilmot, AR. Written comments must be postmarked or received by December 18, 2023, and can be submitted at the scoping meeting, by mail or electronically. The enclosed meeting notice provides more information about the scoping meeting and how to submit comments.

Thank you for your timely response and cooperation with this project. If you have any questions or comments, please contact Scott Smallwood of my staff at Christopher.Smallwood@usda.gov or via phone at 501-237-3142.

RANDY CHILDRESS

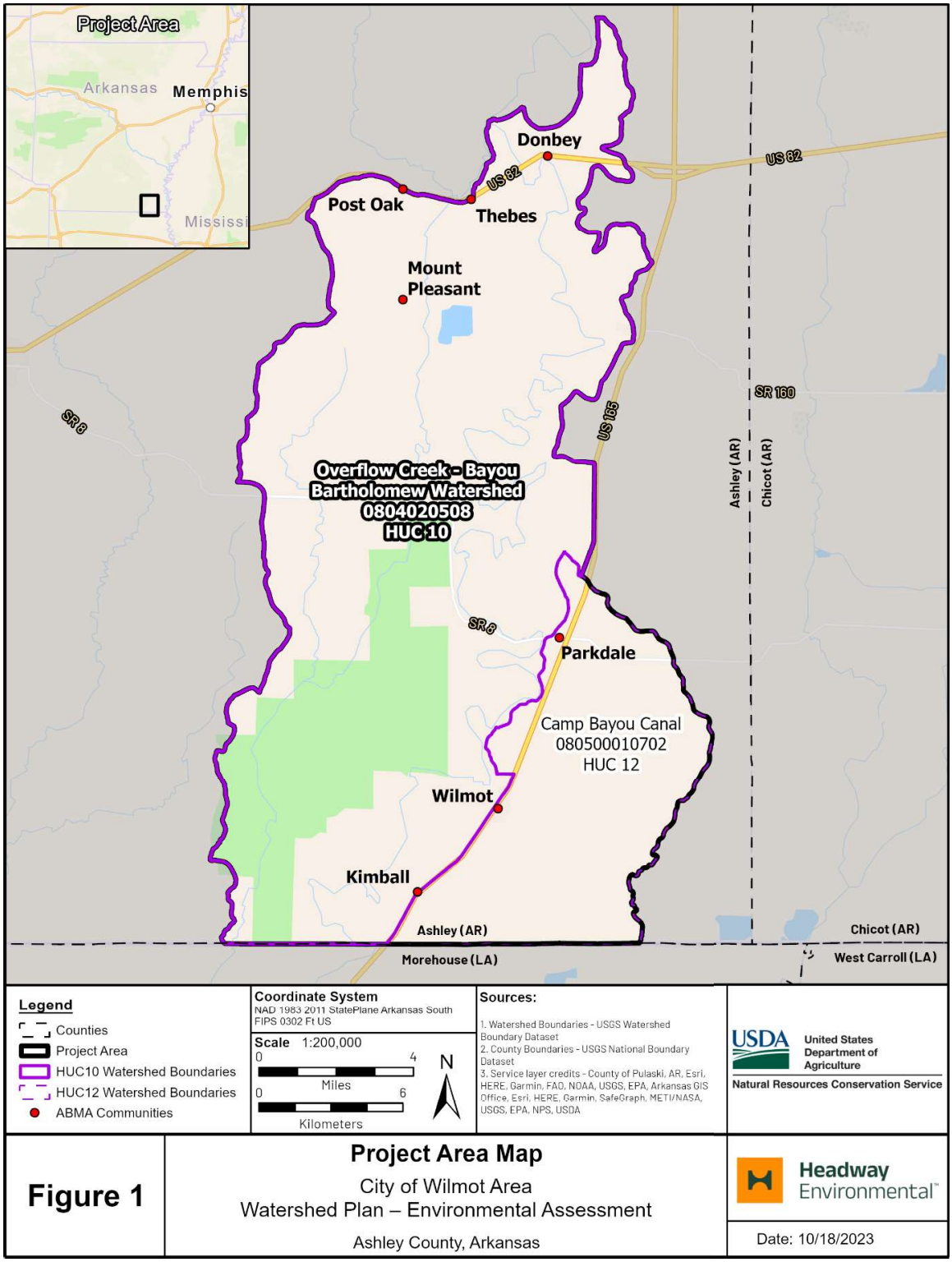
Digitally signed by RANDY CHILDRESS
Date: 2023.10.25 12:51:05 -05'00'

Michael E. Sullivan, State Conservationist
Natural Resources Conservation Service
Room 3416, Federal Building
700 West Capitol Avenue
Little Rock, AR 72201

Enclosures:

Project Area Map
Scoping Meeting Public Notice

Project Location Map



Public Notice
Scoping Meeting
City of Wilmot Area Watershed Project
November 16, 2023
Wilmot, Arkansas

The Arkansas Black Mayors Association, the project sponsor and fiscal agent, and the U.S. Department of Agriculture National Resources Conservation Service (USDA-NRCS) are beginning the planning process to develop a Watershed Plan and Environmental Assessment for the authorized purpose of flood prevention with an emphasis on benefits to people and property in Wilmot and surrounding small communities in Ashley County, Arkansas. The City of Wilmot Area Watershed Project is located in one 12-digit and one 10-digit HUC watersheds in Wilmot and surrounding areas of Ashley County, Arkansas. The project is authorized by Public Law 83-566, the Watershed and Flood Prevention Act of 1954, as amended. The USDA-NRCS invites members of the public and regulatory agencies to a Scoping Meeting on the watershed project.

The meeting will be:

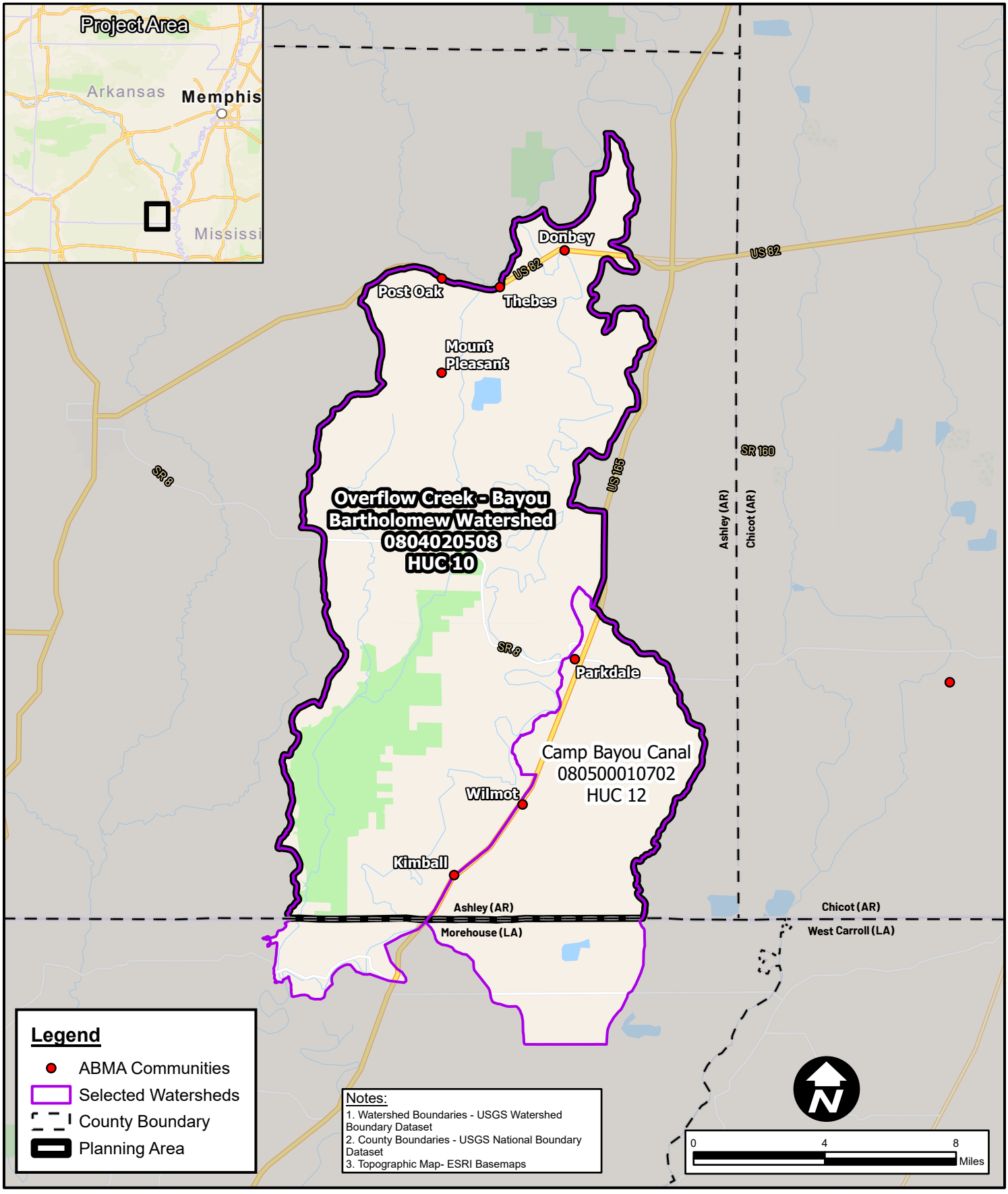
November 16, 2023
6:00 – 7:45 pm
Wilmot Community Center
2764 Hwy 165 South
Wilmot, Arkansas

The meeting will seek feedback and public participation consistent with the NRCS's watershed planning process and requirements of the National Environmental Policy Act (NEPA), which requires NRCS to review the potential impacts on the natural and human environments associated with the project. Public participation is welcome.

The meeting will include a presentation followed by an open-house, come-and-go forum, with information available on the proposed watershed project and the associated NEPA and watershed planning processes. NRCS invites all interested parties to attend and learn about the project, as well as provide comments and suggestions with respect to the scope of the proposed project.

Written comments must be postmarked or received by December 18, 2023 and may be submitted at the meeting; mailed to Headway Environmental, Attn: Lee Forbes at P.O. Box 1282, Humble, TX 77347; or submitted electronically to WilmotWatershedProject@headwayenviro.com.

Anyone interested in attending the meeting who has special communication or accommodation needs is encouraged to contact Bill Kinkaid at william.kinkaid@usda.gov or via phone at 501-301-3127 in advance of the meeting. Every reasonable effort will be made to meet the requested special accommodation.



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

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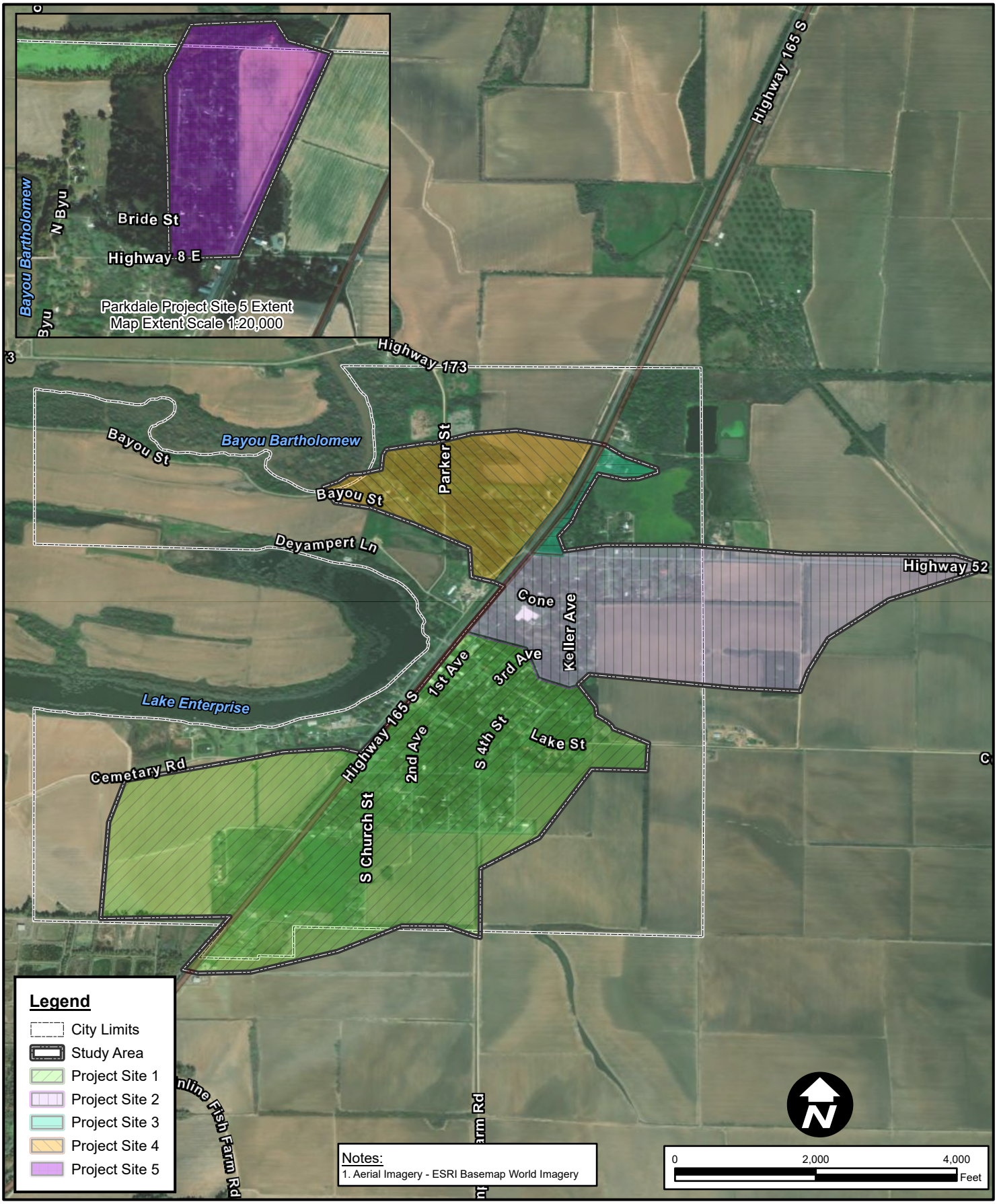
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Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

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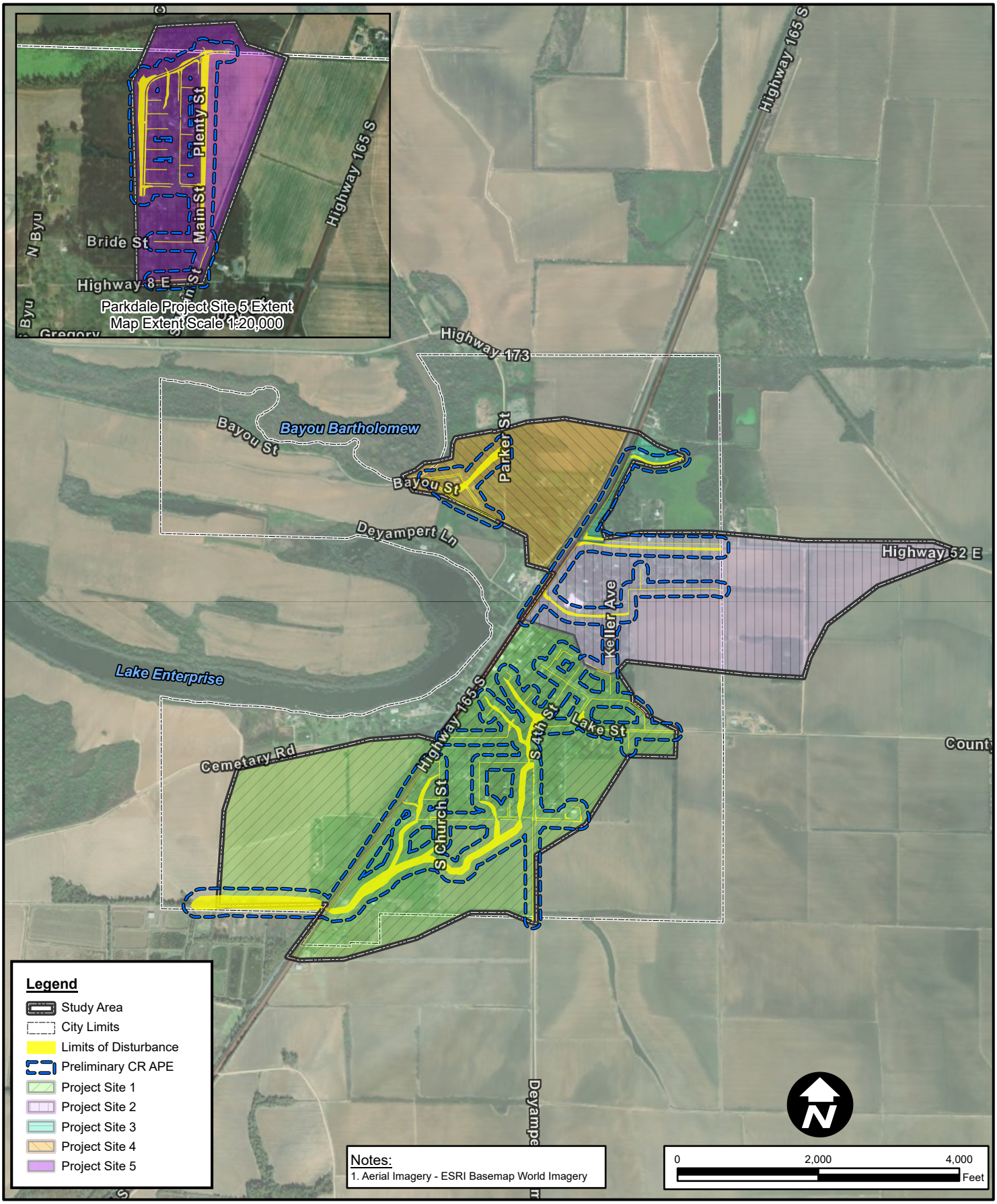
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
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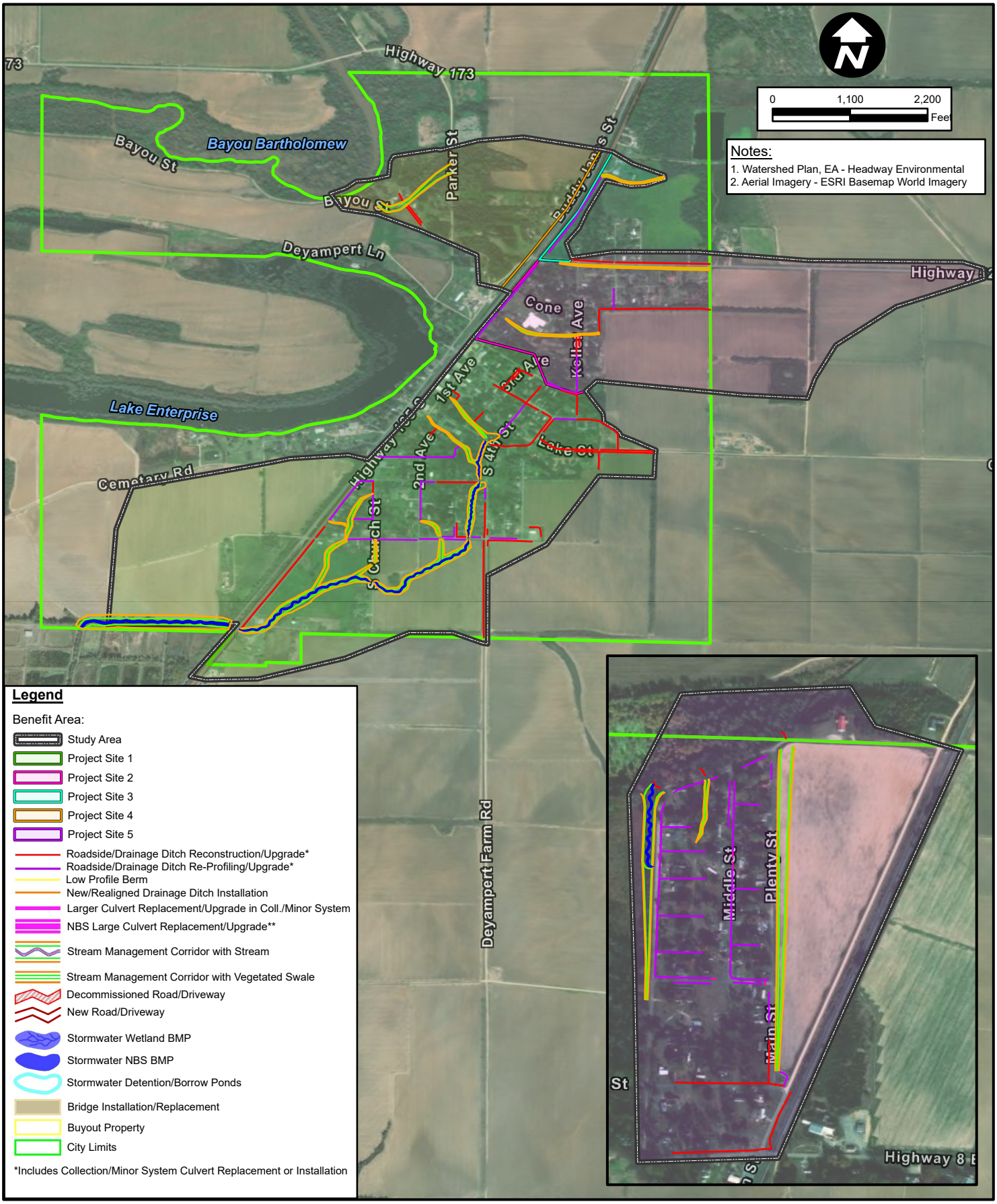
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LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Mr. Jeremy Fultz
Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Post Office Box 1498
Wewoka, Oklahoma 74884

Dear Mr. Fultz:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

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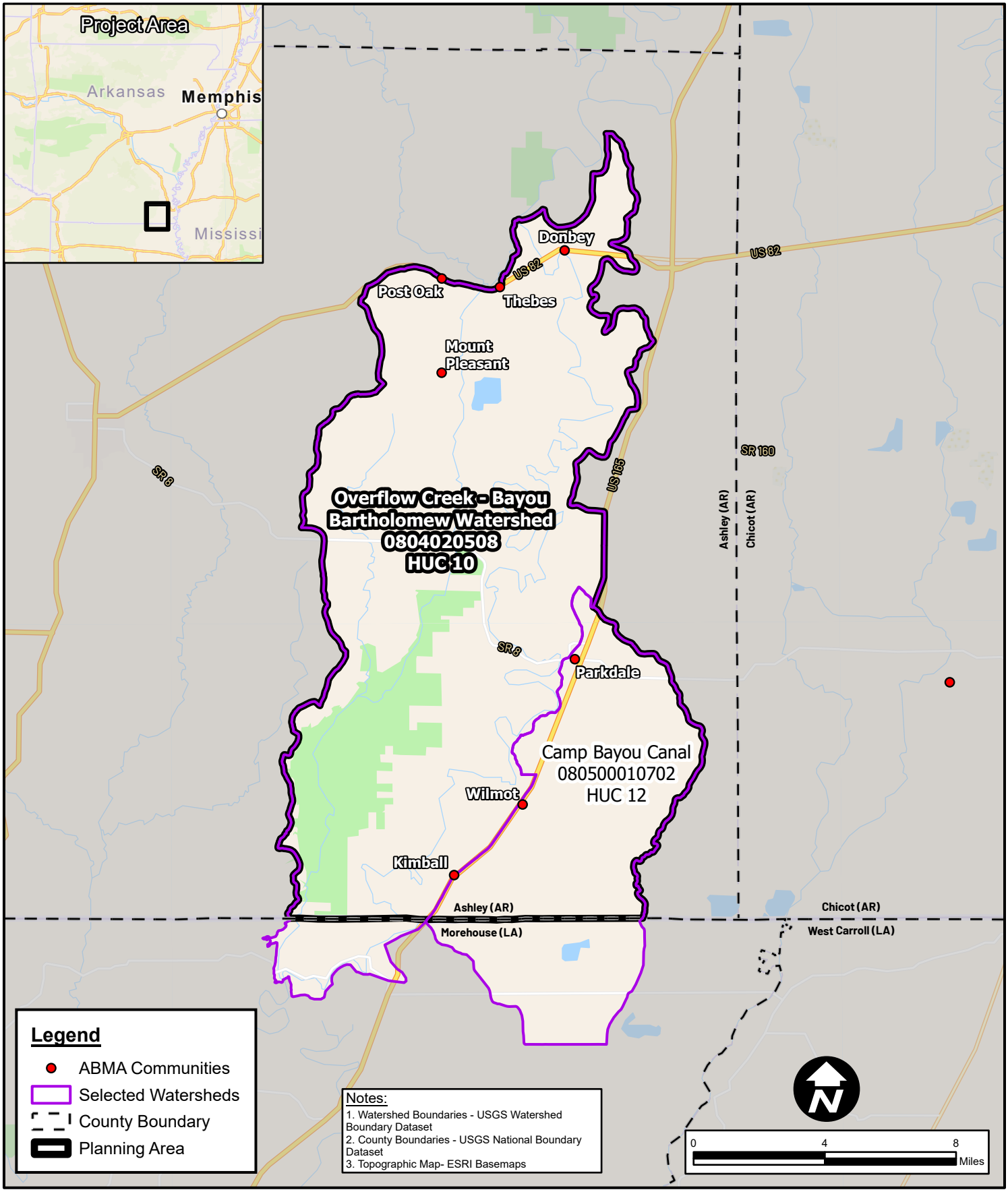
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Sincerely,

Amanda J. Mathis
State Conservationist

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Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

Additionally, these archaeological sites and AHPP resources are located within a one mile radius of these project sites: [redacted]

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Alternative 6A/Maximum Net Monetized Benefit (MNMB) Alternative combines the Nature Based Solutions (NBS)-Focused Alternatives for each of the five Project Sites. Alternative 6A includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
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- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels.
- Decommission and remove 0.3 ac of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 structures.

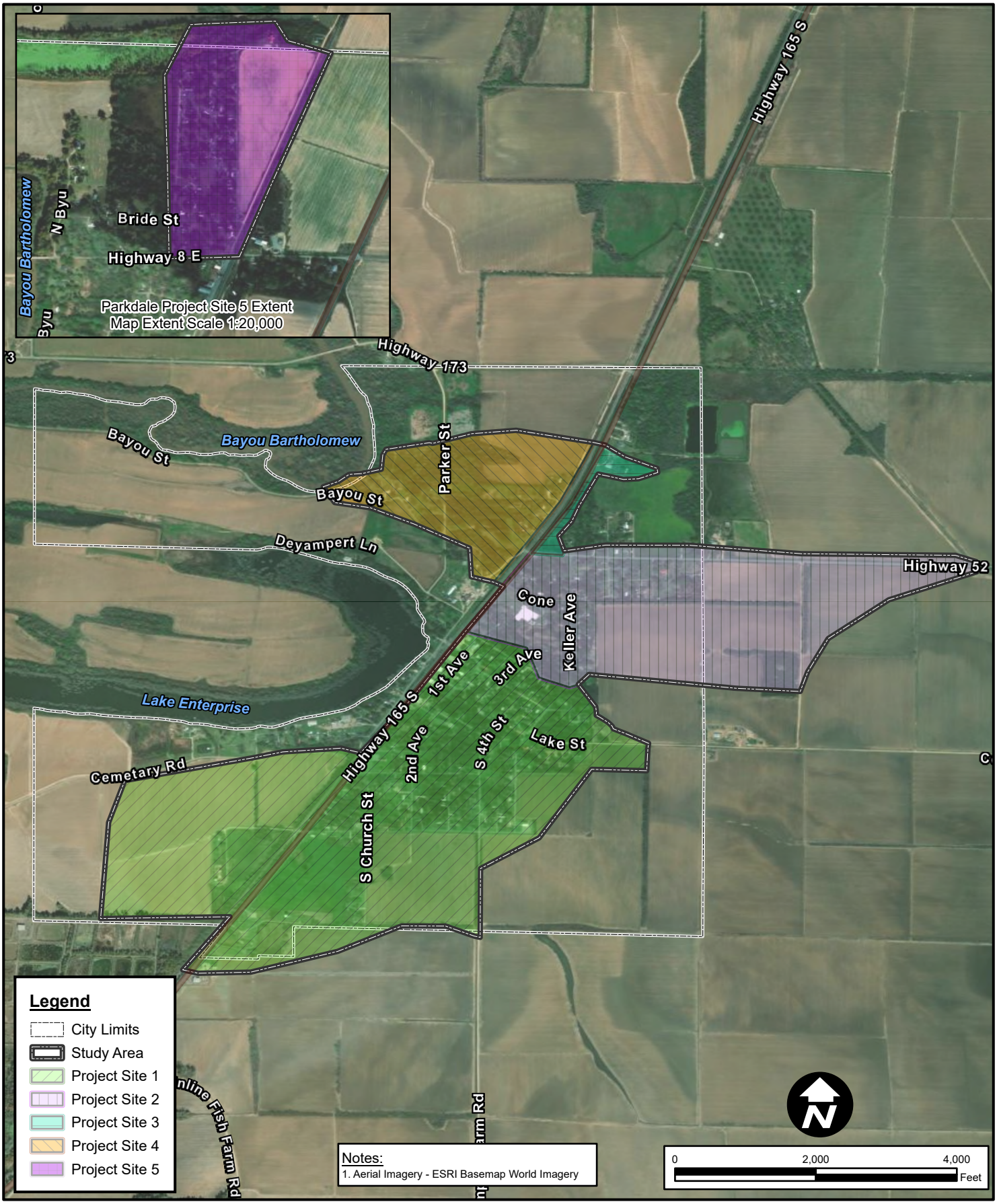
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Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
- Install 19,929 LF of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels.
- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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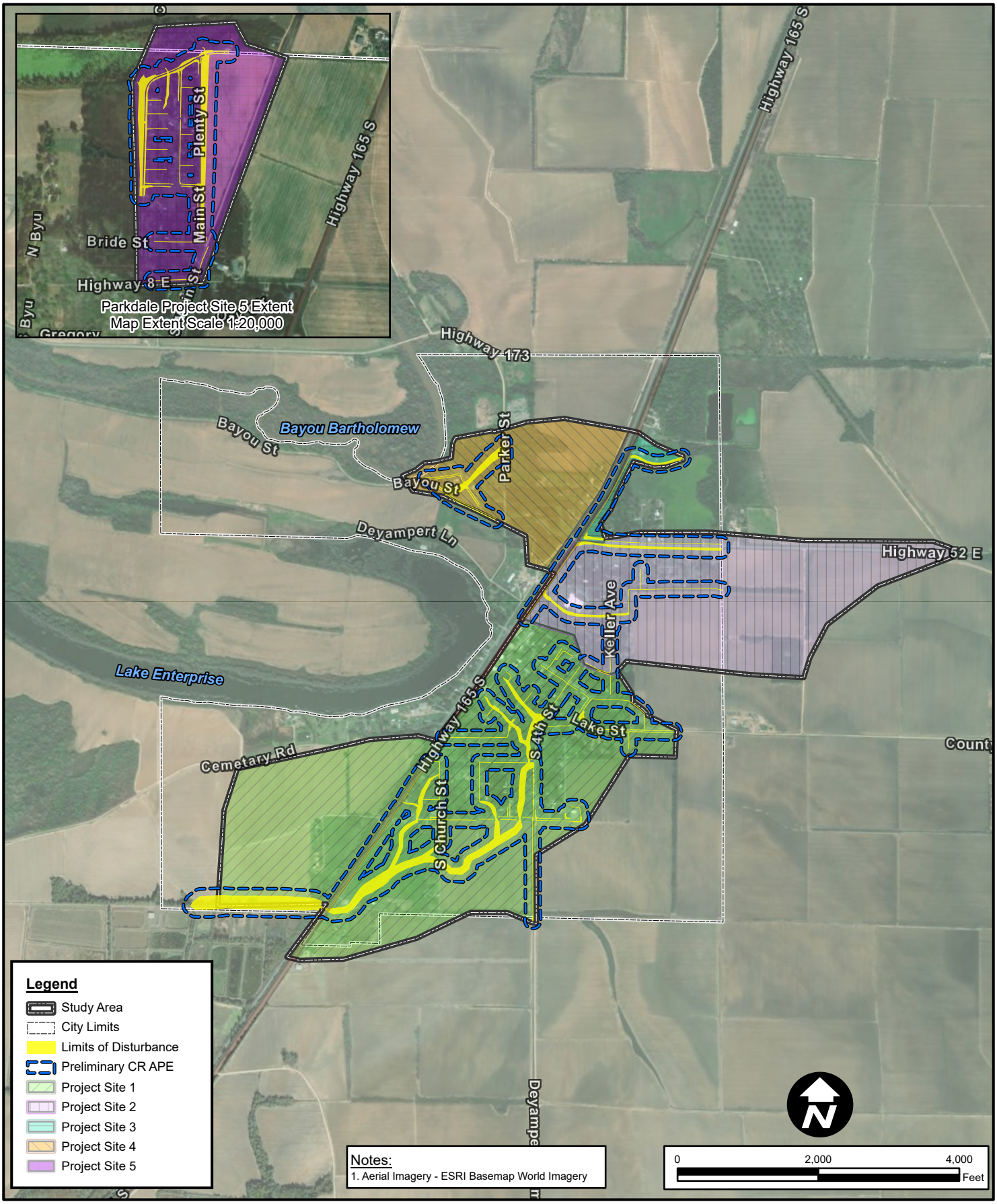
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

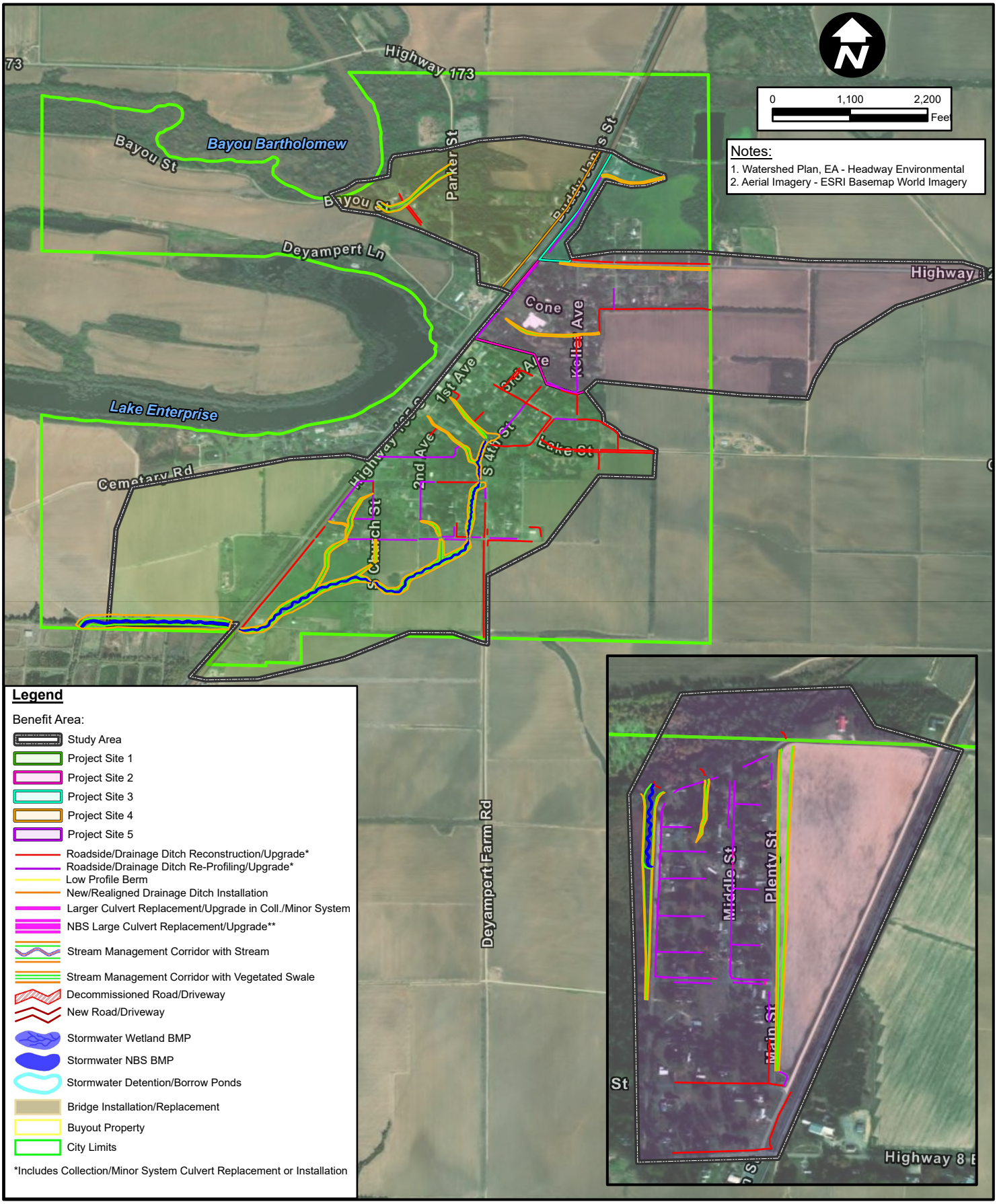
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Ms. Tonya Tipton
Tribal Historic Preservation Officer
Shawnee Tribe
Post Office Box 189
Miami, Oklahoma 74335

Dear Ms. Tipton:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the Shawnee Tribe regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the Shawnee Tribe in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

The NRCS respects the authority of the Shawnee Tribe as a sovereign nation. If at any time you wish to formally share your interests, recommendations, and concerns directly with NRCS, please notify the State Conservation Engineer, Stephen Smedley at Stephen.Smedley@usda.gov, (501) 301-3141 and Resource Conservationist, Bill Kinkaid William.Kinkaid@usda.gov, (501) 301-3127.

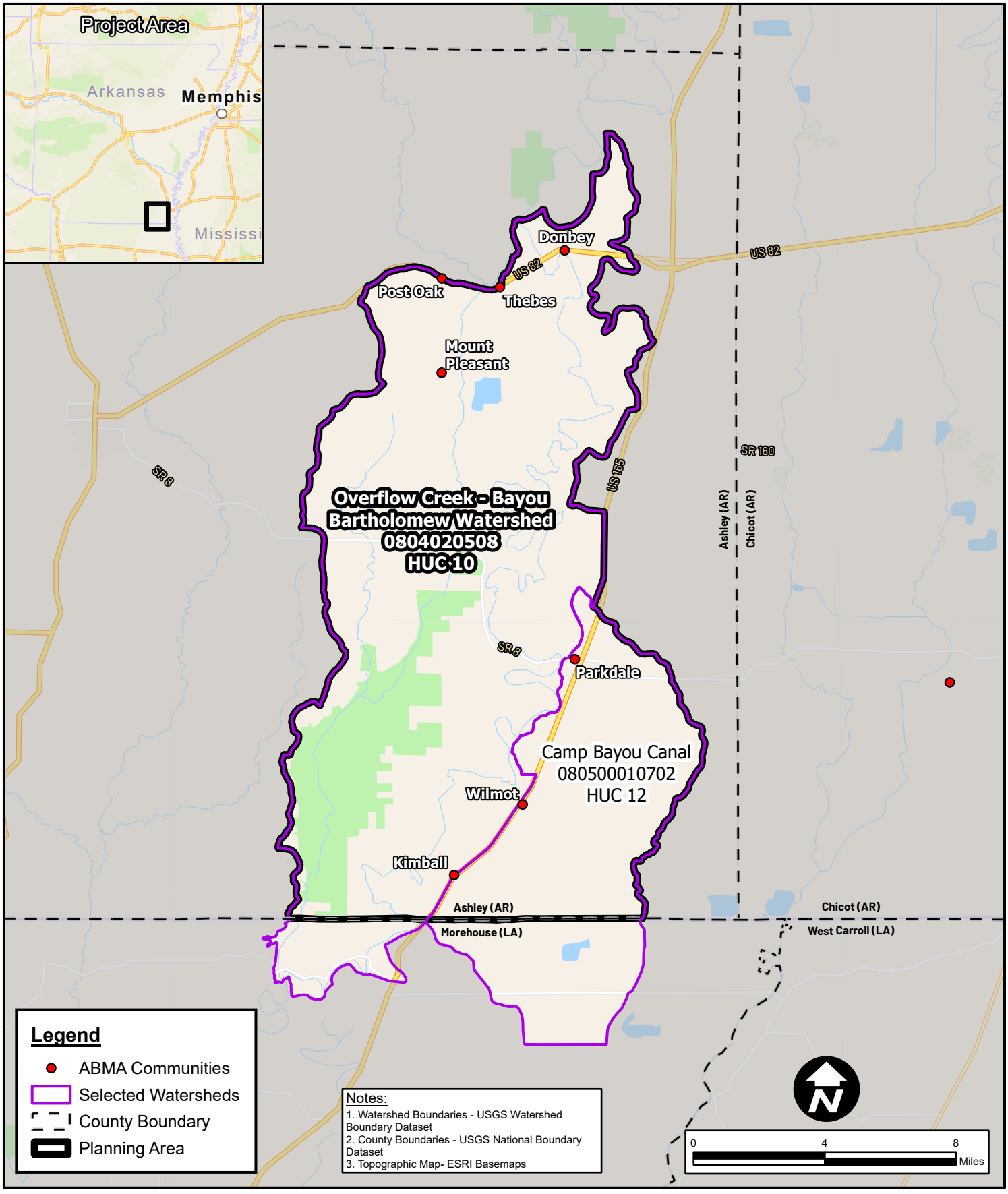
Sincerely,



Amanda J. Mathis
State Conservationist

Enclosures:
Project Area Maps
Descriptions of Alternatives
Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
Cara Mosier, Cultural Resources Specialist for Watersheds, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
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PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

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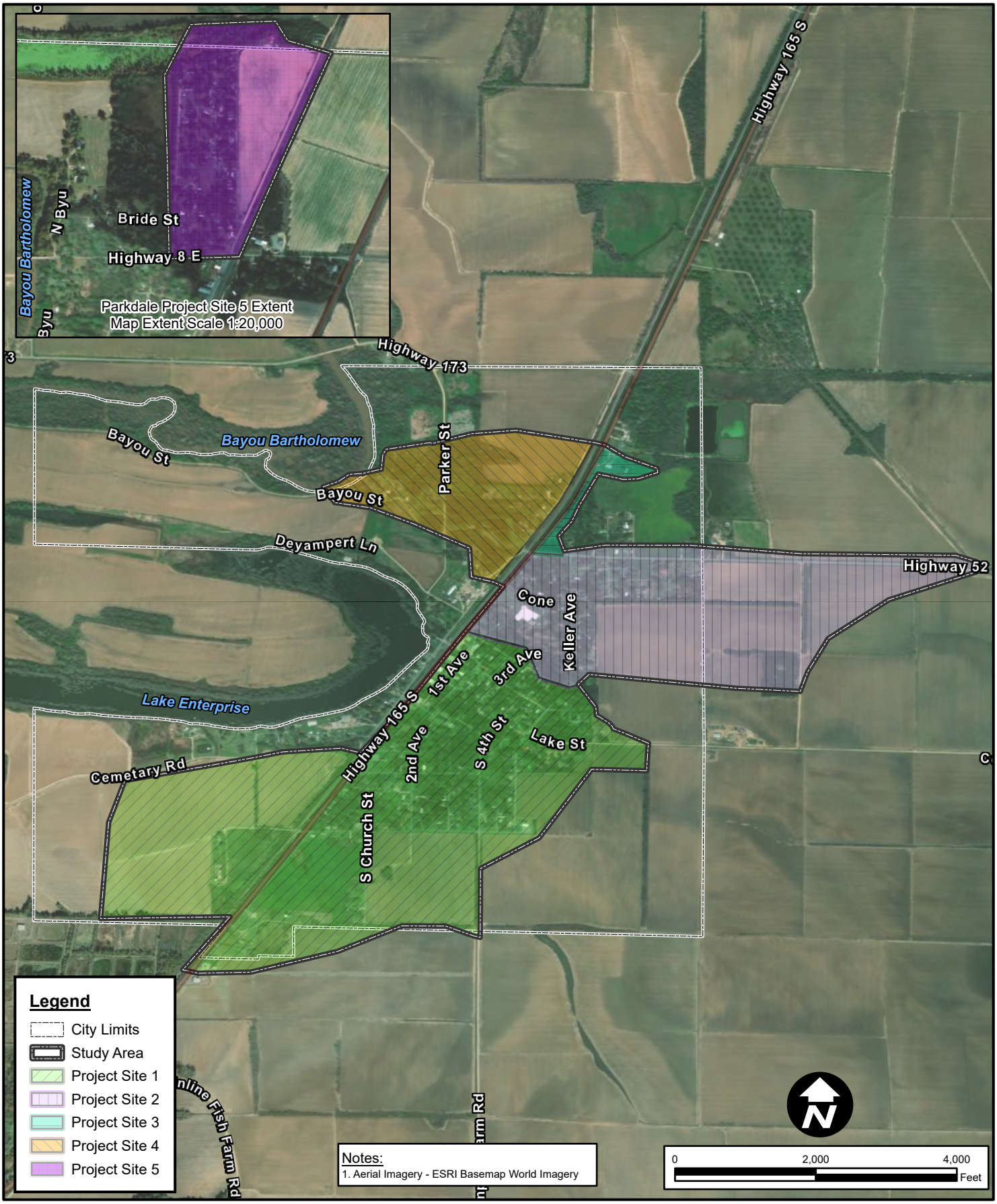
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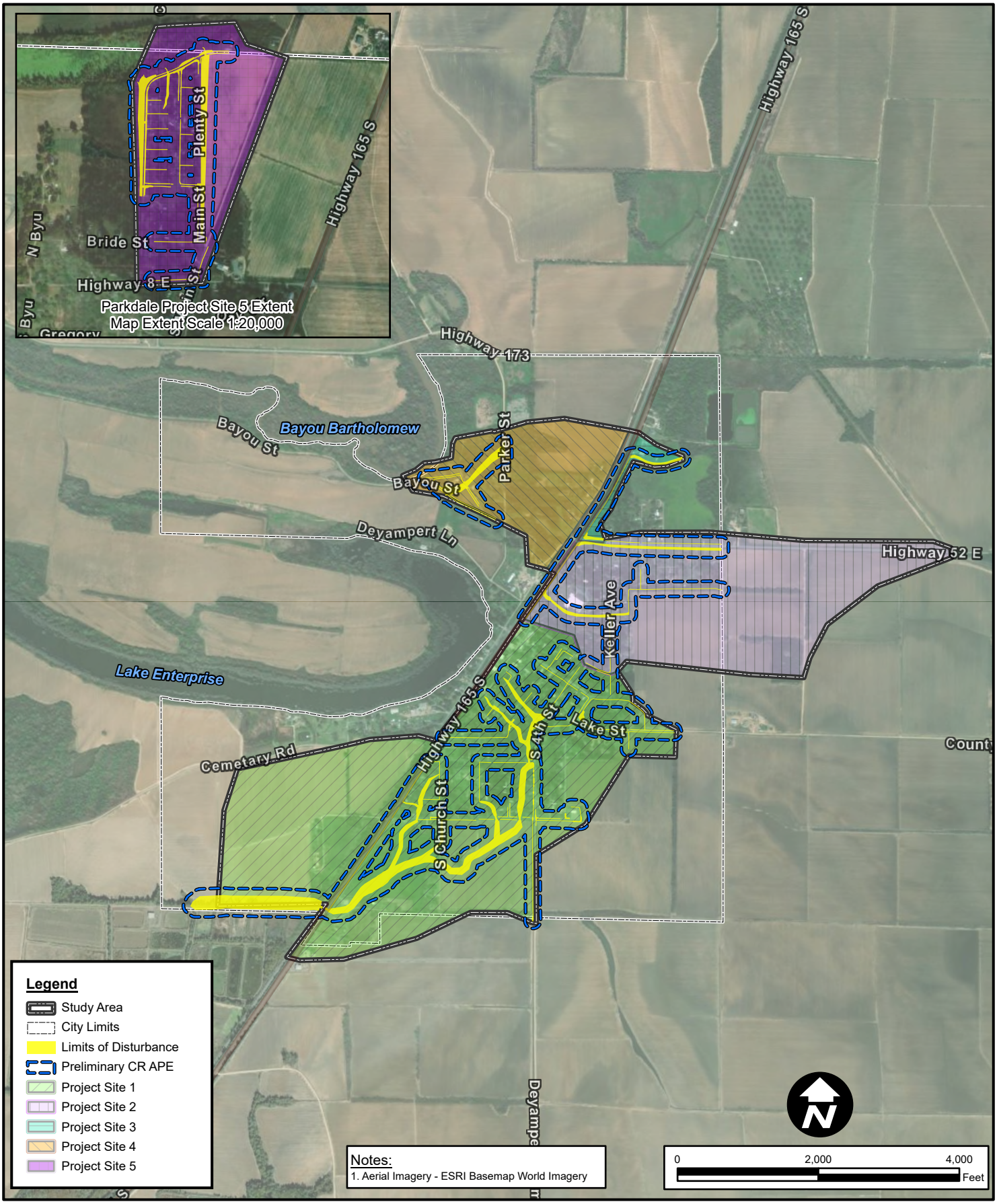
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

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USDA NRCS
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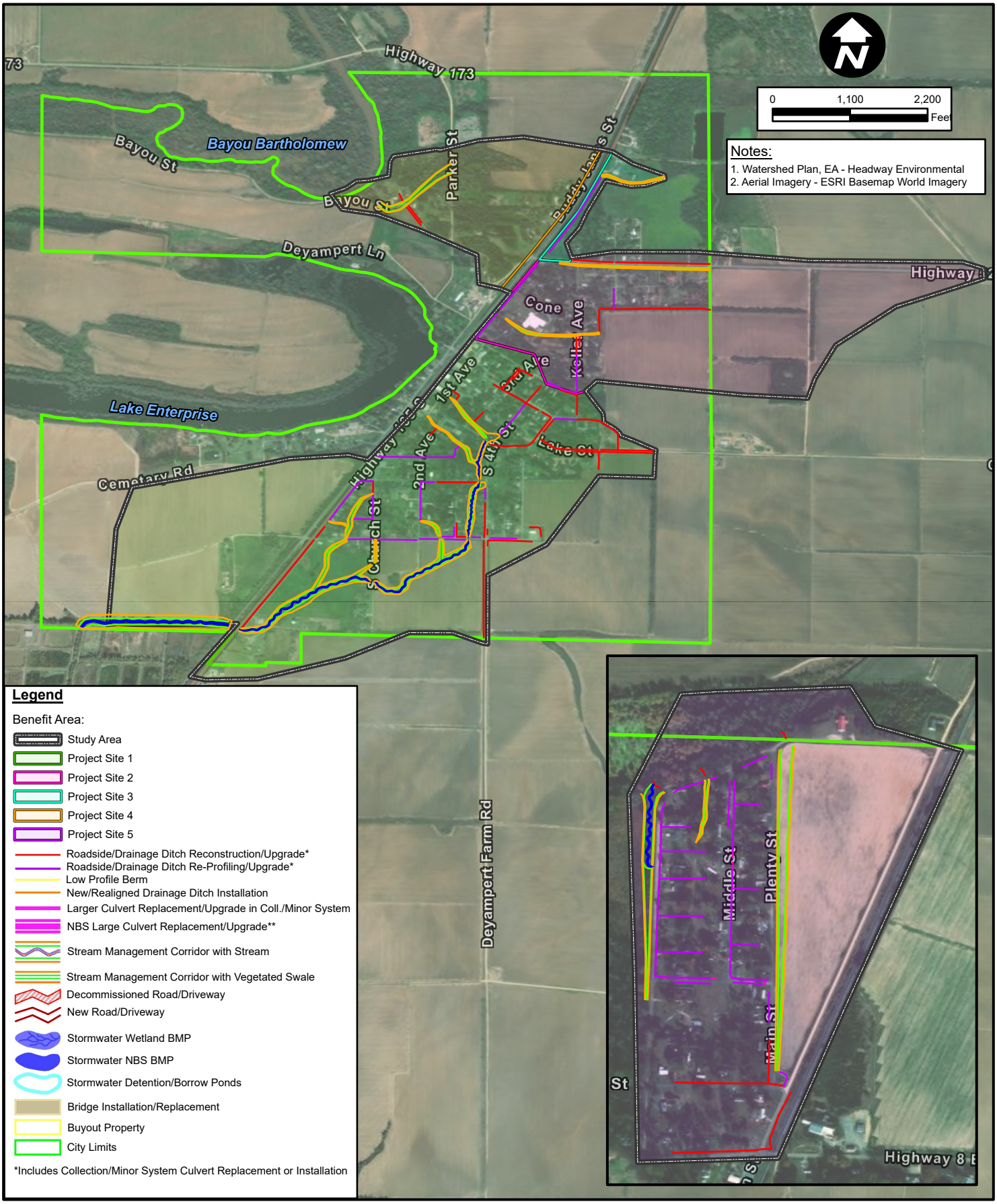
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LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

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City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 01 2026

Mr. David Frank
Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
Post Office Box 188
Okemah, Oklahoma 74859

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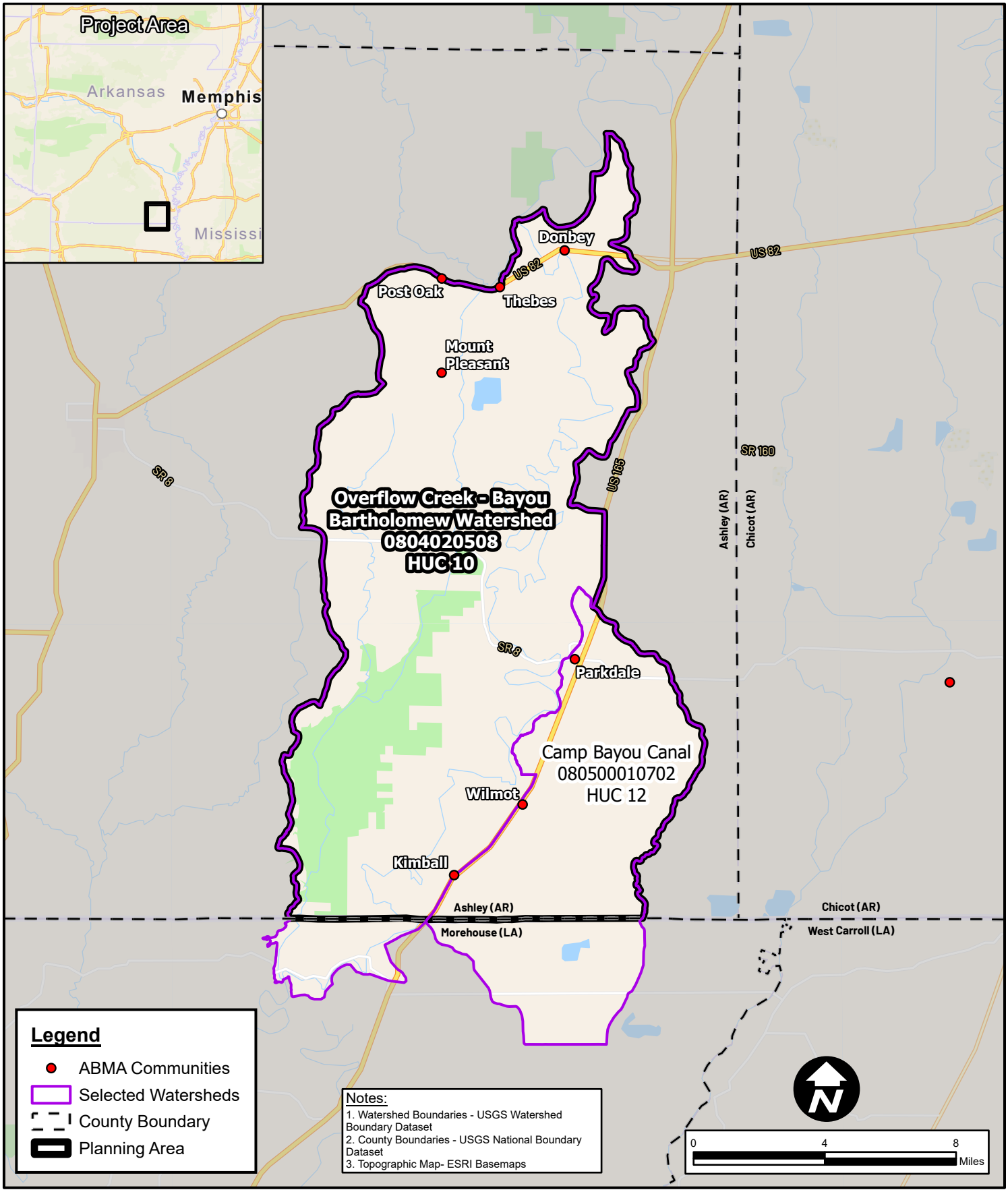
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PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

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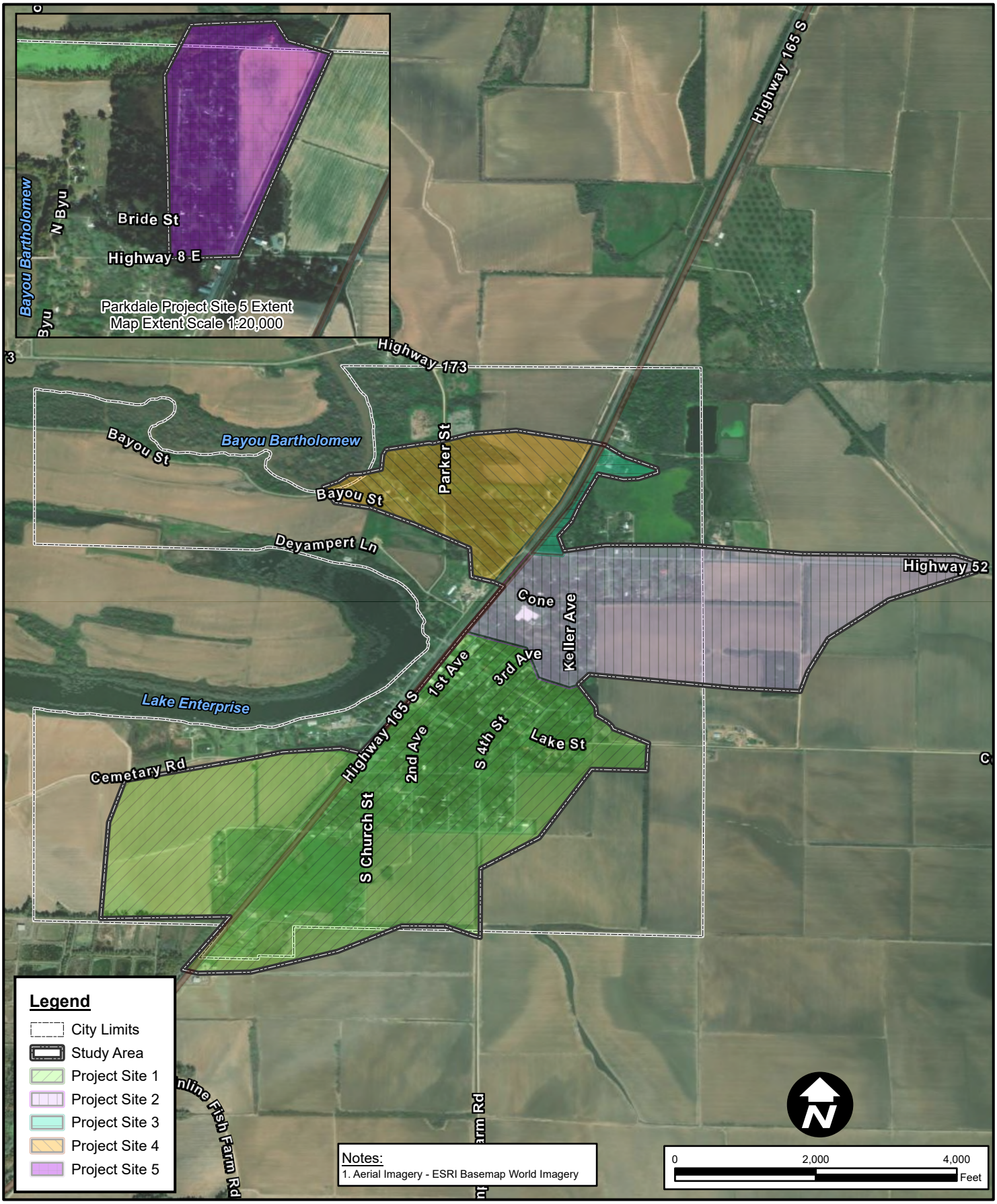
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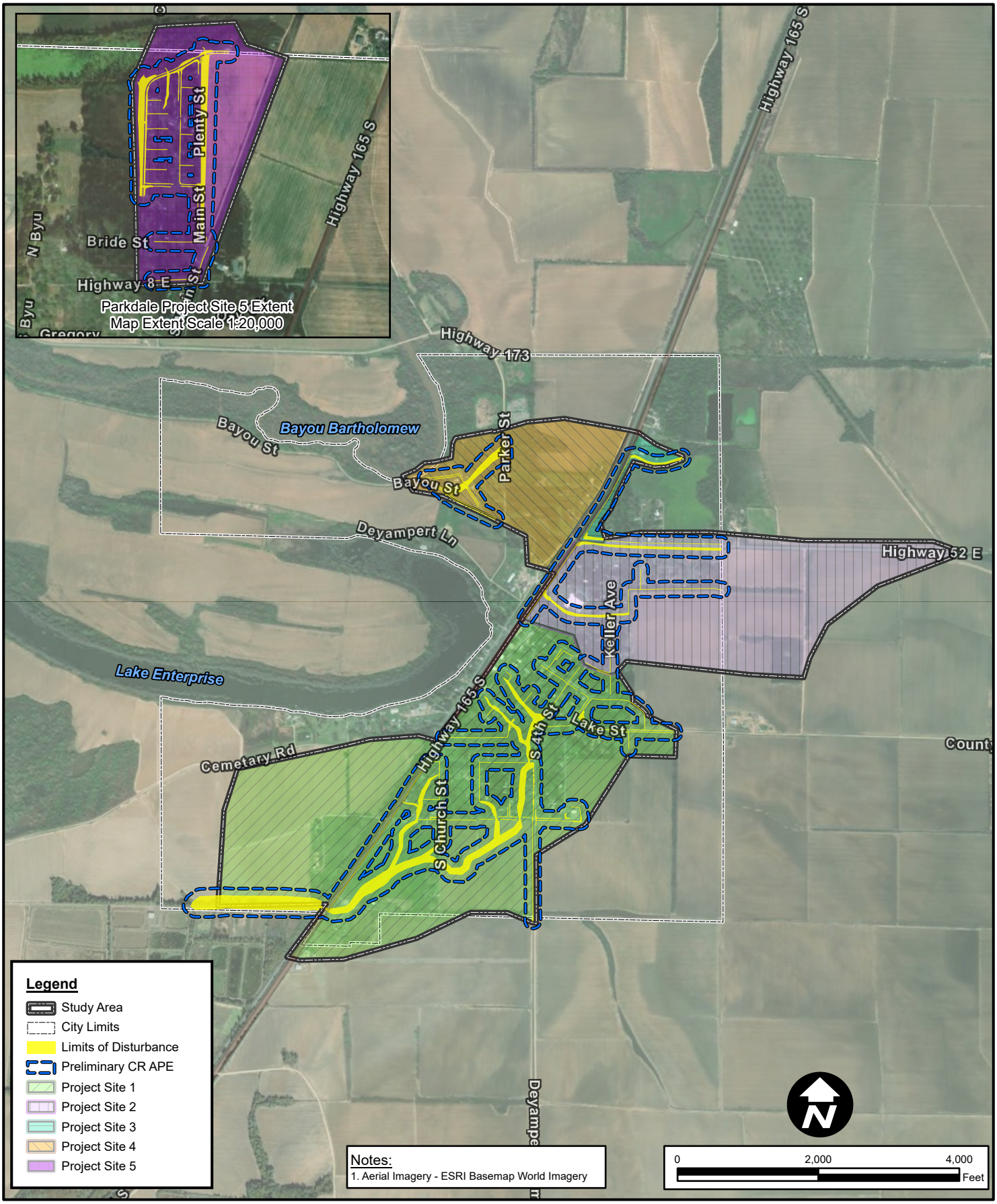
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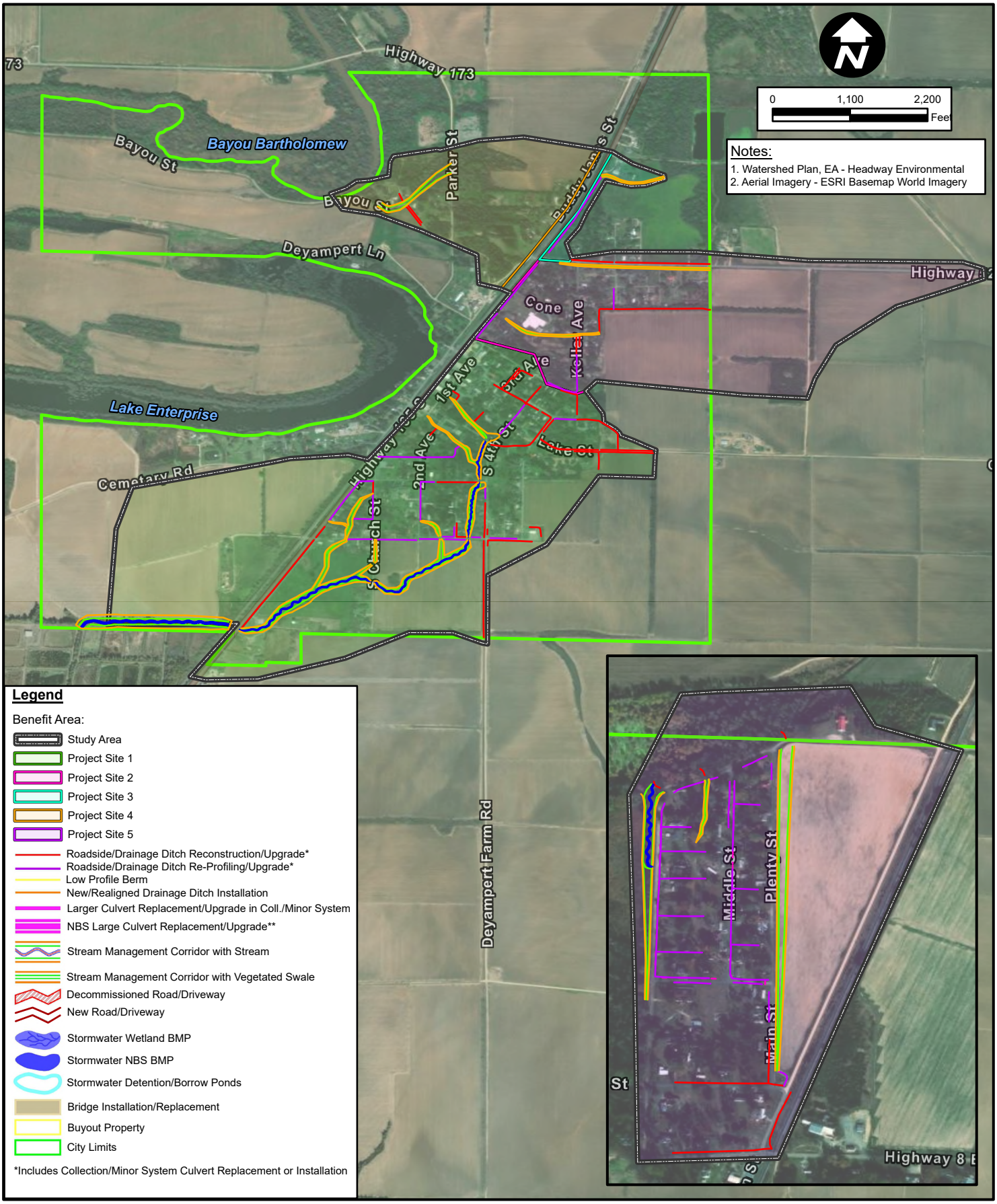
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LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Mr. Earl J. Barbry, Jr.
Tribal Historic Preservation Officer
Tunica-Biloxi Tribe of Louisiana
150 Melacon Road
Marksville, Louisiana 71351

Dear Mr. Barbry:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

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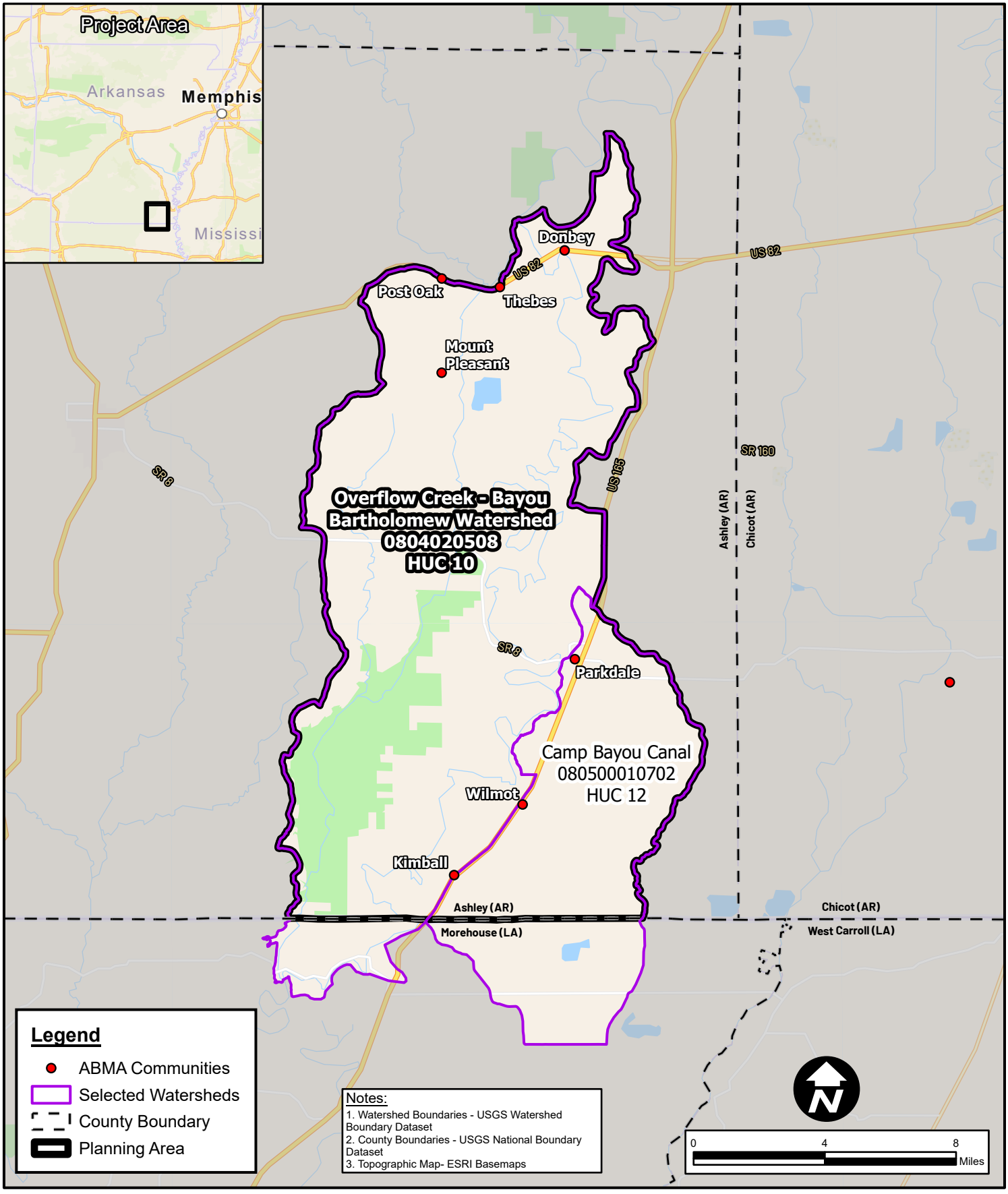
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Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

cc:
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C. Scott Smallwood, State Cultural Resources Specialist, Natural Resources Conservation Service, Lonoke Technical Service Center, 215 West Front Street, Lonoke, Arkansas 72086
Stephen Smedley, State Conservation Engineer, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201
Bill Kinkaid, Resource Conservationist, Natural Resources Conservation Service, 700 West Capitol, Room 3416, Federal Building, Little Rock, Arkansas 72201



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

Alternatives Descriptions:

There are three alternatives considered for a detailed analysis, including one No Action/Future Without Federal Involvement alternative (FWOFI) alternative and two action alternatives (Alternatives 6A and 6B). However, the preferred alternative is Alternative 6A. Both action alternatives are composed of five areas of improvement, named Project Sites, that are nearly identical. Four are within the City of Wilmot and one is within the City of Parkdale. Please note that these areas are not our formal Section 106 Areas of Potential Effect (APE), but rather they are preliminary study areas meant to provide a potential location for works of improvement. The formal APE will be finalized through consultation during the design phase, per the statewide NRCS AR WFPO Programmatic Agreement. Brief descriptions of each alternative are provided below.

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- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Cleanout, repair, and in some locations, reprofile and/or realign 34,637 linear feet (LF) of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the City of Wilmot and City of Parkdale's collection/minor drainage systems.
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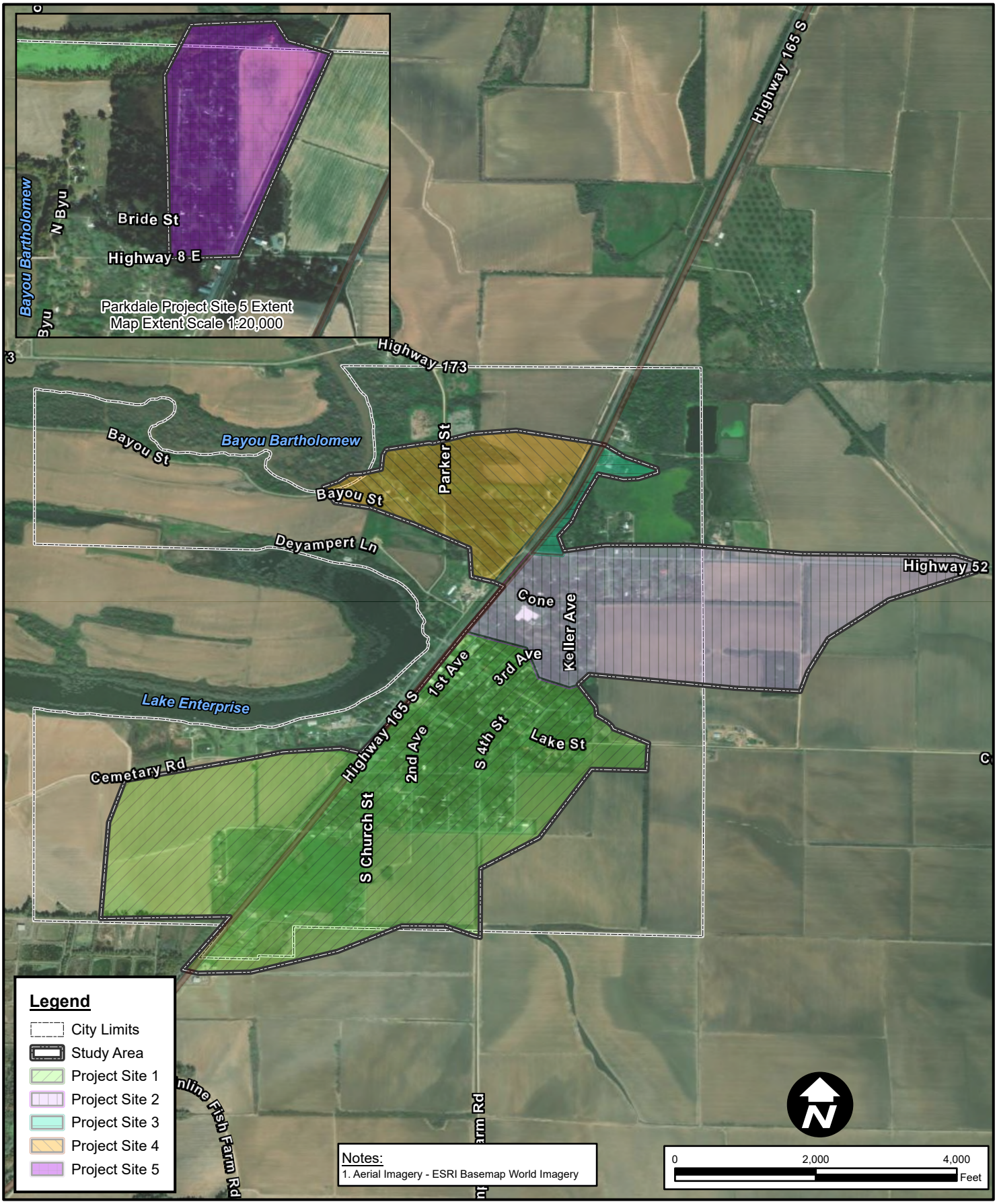
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Alternative 6B: Combined Traditional-Focused Alternative

Alternative 6B combines the Traditional-Focused Alternatives for the each of the five Project Sites. Alternative 6B includes the following works of improvement:

- Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 acre.
- Reconstruct, reprofile and/or realign and upgrade 34,637 LF of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems.
- Install 19,929 LF of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.
- Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels.
- Decommission and remove 0.3 acre of small city streets and install 3,780 LF of alternate access roads or driveways.
- Buyout and remove 10 residential structures.

Alternative 6B will provide flood-risk reduction and flood-damage mitigation using a combination of traditional and limited NBS measures. A combination of onsite/local stormwater bioretention cells and SWQs, upgraded collection/minor drainage systems, and installation of riprap-armored flood-control channels will substantially reduce flooding frequency and depths for the 100-year, 24-hour event in the Study Area.



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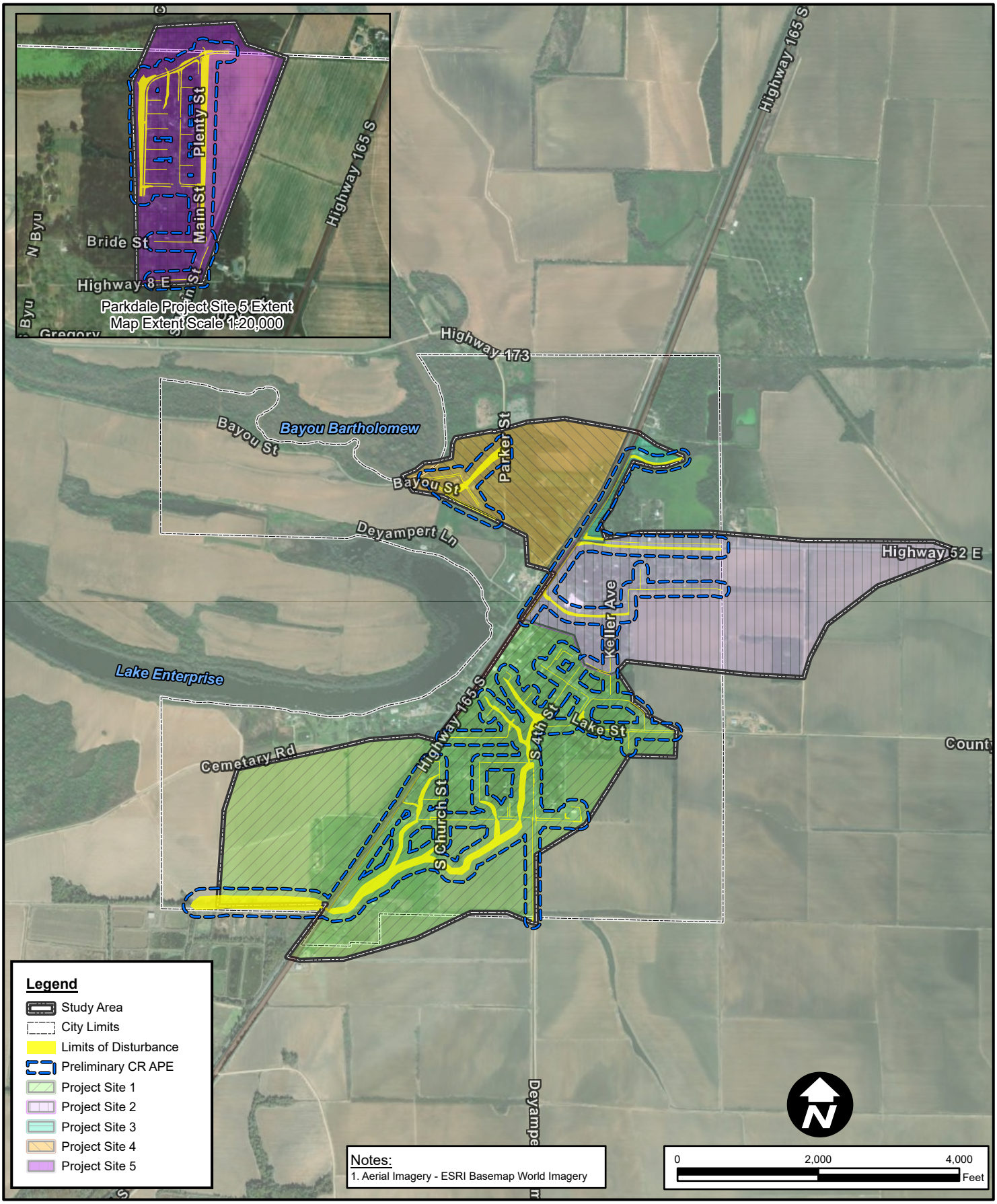
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

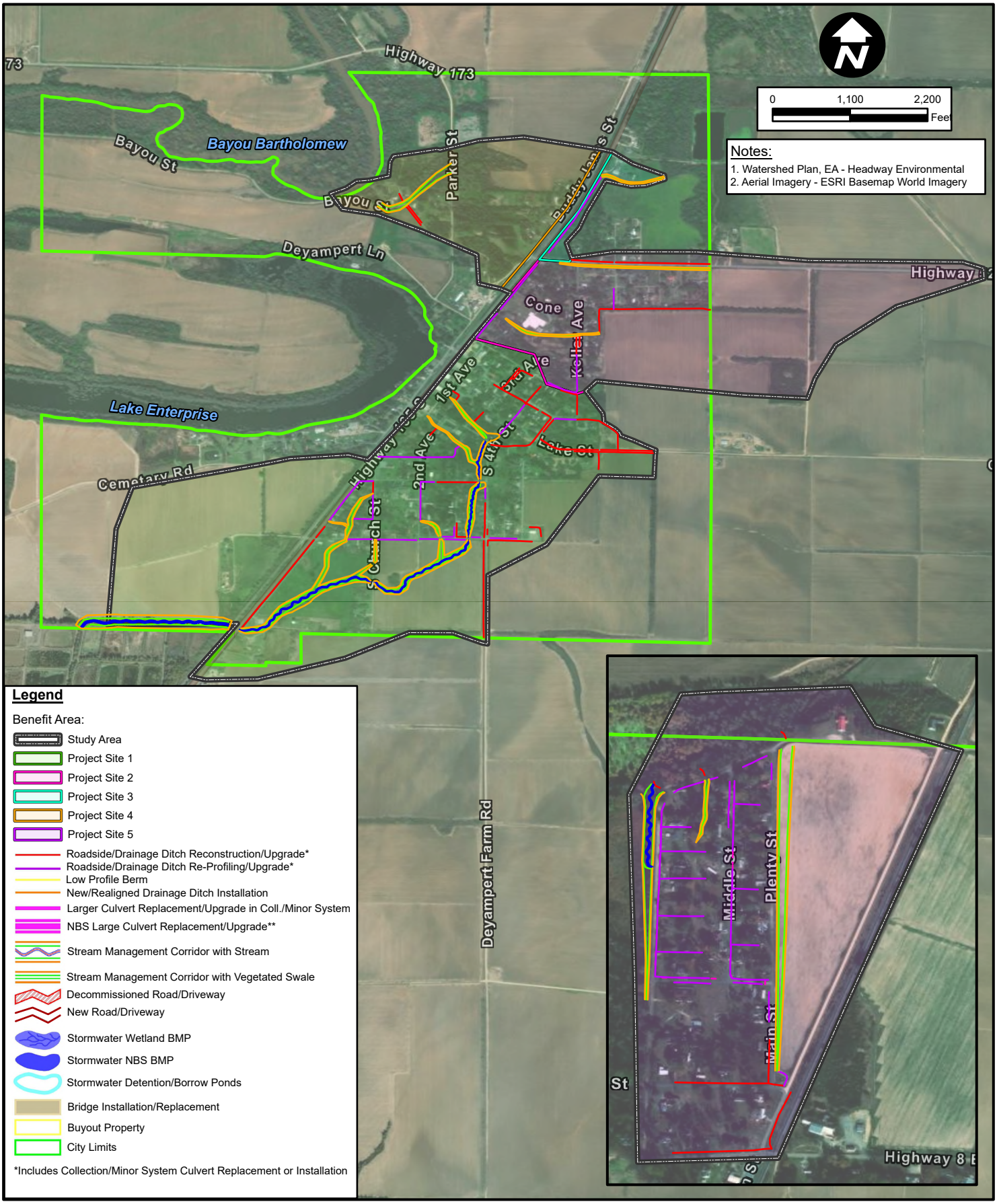
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

VIA EMAIL

SEP 0 1 2026

Mr. Roger Cain
Tribal Historic Preservation Officer
United Keetoowah Band of Cherokee Indians in Oklahoma
Post Office Box 746
Tahlequah, Oklahoma 74465

Dear Mr. Cain:

SUBJECT: USDA-NRCS City of Wilmot Watershed Project, Ashley County, Arkansas – Initiating Section 106 Consultation

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) in Arkansas is working with the Arkansas Black Mayors Association (ABMA) to address flooding in and around the cities of Wilmot and Parkdale in Ashley County. NRCS AR is writing to initiate consultation with the United Keetoowah Band of Cherokee Indians in Oklahoma regarding this project under Section 106 of the National Historic Preservation Act (NHPA) and to present the proposed alternatives.

Using Watershed Protection and Flood Prevention Act (Public Law 83-566) funding made possible through the Bipartisan Infrastructure Law of 2021 (BIL, Public Law 117-58), the City of Wilmot Watershed Project is seeking to reduce flood damage to residential, agricultural, and commercial infrastructure in the Overflow Creek-Bayou Bartholomew watershed (HUC 10). Solutions under consideration include buyout and house removal, new storm drains, street replacements, and channel/ditch/culvert improvements. These measures are proposed both in the surrounding areas of and within the cities of Wilmot and Parkdale in Ashley County, Arkansas.

Enclosed with this letter are project area maps, descriptions and maps of the proposed alternatives, and maps depicting any previously recorded archaeological and Arkansas Historic Preservation Program (AHPP) resources within a one mile radius of each alternative. Currently, the final location, number, and extent of these proposed measures are still undetermined.

Due to the size and scope of PL 83-566 watershed projects, NRCS Arkansas has determined that the identification and assessment of effects to historic properties that may be affected by these projects cannot be fully determined prior to the approval of such undertakings. On August 6, 2025, through valuable consultation with our partners, we executed a Statewide Programmatic Agreement (Agreement) which details this phased process. This Agreement was enclosed in two of the previous project submissions, for the Cities of Turrell and Dumas, and covers this project, as well as any subsequent PL 83-566 projects. Upon request, this Agreement can be emailed separately to your nation.

NRCS recognizes the important role of the United Keetoowah Band of Cherokee Indians in Oklahoma in the Section 106 process, and we value the special expertise and knowledge you and your staff possess. We appreciate any assistance or feedback you or your staff can provide regarding these alternatives. We look forward to the opportunity to collaborate to assist the cities of Wilmot and Parkdale.

If you have any questions or need additional information, please reach out electronically to either the NRCS Cultural Resources Specialist for Watersheds for Arkansas, Ms. Cara Mosier at Cara.Mosier1@usda.gov, (501) 237-3136 or the NRCS Cultural Resources Specialist/Coordinator for Arkansas, Mr. C. Scott Smallwood at Christopher.smallwood@usda.gov, (501) 237-3142.

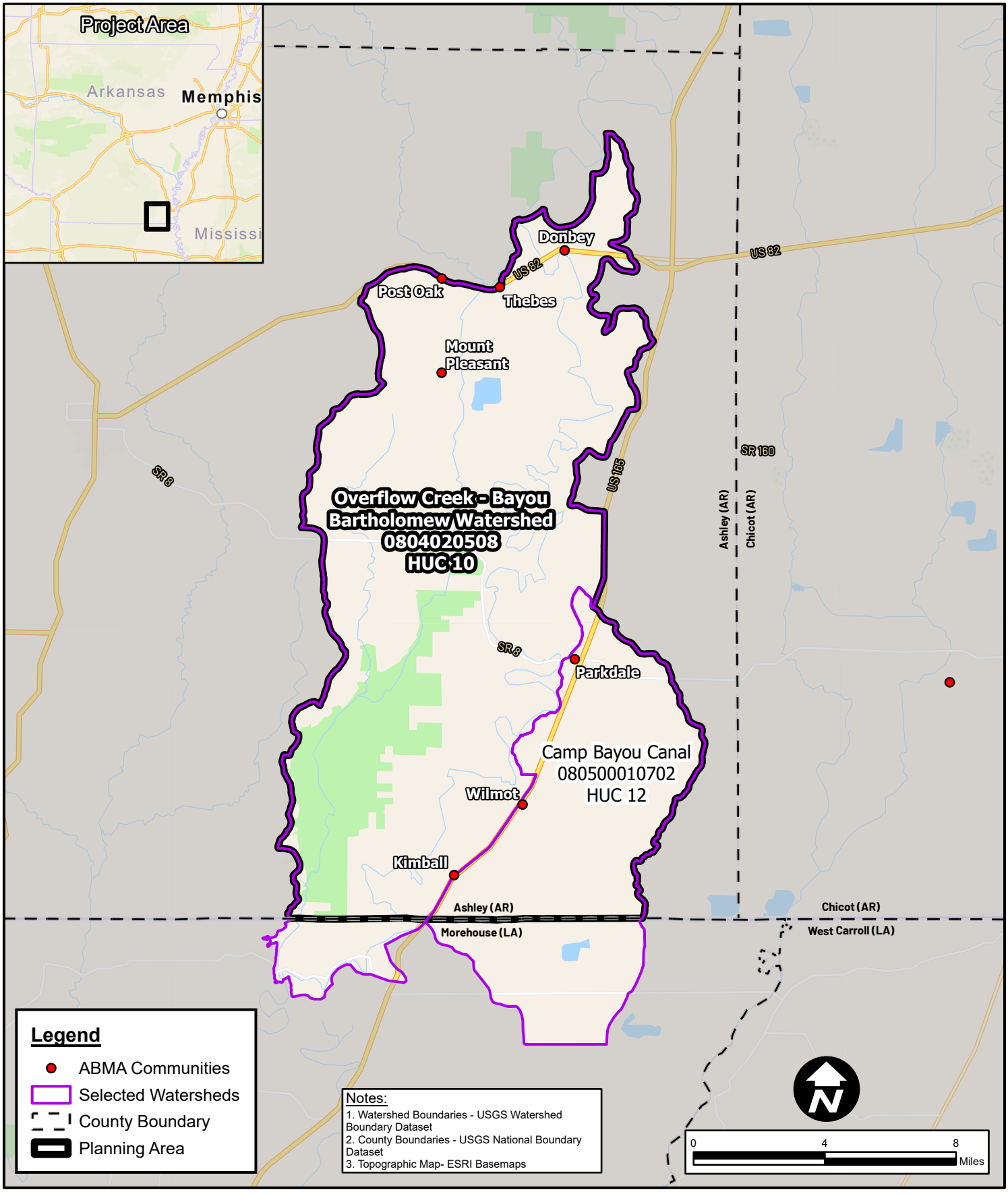
The NRCS respects the authority of the United Keetoowah Band of Cherokee Indians in Oklahoma as a sovereign nation. If at any time you wish to formally share your interests, recommendations, and concerns directly with NRCS, please notify the State Conservation Engineer, Stephen Smedley at Stephen.Smedley@usda.gov, (501) 301-3141 and Resource Conservationist, Bill Kinkaid William.Kinkaid@usda.gov, (501) 301-3127.

Sincerely,

Amanda J. Mathis
State Conservationist

Enclosures:
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Alternative Maps
Maps of Archaeological Sites and AHPP Resources Nearby to Alternatives

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United States Department of Agriculture
Natural Resources Conservation Service

PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental

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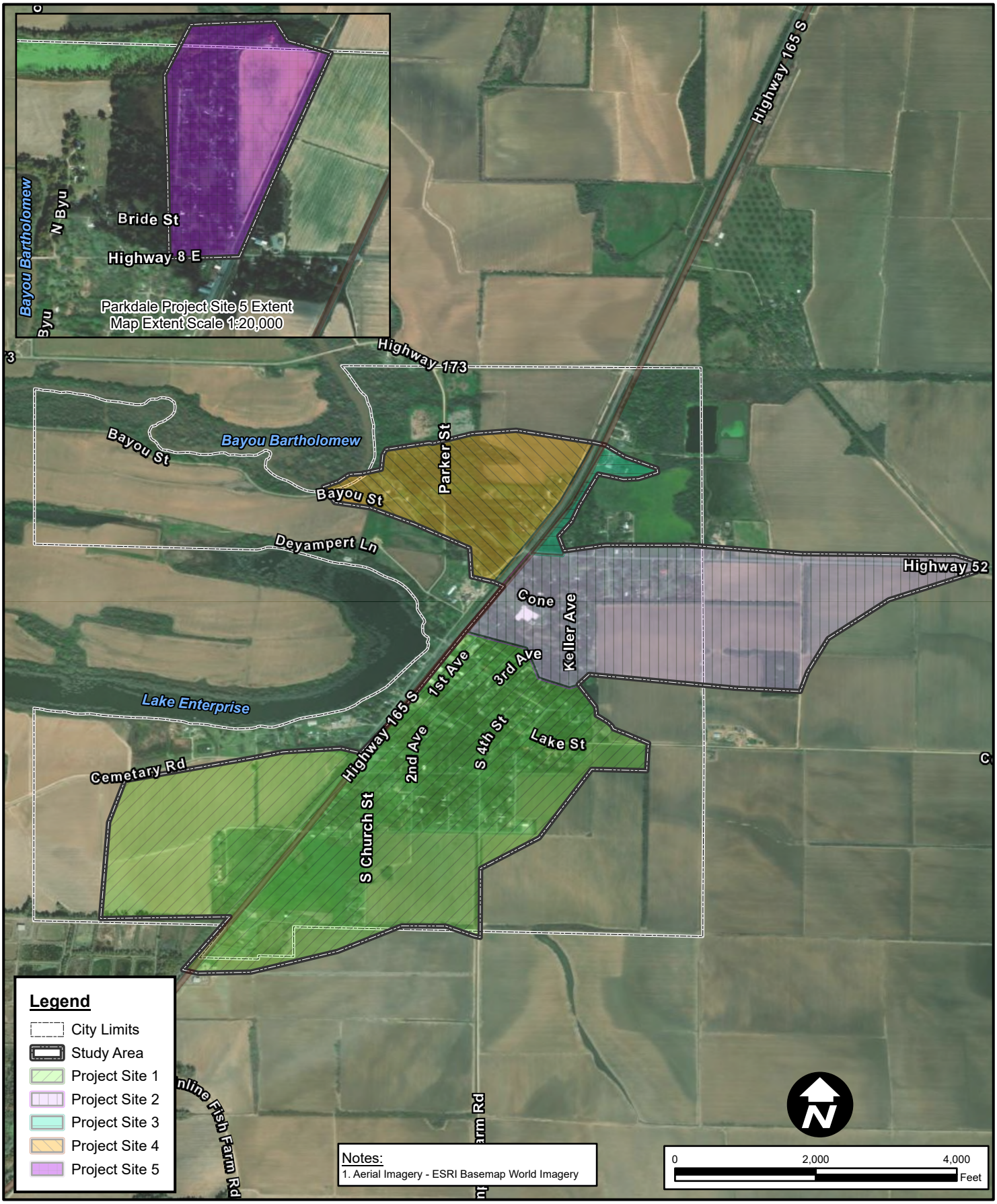
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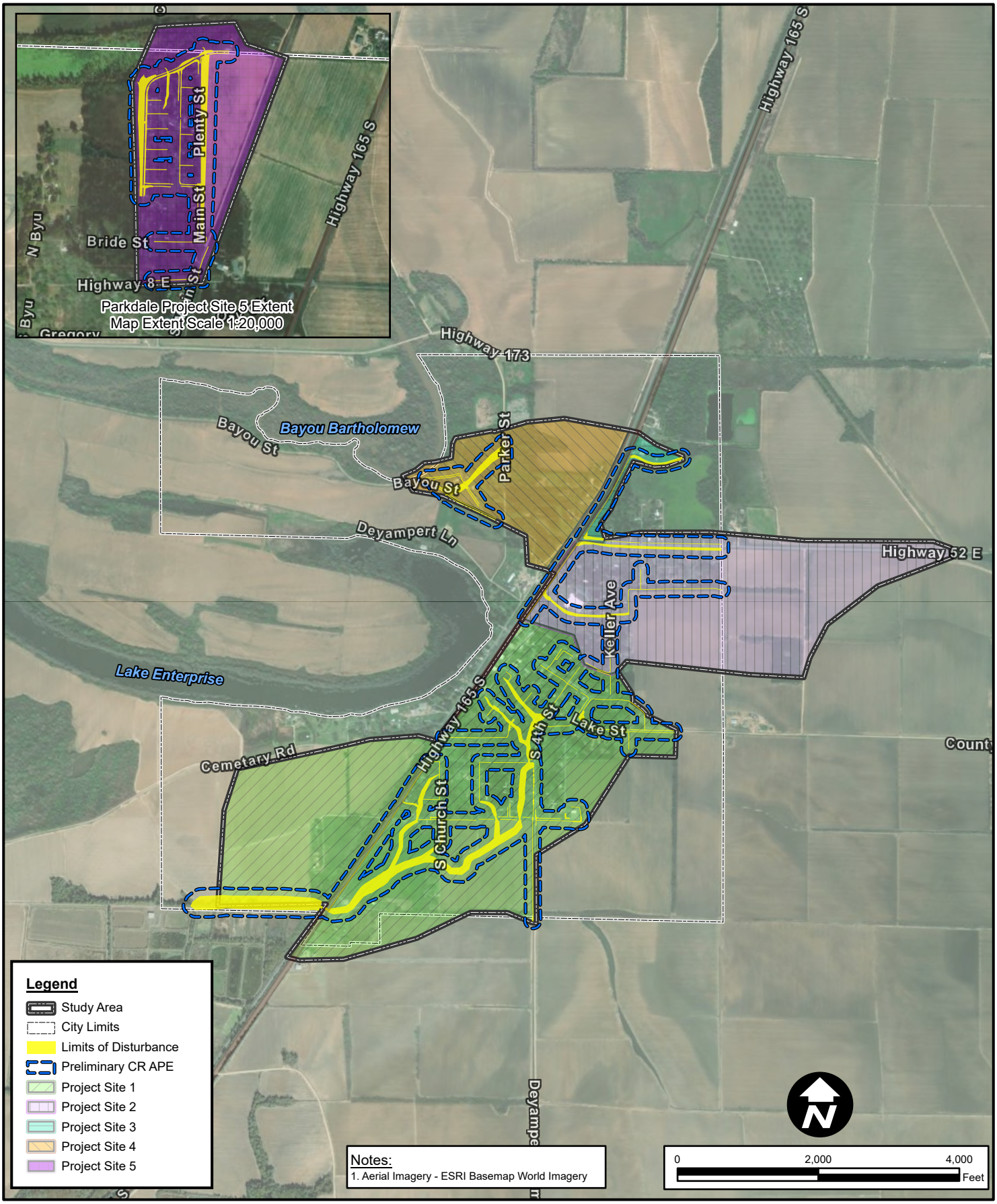
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

Date: March 9, 2026

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

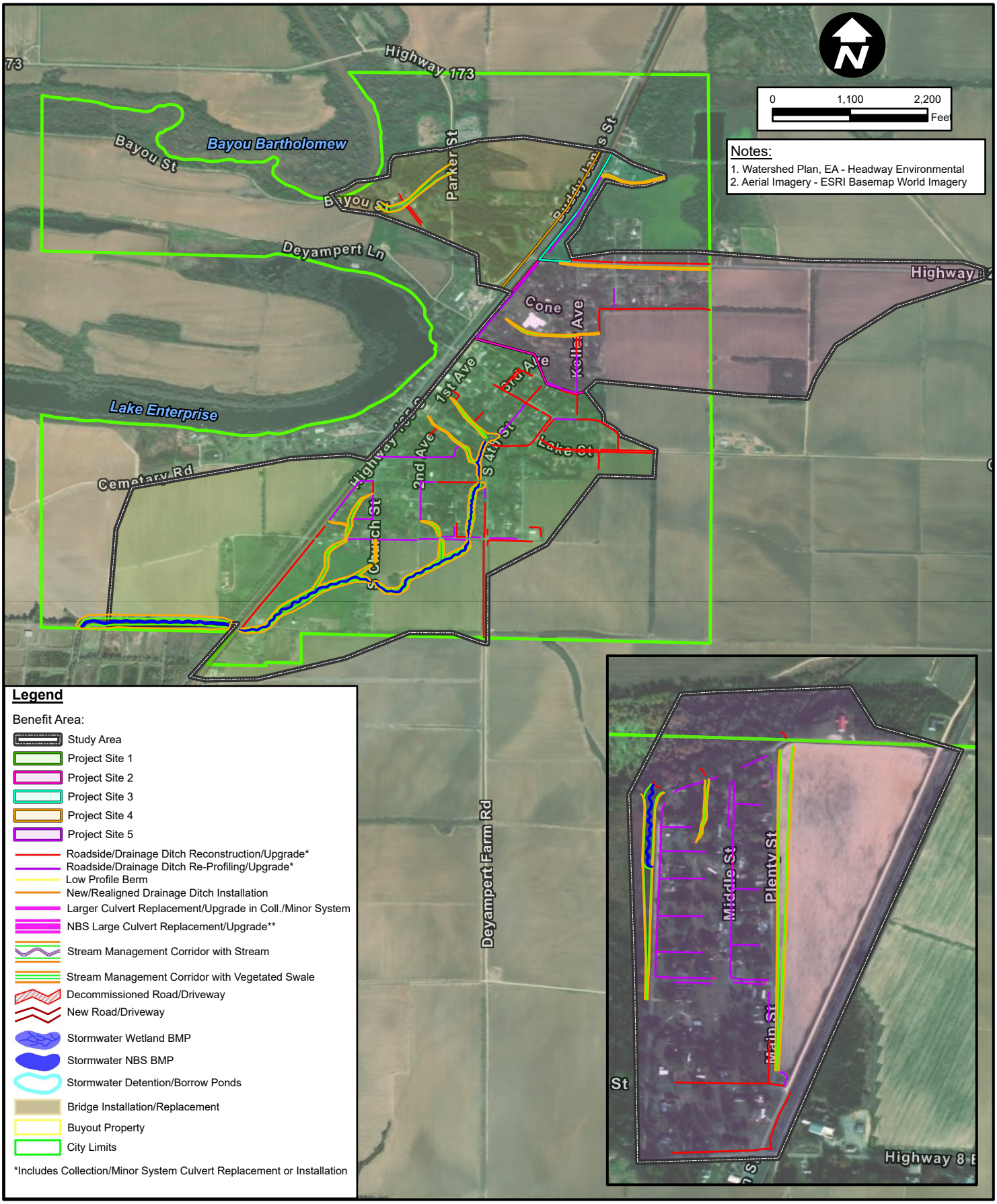
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LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

USDA
United States Department of Agriculture

VIA EMAIL

SEP 0 1 2026

Ms. Robin Williams
Tribal Historic Preservation Officer
Wichita and Affiliated Tribes
Post Office Box 729
Anadarko, Oklahoma 73005

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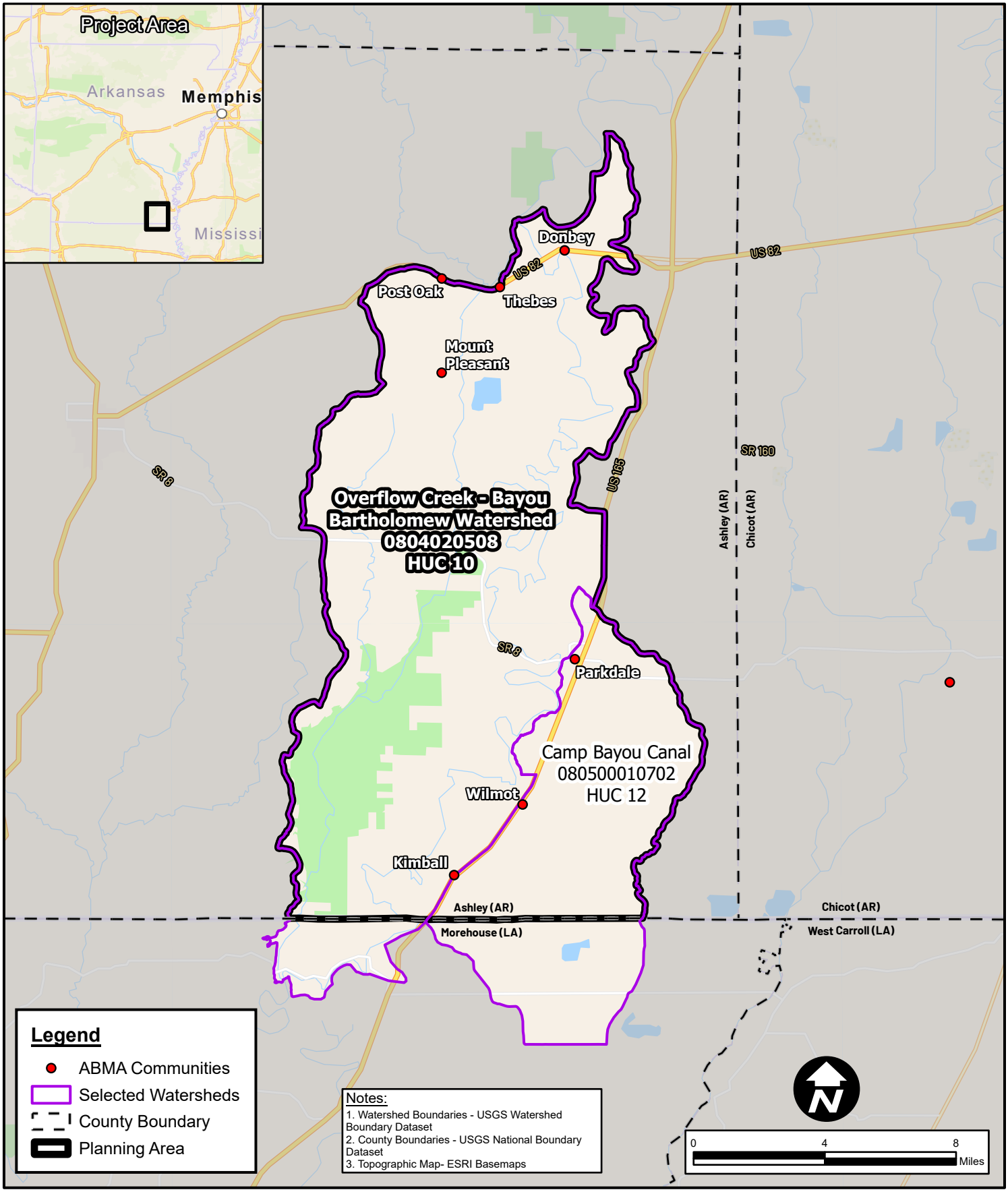
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PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

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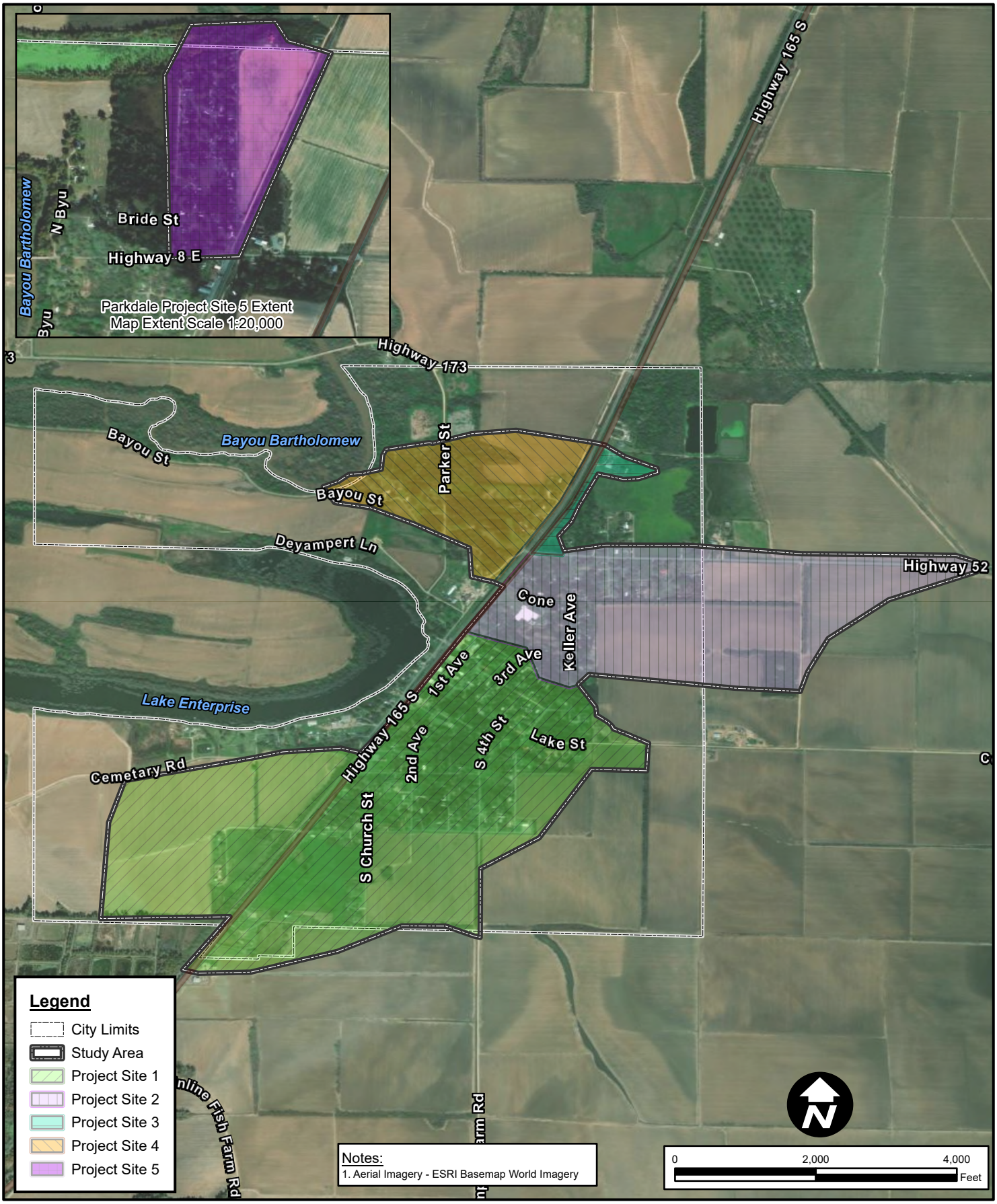
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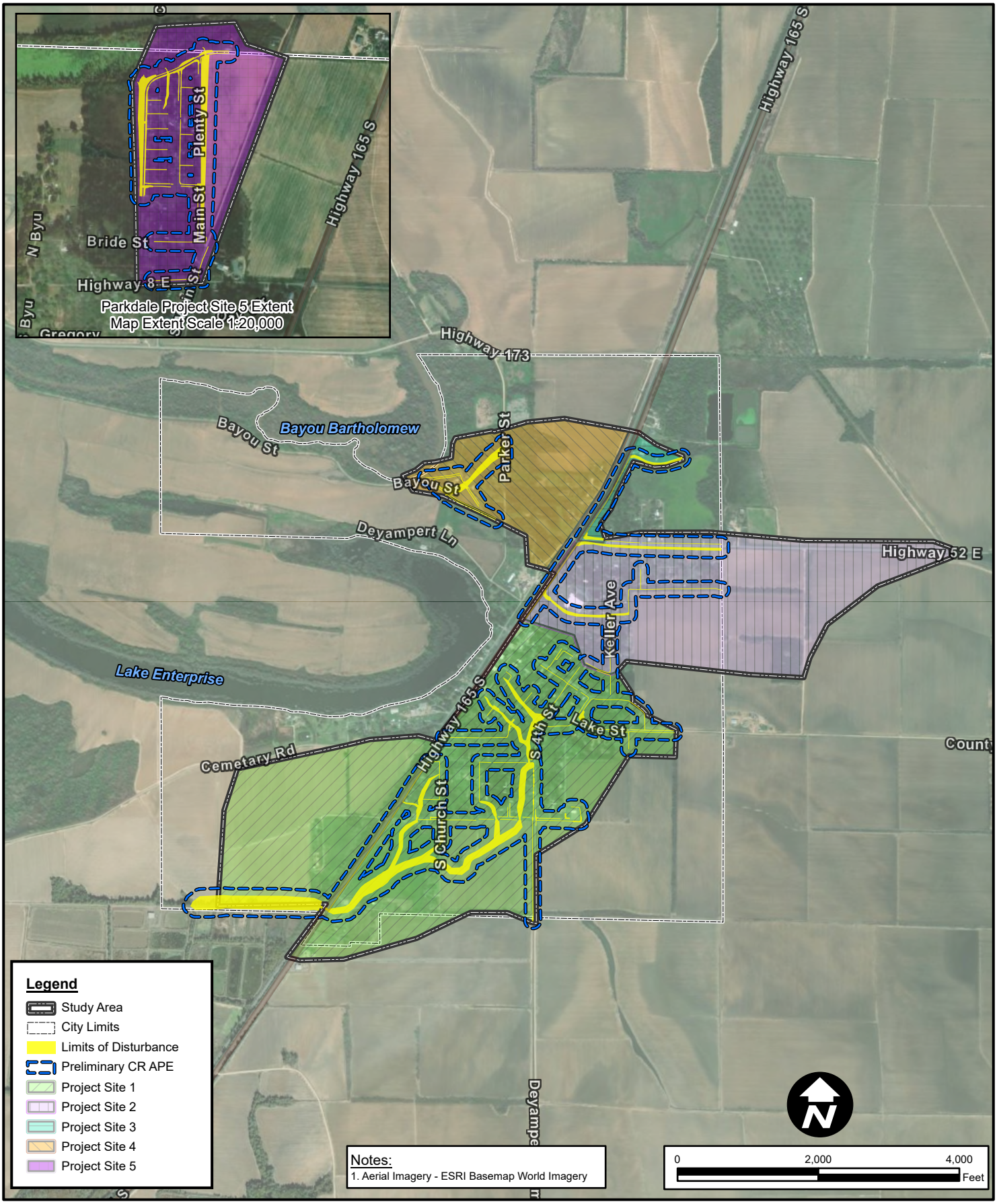
STUDY AREA AND PROJECT SITES

City of Wilmot Area
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Figure B-2

Date: March 9, 2026

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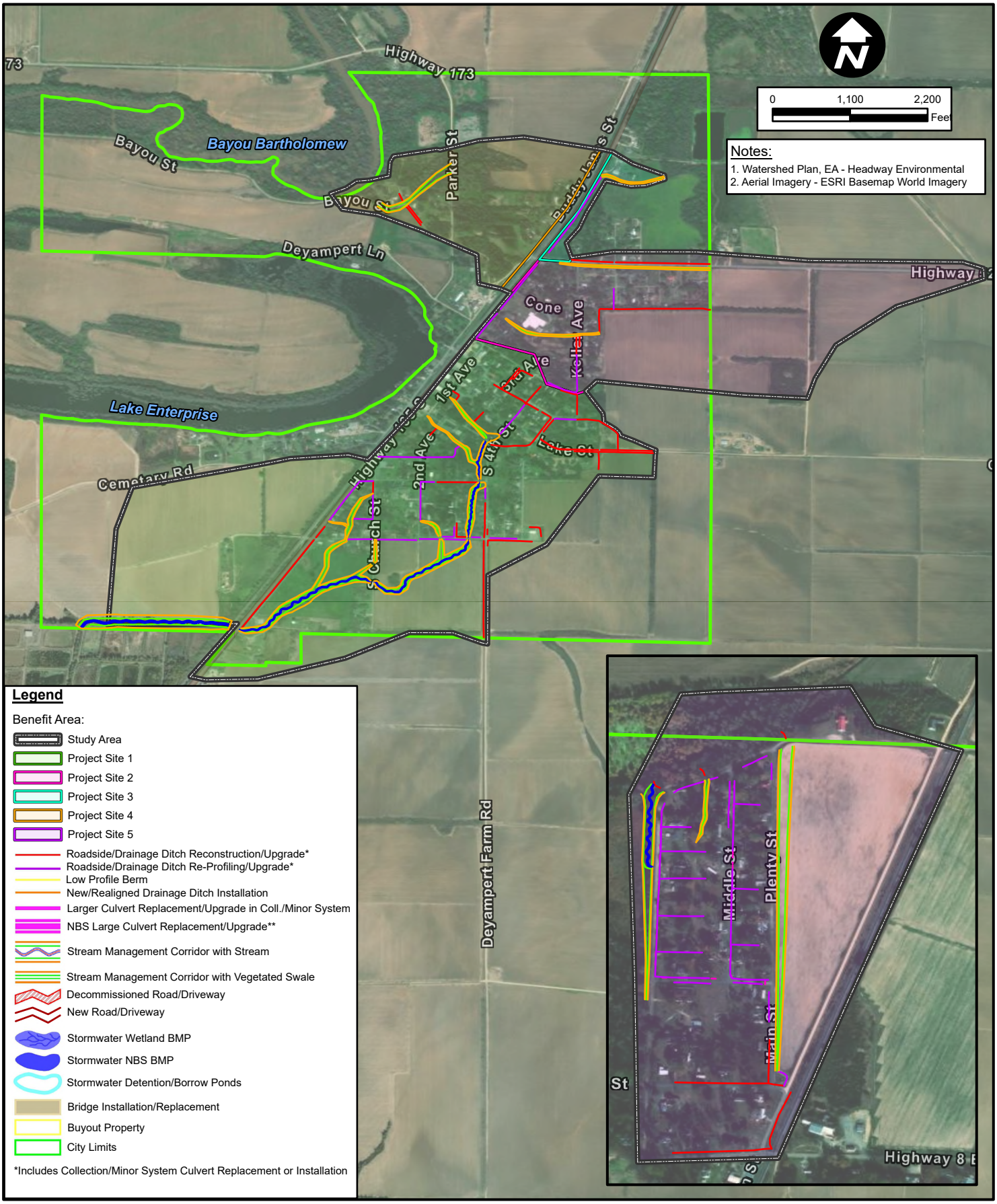
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LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

Drafted by: Headway Environmental



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

Drafted by: Headway Environmental

Outlook

RE: City of Wilmot, AR Watershed Project Consultation

From Section106 <section106@shawnee-tribe.com>
Date Thu 9/3/2026 4:20 PM
To Mosier, Cara - FPAC-NRCS, AR <Cara.Mosier1@usda.gov>

The project is out of the Shawnee Tribe's area of interest.

If you have any questions, you may contact me via email at Section106@shawnee-tribe.com.

Thank you for giving us the opportunity to comment on this project.

Erin Paden
TRIBAL HISTORIC PRESERVATION SPECIALIST

Office: (918) 542-2441, x140
Email: epaden@shawnee-tribe.com

29 S Hwy 69A
Miami, OK 74354

shawnee-tribe.com

From: Mosier, Cara - FPAC-NRCS, AR <Cara.Mosier1@usda.gov>
Sent: Wednesday, September 2, 2026 10:21 AM
To: Tonya Tipton <tonya@shawnee-tribe.com>
Cc: Erin Paden <epaden@shawnee-tribe.com>; Section106 <section106@shawnee-tribe.com>; Smedley, Stephen - FPAC-NRCS, AR <Stephen.Smedley@usda.gov>; Kinkaid, William - FPAC-NRCS, AR <william.kinkaid@usda.gov>; Smallwood, Christopher - FPAC-NRCS, AR <Christopher.Smallwood@usda.gov>
Subject: City of Wilmot, AR Watershed Project Consultation

CAUTION: External email. Do not click links or open attachments unless you are confident the content is safe.

Good Morning Ms. Tipton,

The document attached to this letter serves to initiate consultation between Arkansas NRCS and your Nation, regarding the City of Wilmot Watershed Project Plan. Further consultation defining

the area of potential effect, identifying historic properties, and making an effects determination will be forthcoming, following the phased timeline laid out in the Programmatic Agreement (PA), which can be sent to you upon request.

Arkansas NRCS respects the authority of the Shawnee Tribe as a sovereign nation. If at any time you wish to formally share your interests, recommendations, and/or concerns directly with Arkansas NRCS, please notify Stephen Smedley, State Conservation Engineer, and Bill Kinkaid, Resource Conservationist. For any questions or concerns pertaining to Section 106 of the National Historic Preservation Act, please do not hesitate to reach out to myself or Scott Smallwood, State Cultural Resources Specialist. We appreciate your time and consideration, thank you.

Cheers,

Cara Mosier
Cultural Resources Specialist – Watershed and WRE
Cultural Resources Specialist – SW Area
Acting Cultural Resources Specialist – NWMC
NRCS Arkansas | Ecological Sciences

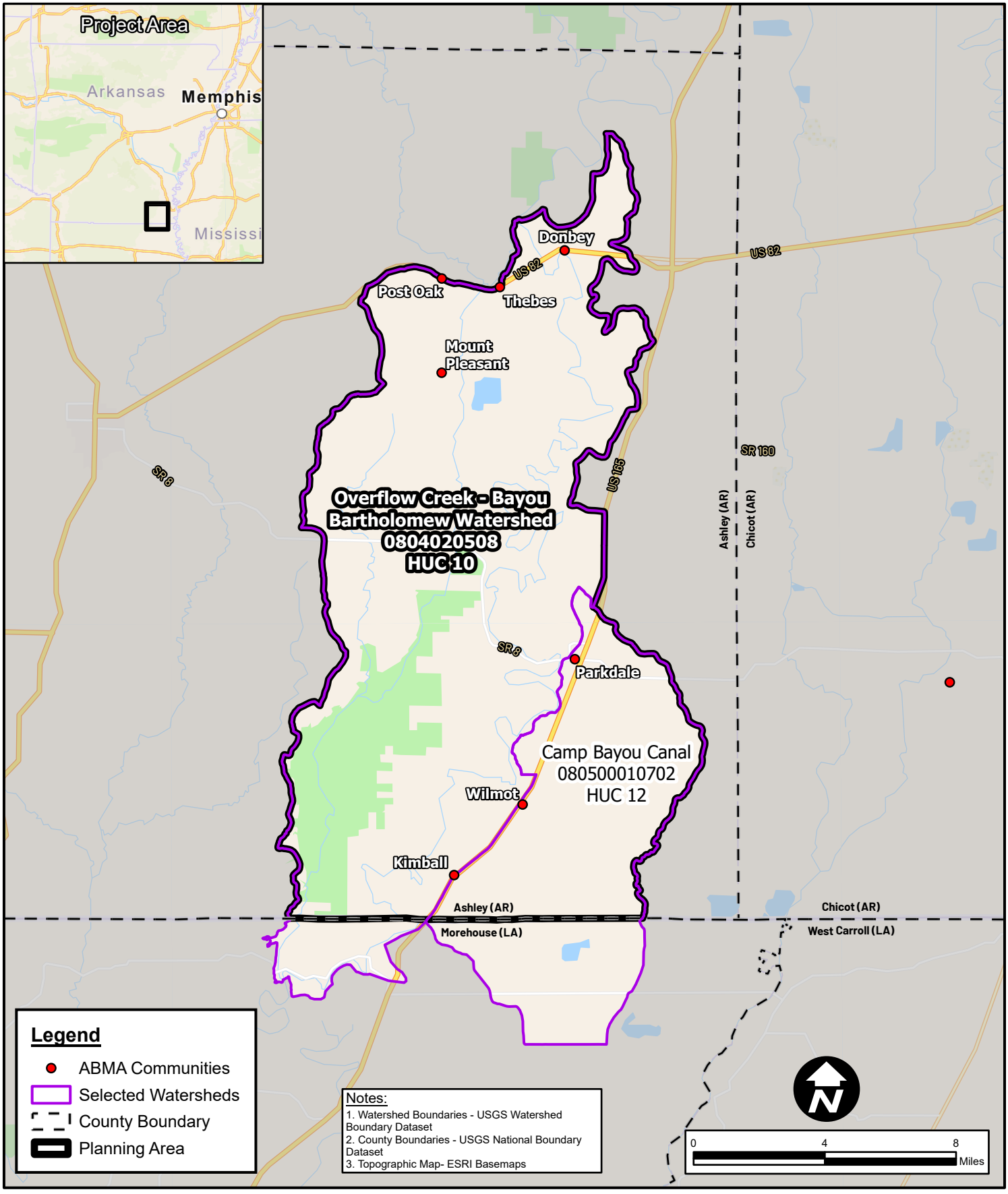
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A-4.
Draft Plan-EA Comments and Responses

Comments received and the associated responses on the Draft Watershed Project Plan will be included in the Final Watershed Project Plan

Appendix B.
Watershed Project Maps



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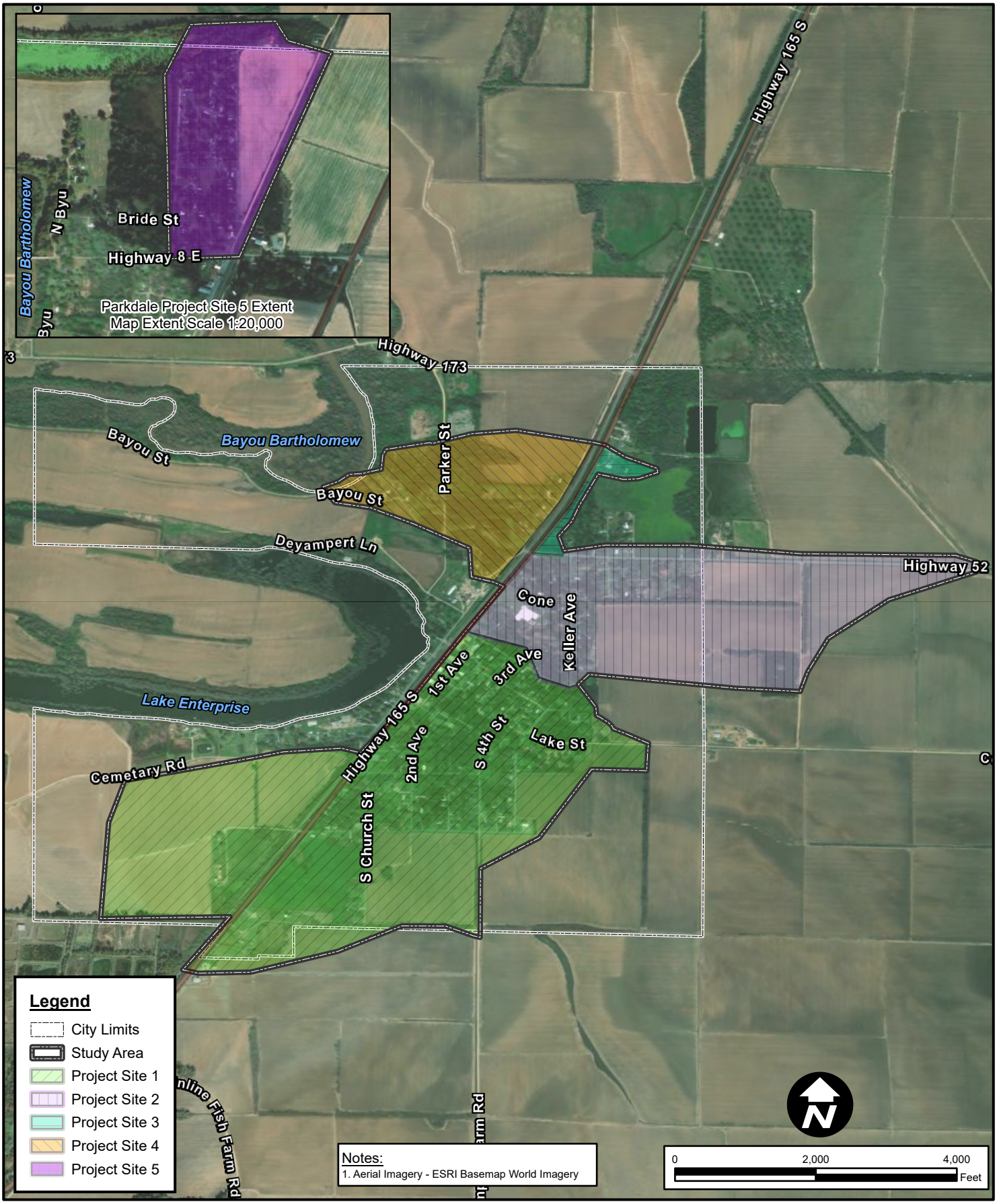
PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-1

Date: August 5, 2026

Drafted by: Headway Environmental



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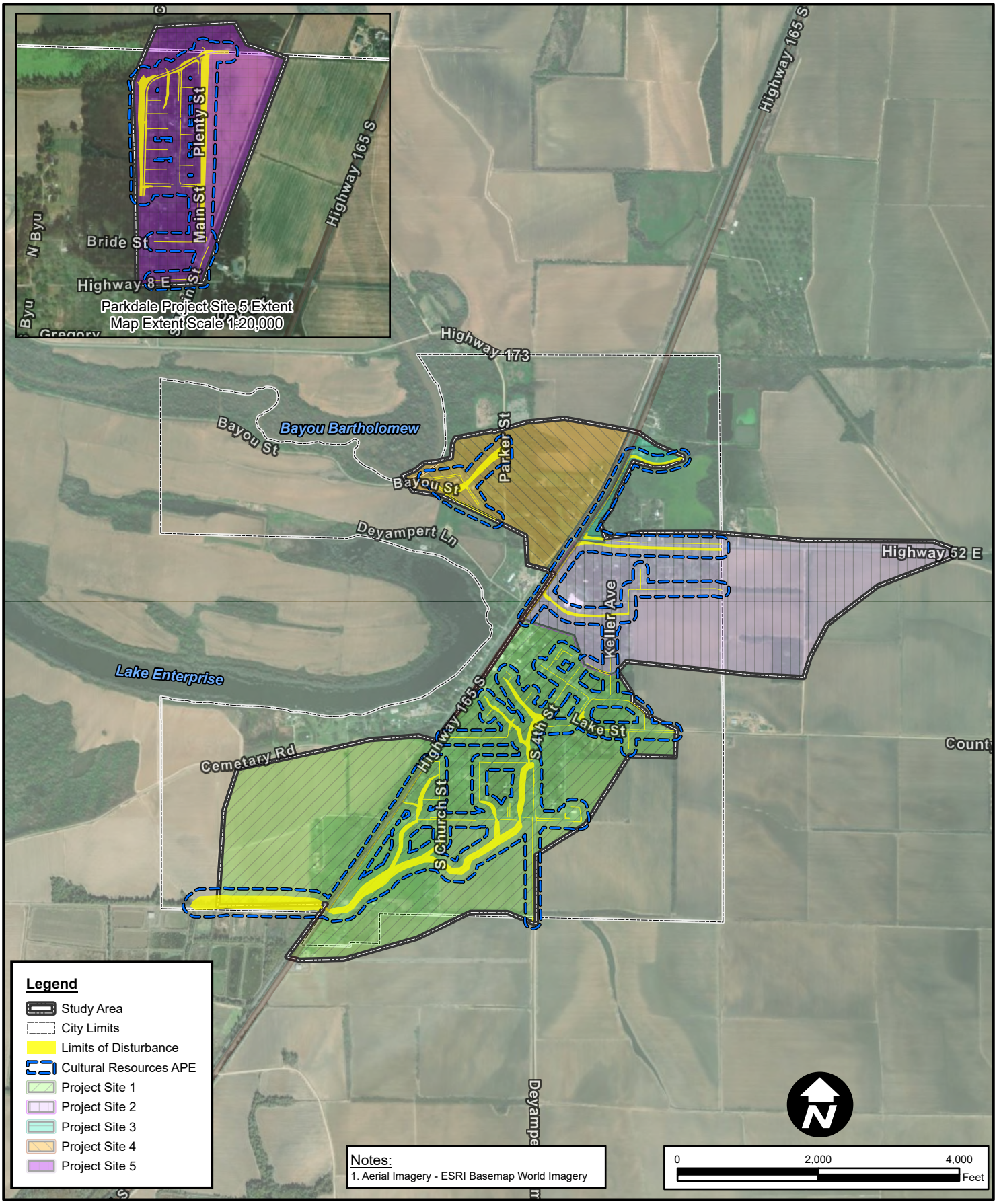
STUDY AREA AND PROJECT SITES

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-2

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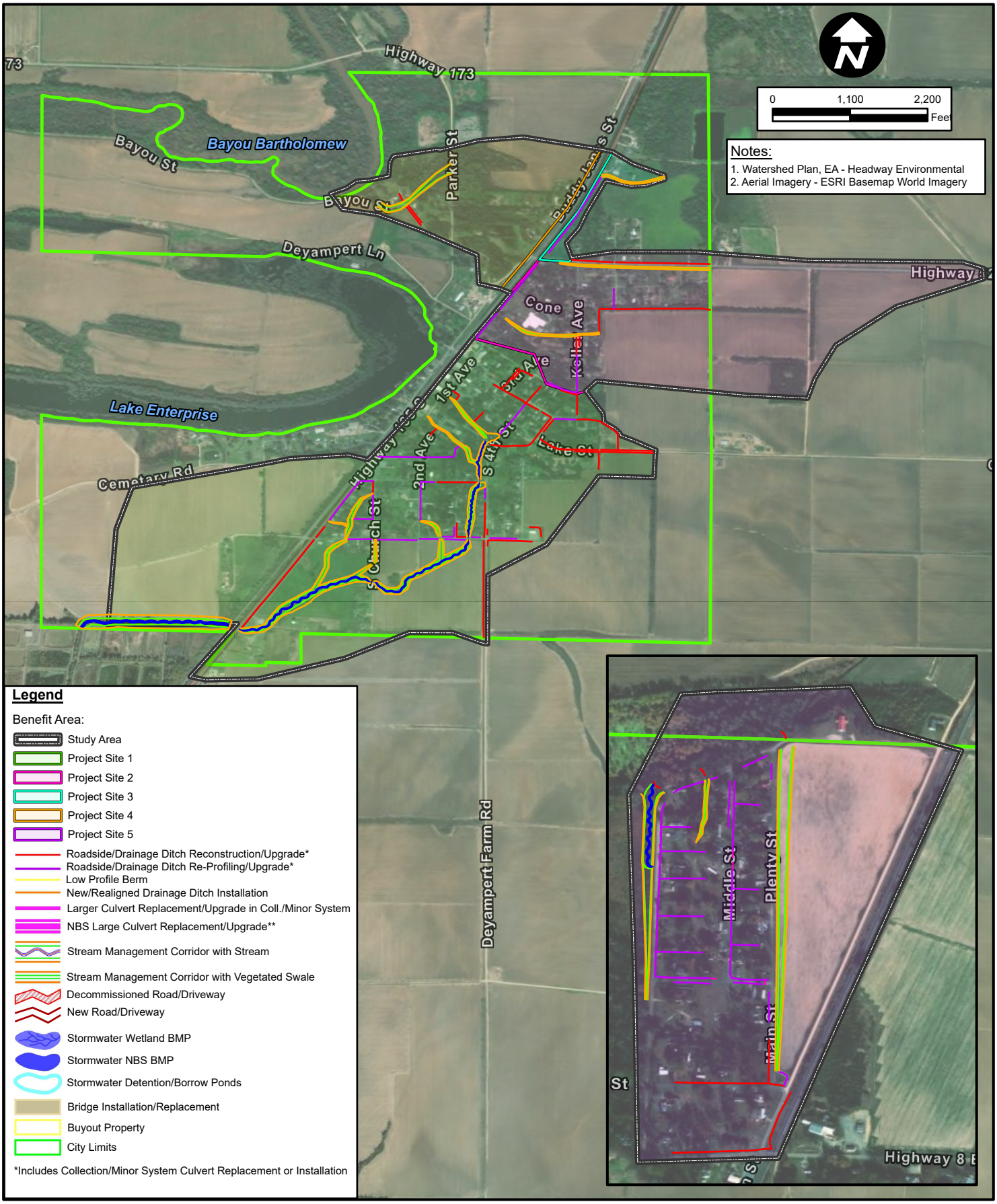
Date: March 9, 2026

LIMITS OF DISTURBANCE AND PRELIMINARY AREA OF POTENTIAL EFFECT

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-3

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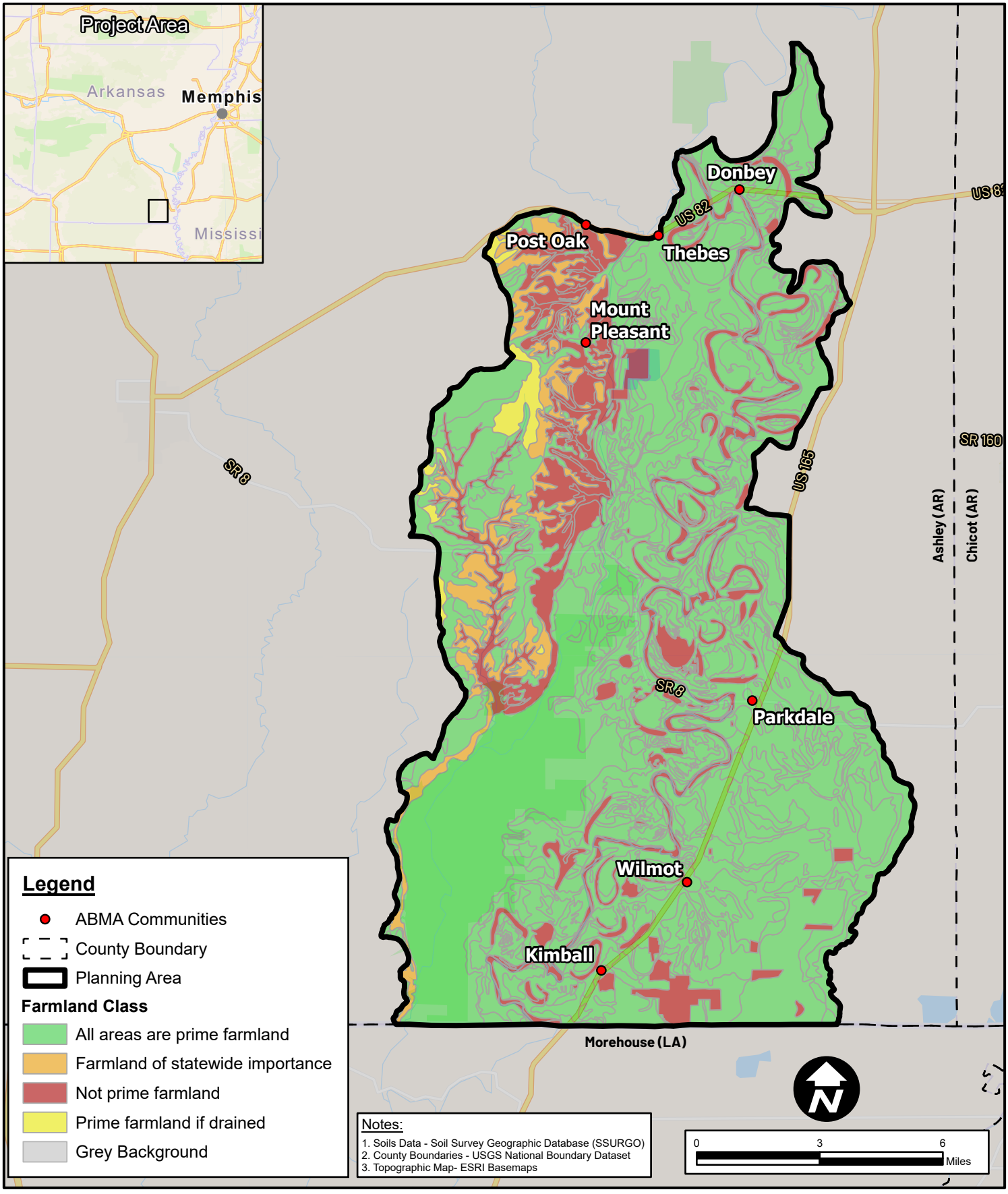
Date: August 5, 2026

PROPOSED WORKS OF IMPROVEMENT: ALTERNATIVE 6A NBS-FOCUSED DRAINAGE IMPROVEMENTS
City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure B-4

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Appendix C.
Support Maps



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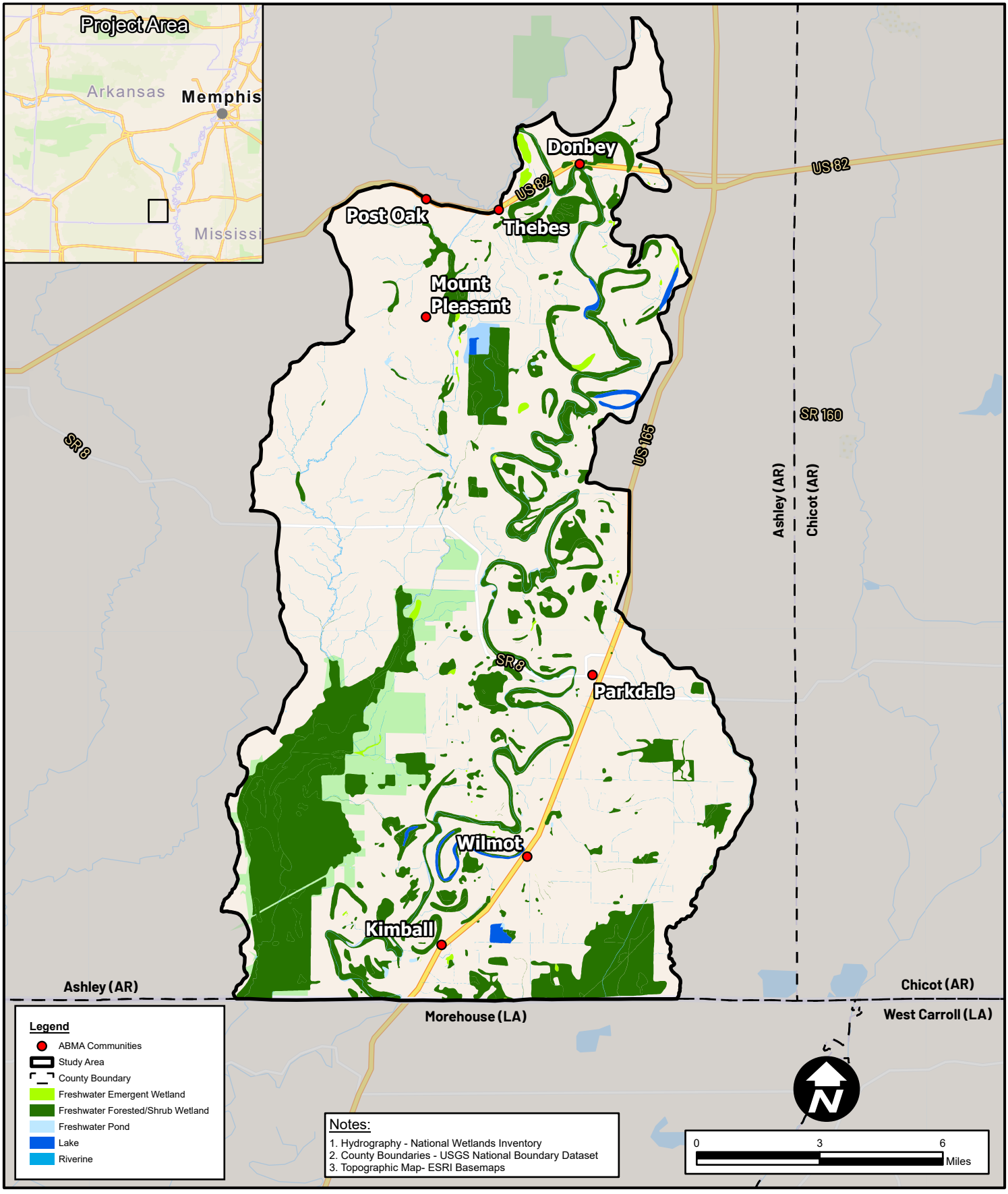
Date: November 5, 2024

SOILS AND PRIME FARMLAND STATUS WITHIN THE PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-1

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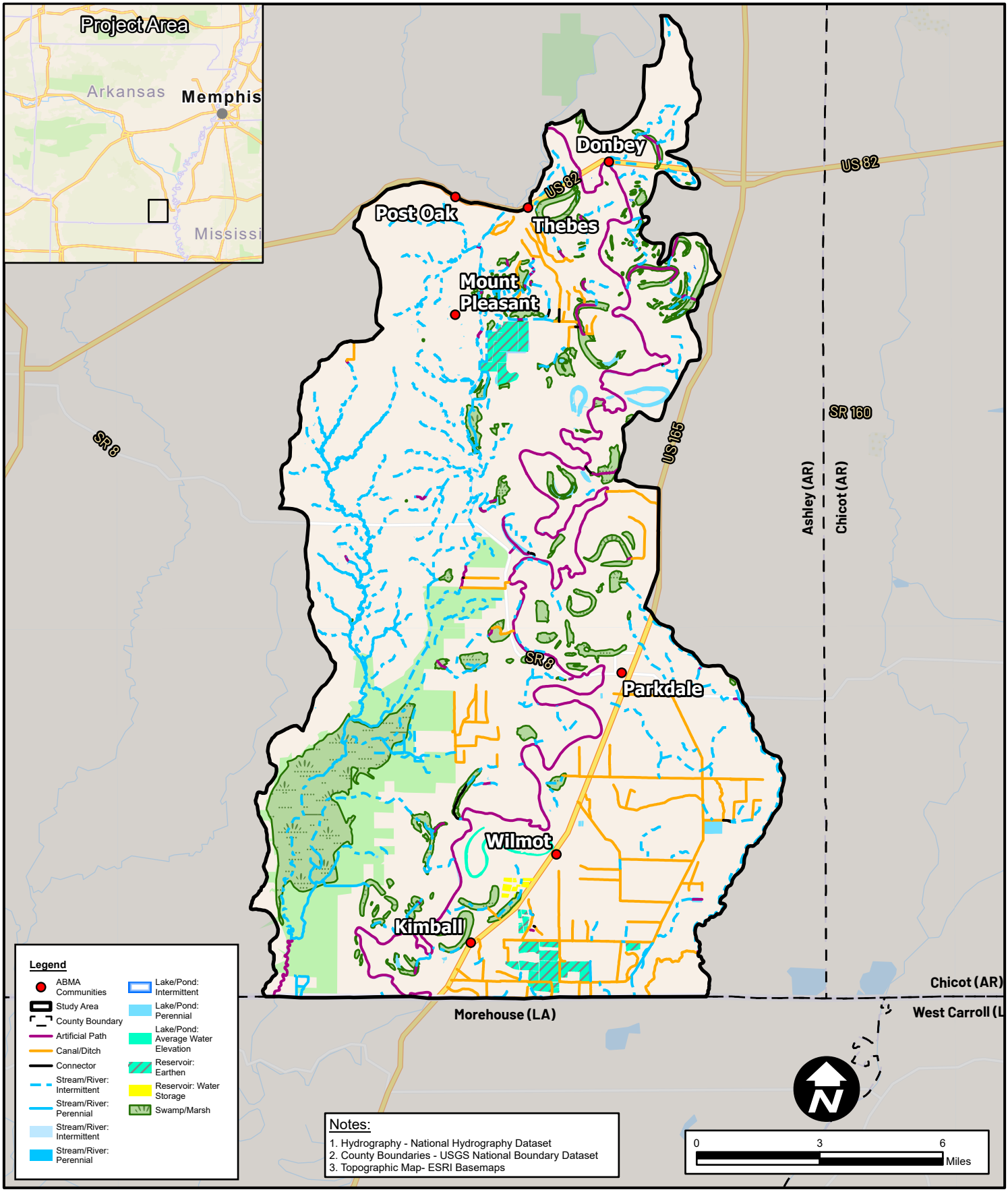
NATIONAL WETLANDS INVENTORY (NWI) WITHIN THE PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-2

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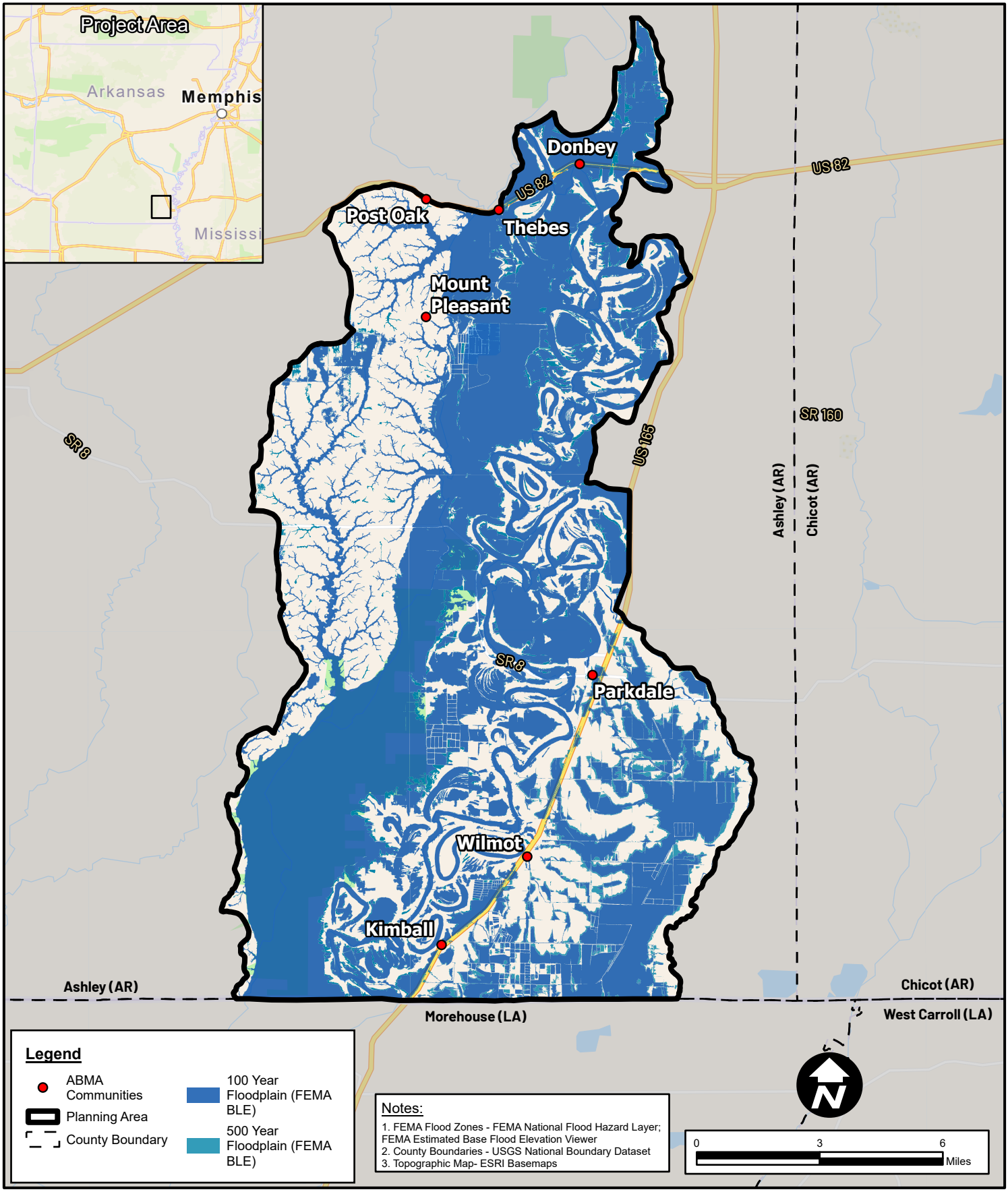
NATIONAL HYDROGRAPHY DATASET (NHD) WITHIN THE PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-3

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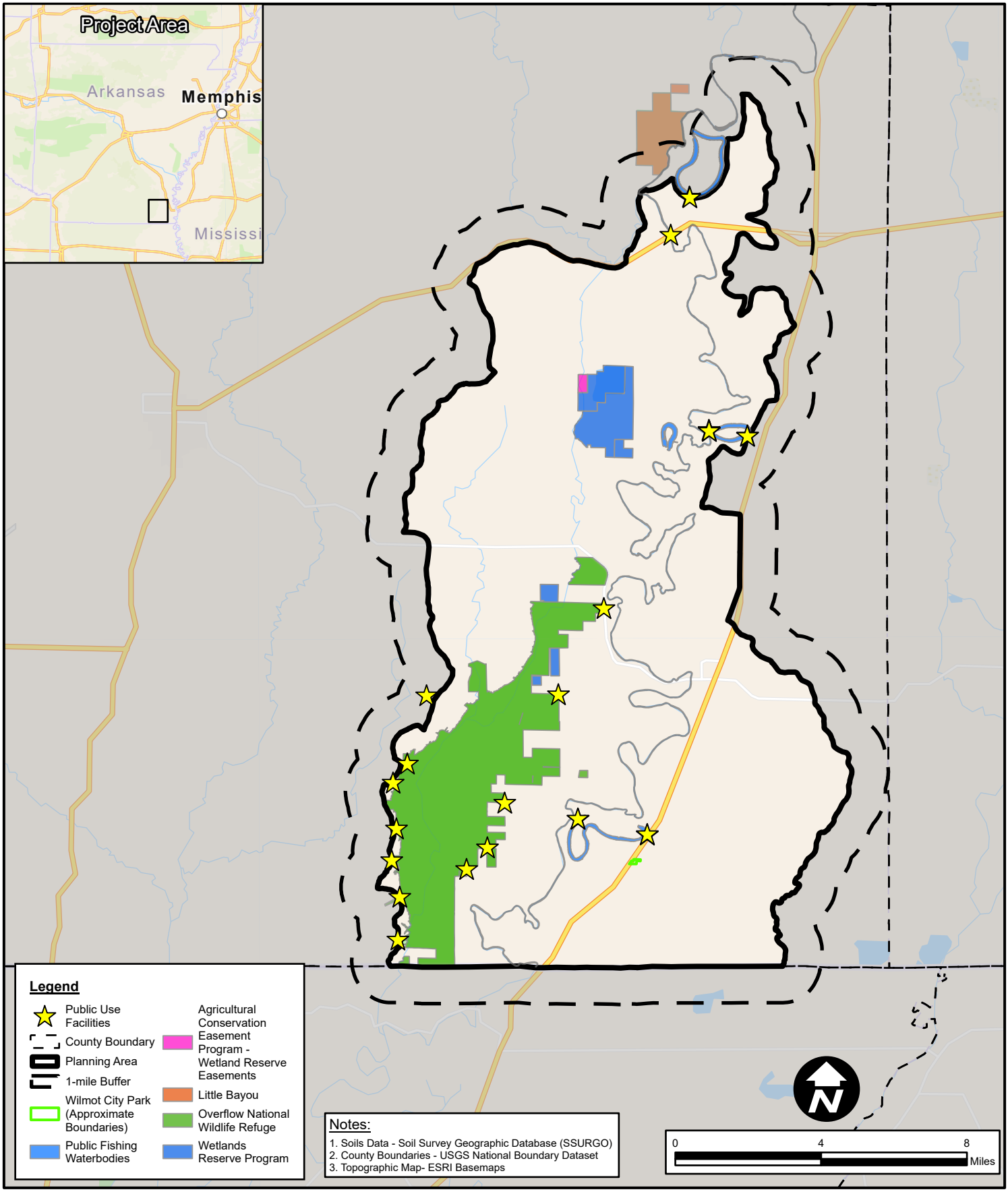
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FEMA EFFECTIVE FIRM AND BASE FLOOD ELEVATION (BLE) 100-YEAR FLOODPLAIN WITHIN THE PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-4

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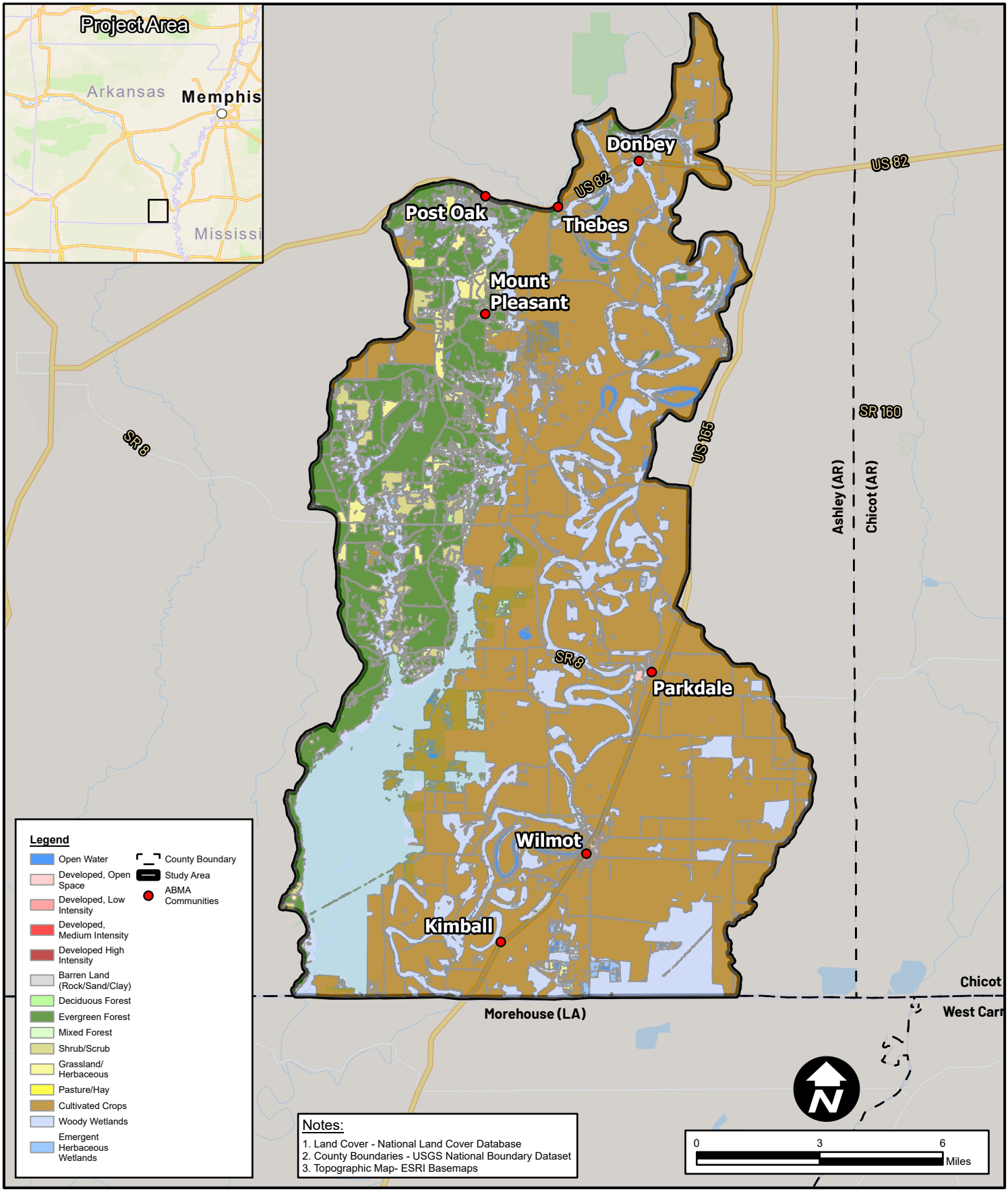
NATURAL AREAS AND PARKLANDS WITHIN 1-MILE OF THE PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-5

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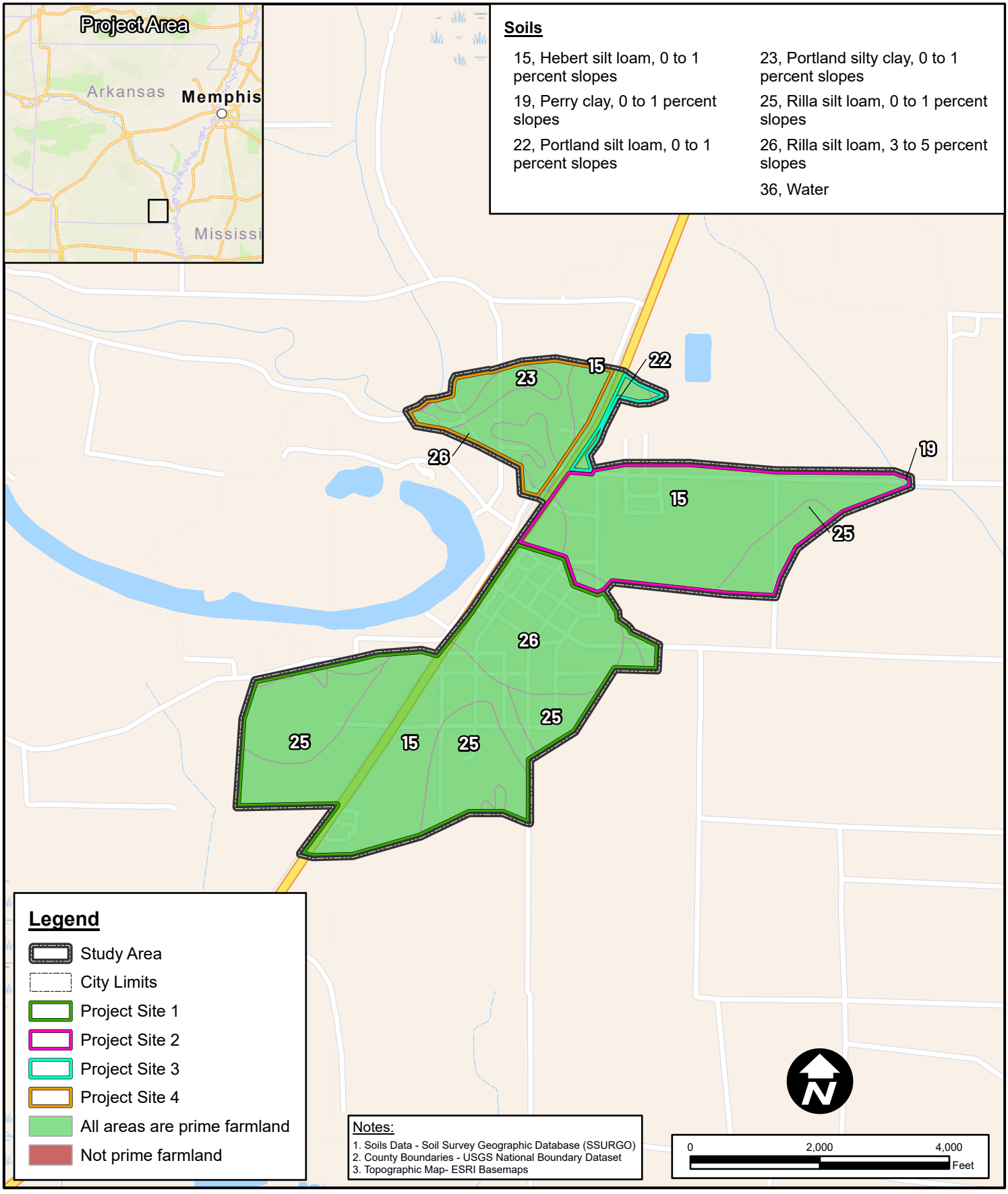
NATIONAL LAND COVER DATABASE (NLCD) LAND COVER TYPES WITHIN THE PLANNING AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-6

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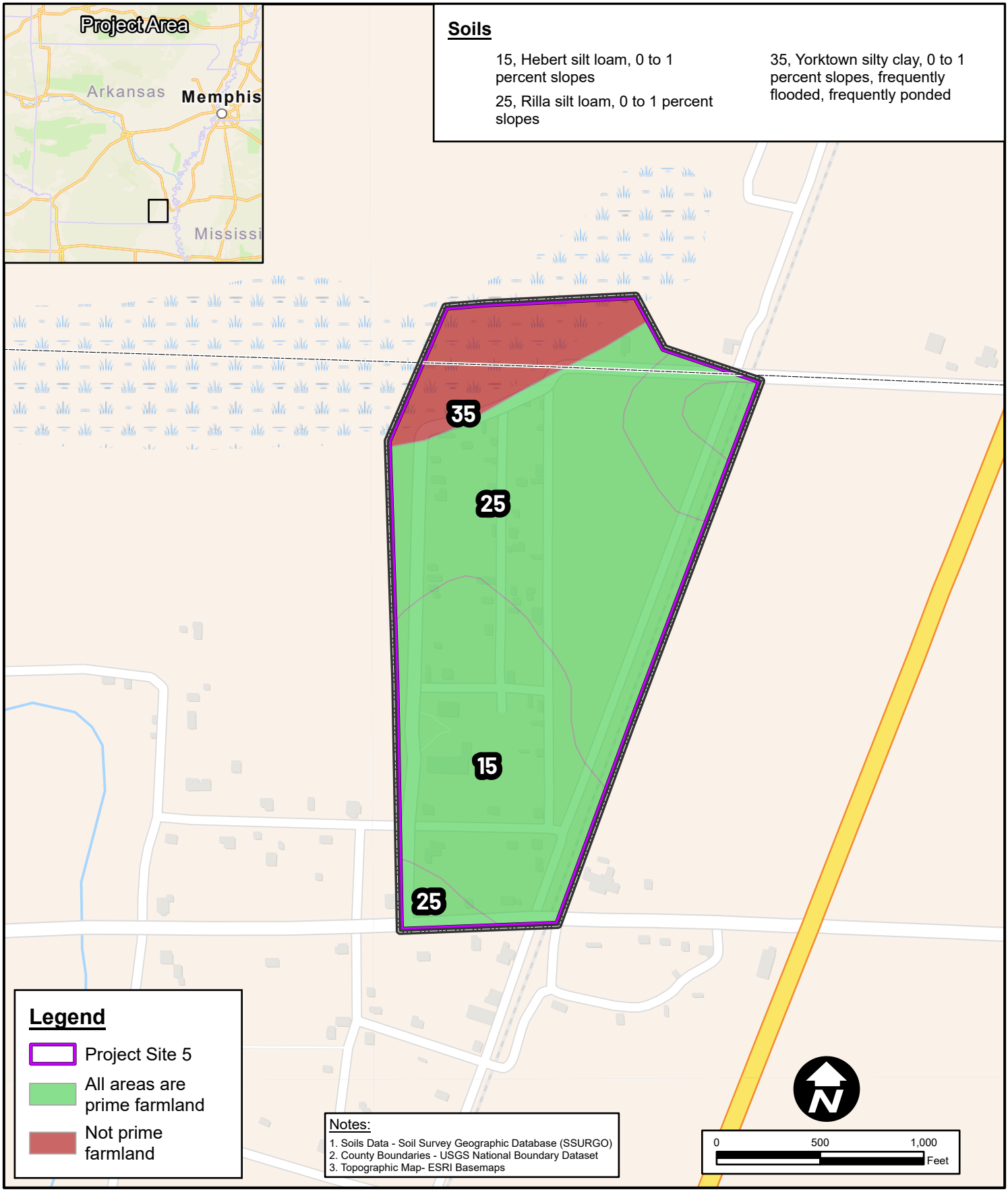
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SOILS AND PRIME FARMLAND STATUS WITHIN THE WILMOT STUDY AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-7

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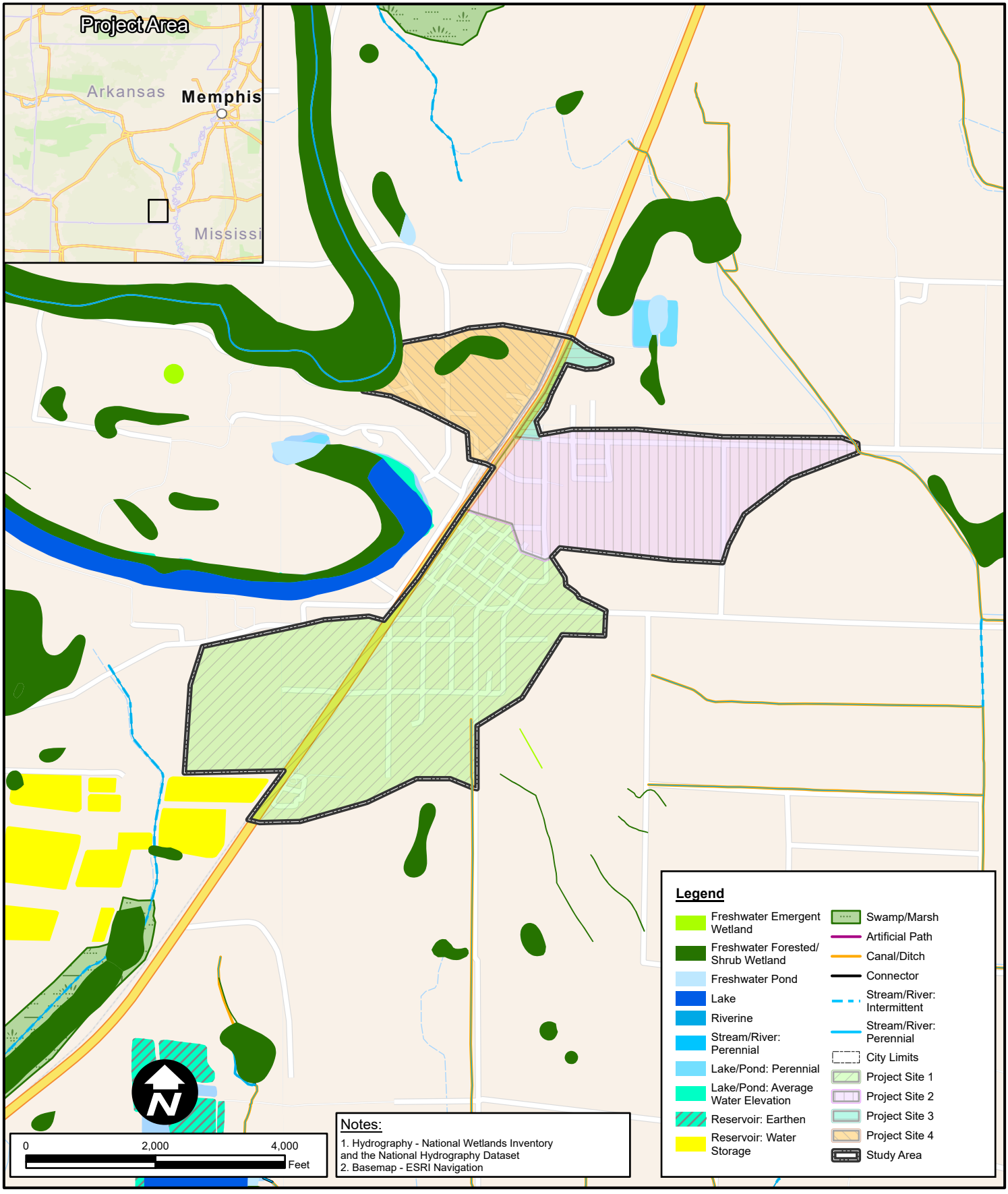
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SOILS AND PRIME FARMLAND STATUS WITHIN THE PARKDALE STUDY AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-8

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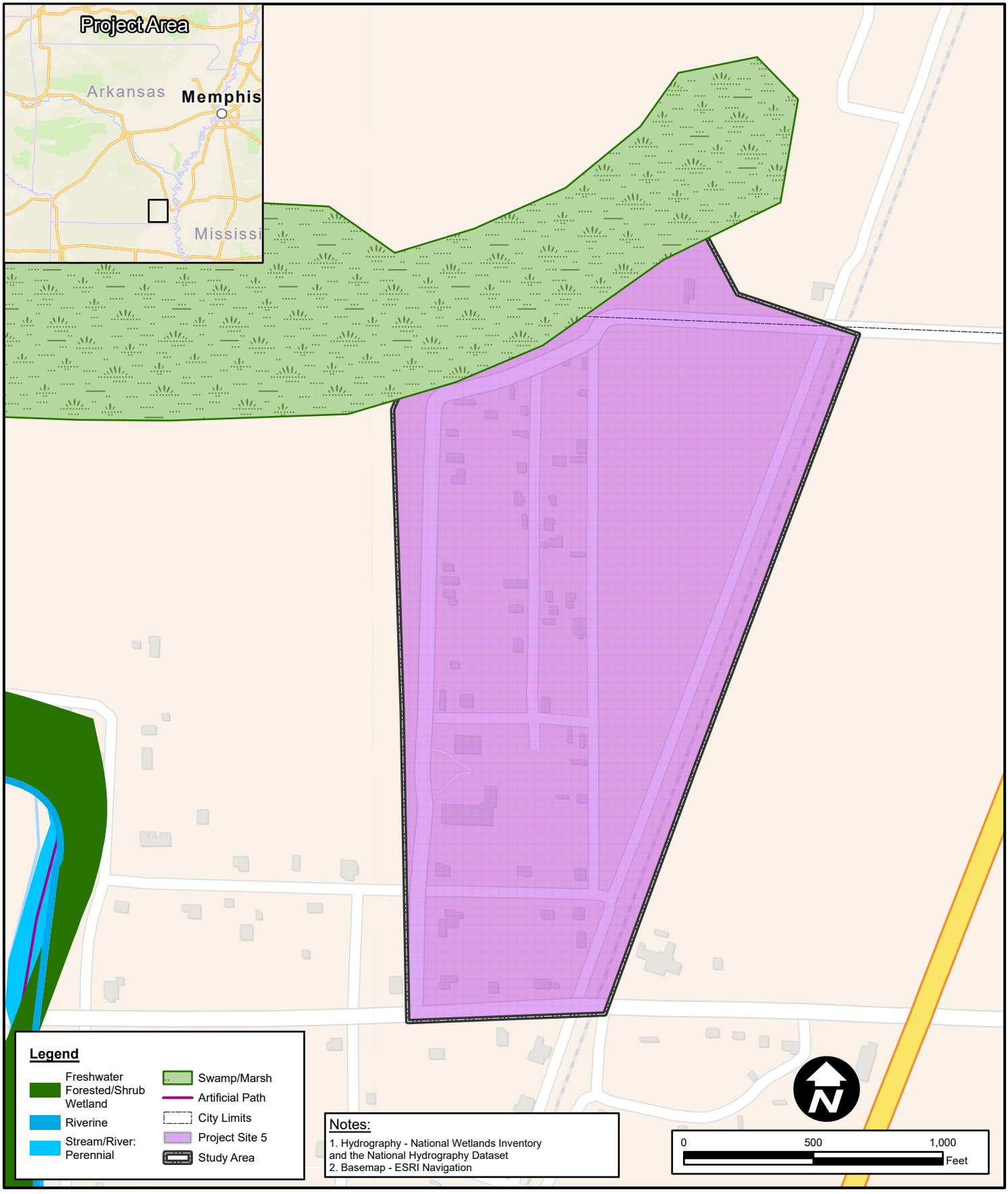
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NATIONAL WETLANDS INVENTORY (NWI) AND NATIONAL HYDROGRAPHY DATASET (NHD) WITHIN THE WILMOT STUDY AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-9

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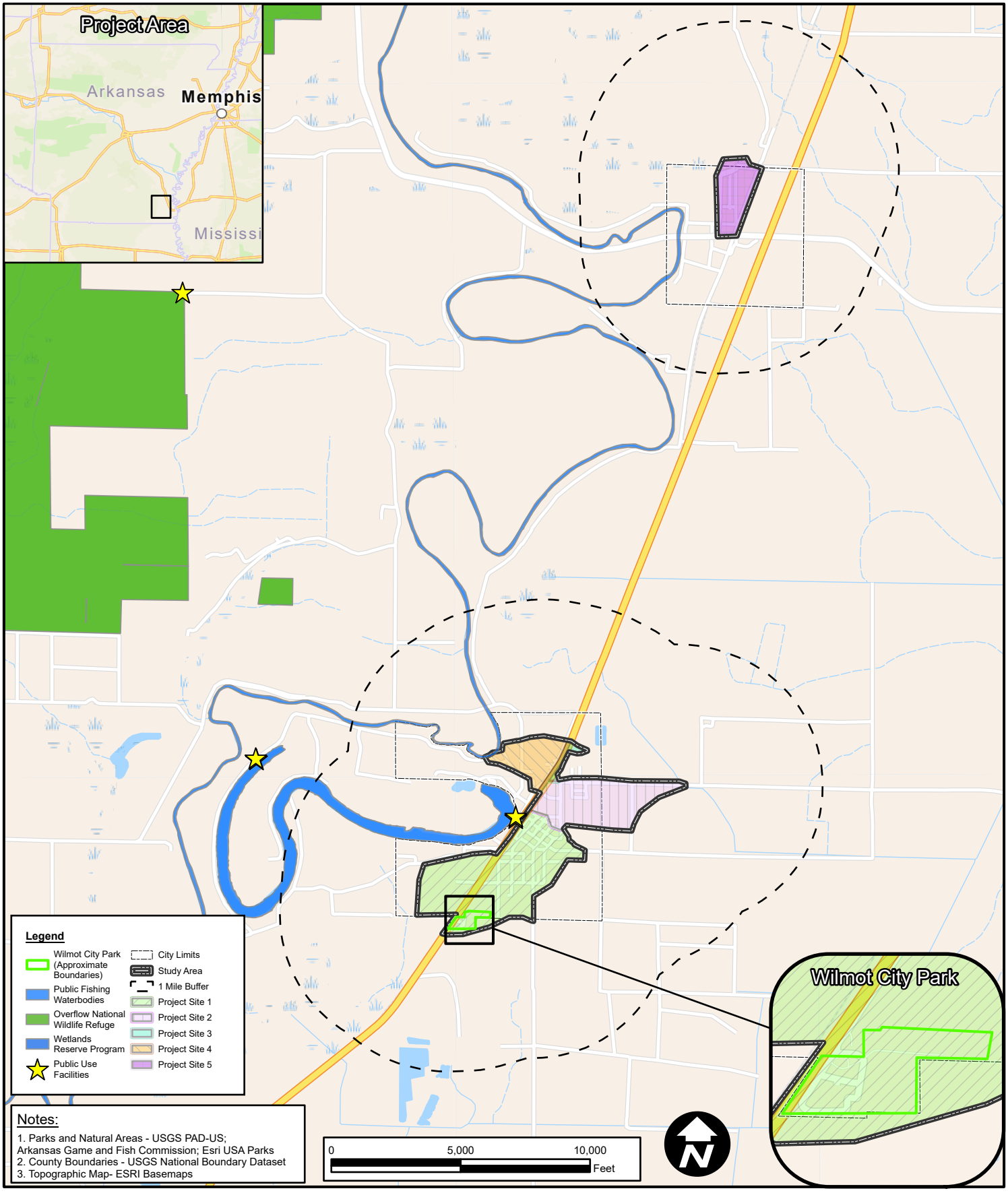
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NATIONAL WETLANDS INVENTORY (NWI) AND NATIONAL HYDROGRAPHY DATASET (NHD) WITHIN THE PARKDALE STUDY AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-10

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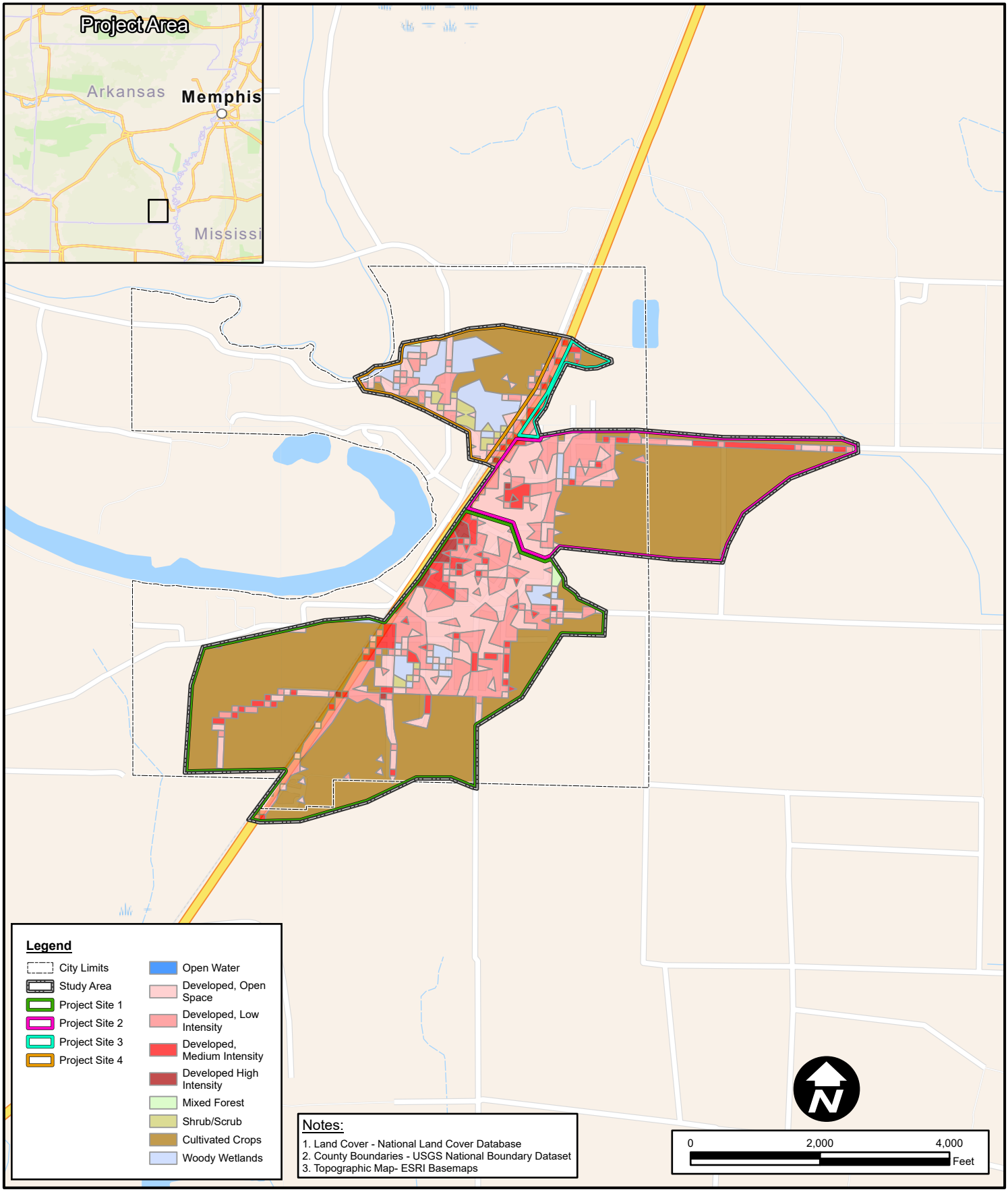
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NATURAL AREAS AND PARKLANDS WITHIN 1-MILE OF THE STUDY AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-11

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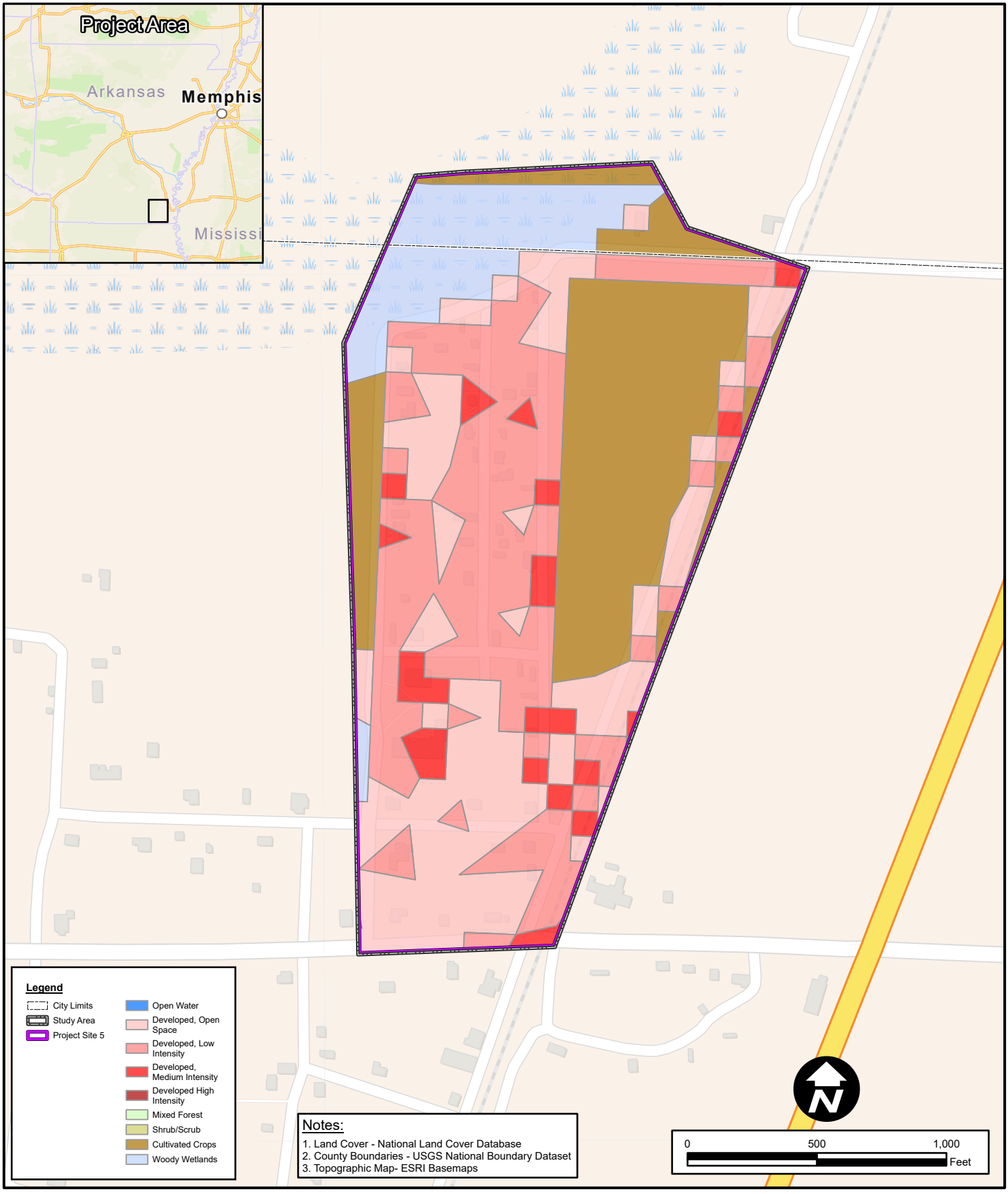
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NATIONAL LAND COVER DATABASE (NLCD) LAND COVER TYPES WITHIN THE WILMOT STUDY AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-14

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NATIONAL LAND COVER DATABASE (NLCD) LAND COVER TYPES WITHIN THE PARKDALE STUDY AREA

City of Wilmot Area
Watershed Plan – Environmental Assessment
Ashley County, Arkansas

Figure C-13

Date: February 26, 2026

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Appendix D. Investigation and Analysis Report

Appendix D: Investigations and Analyses Report

For the Watershed Plan-Environmental Assessment for the City of Wilmot Area, Arkansas

NRCS WFPO Unique ID Number: OPR.NW00.05.7011
CEQ Unique ID Number: EAXX-005-53-000-1726840406

LEAD AGENCY



SPONSORS

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P.O. Box 67
Wilmot, Arkansas 71676

AND

City of Parkdale, Arkansas
P.O. Box 145
Parkdale, Arkansas 71661

October 2026

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1 Introduction

The City of Wilmot Area Flood Prevention Project (Project) is located within the Cities of Wilmot and Parkdale, in the headwaters of the Overflow Creek-Bayou Bartholomew and Camp Bayou Canal Watersheds, in Ashley County, Arkansas. The primary Purpose of the Project is to reduce flooding in the Cities of Wilmot and Parkdale, Arkansas for the 50-year evaluated life, following installation.

The Project is funded by the Natural Resources Conservation Service (NRCS) through the Watershed Protection and Flood Prevention Program, authorized under Public Law (PL) 83-566, and implemented through the Watershed and Flood Prevention Operations (WFPO) Program.

The purpose of this Investigations and Analyses Report (IAR) is to present the engineering and economic information that supports the formulation, evaluation, and conclusions of the Watershed Project Plan and Environmental Assessment (Plan-EA). The report is organized into sections summarizing the engineering and economic investigations and analyses performed and results obtained.

For consistency with NRCS policy (390 National Watershed Program Manual [NWPM] §501.12(C)), the evaluated life (Project life) is defined as 50 years beginning after construction is complete. The implementation phase (design, permitting, and construction) is not part of the Project life but is included in the period of analysis, which totals 52 years (2 years implementation + 50 years Project life). All economic evaluations in this report apply operations and maintenance (O&M) costs during Years 3–52, representing the full 50-year evaluated life.

2 Existing Conditions

The Study Area has been separated into five Project Sites (four project sites in Wilmot and one Project Site in Parkdale), as shown on Figure D-1 and Figure D-2, which represent the five different subwatersheds within the Study Area where Flood Problem Areas were identified during the Scoping process. The red lines indicating the Flood Problem Areas are not meant to depict the areal extent or exact location of flooding that has been observed, but rather they indicate the sections of roads and streets associated with flooding that was observed at that location on the street, on the adjacent properties and structures, or both.

Figure D-1 and Figure D-2 show the Flood Problem Areas overlain on the effective Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) regulatory floodplains for the City of Wilmot and Parkdale, respectively. As shown on Figure D-1 and Figure D-2, a substantial portion of the observed flooding within the urbanized areas of the Cities of Wilmot and Parkdale lie outside of the FEMA FIRM regulatory 100-year and 500-year floodplains. Despite the lack of regulatory floodplain designation, recurring flooding has been documented in these areas and was confirmed during the Scoping process, as described further throughout this section, necessitating further evaluation and mitigation. Consequently, additional floodplain and hydraulic analyses were required to better characterize flood conditions within the five Project Sites.

FEMA Base Level Engineering (BLE) data represent FEMA's most current flood hazard information and are developed using high-resolution topographic data and drainage area-scale hydraulic modeling. BLE datasets are intended to provide improved flood hazard awareness and support planning-level flood risk discussions. While BLE floodplains are typically more

accurate than older FIRM mapping developed using legacy methods, BLE data do not replace effective FIRMs and are considered non-regulatory until formally adopted by FEMA. BLE information is commonly used to assess the validity of existing flood hazard inventories and to inform floodplain analyses, particularly in areas where detailed regulatory studies have not been completed. Figure D-3 and Figure D-4 show the FEMA BLE 100-year (1-percent annual chance) and 500-year (0.2- percent annual chance) floodplains for each of the Project Sites in the Study Area for the City of Wilmot and Parkdale, respectively.

When floodplain analyses for this project were initiated, FEMA BLE data were available only for the western portion of the Study Area (Bayou Bartholomew drainage area). Those data were reviewed and incorporated during early investigations and alternatives development. FEMA BLE data are now available for the full Study Area and have been incorporated into the updated floodplain assessment, as shown on Figure D-3 and Figure D-4. The expanded BLE dataset more accurately reflects some Flood Problem Areas within the Study Area. However, even with this improved dataset, not all Flood Problem Areas identified during Scoping fall within the BLE 100-year or 500-year floodplains. This contrasts with observed conditions, as flooding has been documented in all five Project Sites during precipitation events smaller than the 100-year storm, including photo-documented flooding resulting from storm events with recurrence intervals of less than five-year, as discussed later in this section.

Figure D-5 and Figure D-6 presents the Flood Problem Areas and FEMA BLE floodplains overlain on the most recent United States Geological Survey (USGS) 1:24,000-scale topographic quadrangle for the City of Wilmot and Parkdale, respectively. It can be seen that the Cities of Wilmot and Parkdale are generally atop natural levees on the outside of meander bends of Lake Enterprise and Bayou Bartholomew, respectively, that are slightly higher than the surrounding floodplain. At these slightly higher elevations, all five of the Project Sites in the Cities of Wilmot and Parkdale are in headwater locations of their respective Project Site subwatersheds. Of the five Project Sites, only two include identified Flood Problem Areas that are within the current regulatory FEMA 100-year floodplain (Figure D-1and Figure D-2). The Flood Problem Areas in Project Sites 4 (Wilmot, Figure D-1, Figure D-3, and Figure D-5) and 5 (Parkdale, Figure D-2, Figure D-4, and Figure D-6) correlate fairly well with the regulatory FEMA 100-year floodplains; however, the Flood Problem Areas in Project Site 5 (Parkdale) that are within the regulatory FEMA 100-year floodplain are all on the Mississippi River delta floodplain and extend well beyond the limits of the regulatory FEMA 100-year floodplain. Very little of the regulatory FEMA 100-year floodplains occur on the slightly elevated landscape associated with the natural levees on the outside of meander bends of Lake Enterprise and Bayou Bartholomew on which the urbanized areas of Wilmot and Parkdale lie, respectively. However, flooding has been observed and documented in these areas during precipitation events smaller than the 100-year storm event that needs to be mitigated, including photo-documentation of flooding in these areas resulting from a 5-year storm event, as described in further detail throughout this section. In contrast, Flood Problem Areas located at higher elevations along the natural levees on the outside of meander bends of Lake Enterprise and Bayou Bartholomew fall outside of the FEMA regulatory floodplains. The discrepancies between FEMA regulatory floodplain mapping and observed flooding conditions are largely attributable to the small drainage areas and urbanized nature of the Project Sites. FEMA's regulatory floodplain mapping generally applies a minimum drainage area threshold of approximately one square mile for detailed floodplain delineation. None of the drainage areas associated with the Flood Problem Areas exceed approximately 0.6 square miles, placing them below this threshold. As such, these small, headwater subwatersheds would not be expected to be fully represented in FEMA drainage area -scale floodplain mapping. Additionally, the City of Wilmot and City of Parkdale contains a complex urban drainage network consisting of roadside ditches, culverts (many of which are partially obstructed or deteriorated), and storm sewer infrastructure. In some locations, these systems

convey flow in directions that differ from natural topographic gradients. Such localized drainage features are typically not incorporated into FEMA drainage area -scale hydraulic models used to develop regulatory FIRMs or BLE datasets.

Regardless of FEMA floodplain designation, frequent flooding is occurring within the identified Flood Problem Areas, and the resulting impacts require mitigation. Therefore, additional site-scale hydraulic analysis was necessary to adequately characterize flooding conditions and quantify flood damages for economic evaluation purposes. Consistent with NRCS requirements for Expected Annual Damage (EAD) analysis, refined Hydrologic Engineering Center's River Analysis System (HEC-RAS) modeling was performed for each Project Site to simulate the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year storm events. This modeling effort, described in detail in Section 3.1, provides the basis for evaluating flood extents, depths, and damages within the small, urbanized catchments of the Study Area.

The remainder of this section presents a detailed discussion of existing drainage conditions, observed flood impacts identified during Scoping, and the suspected causes of flooding within each of the five Project Sites.

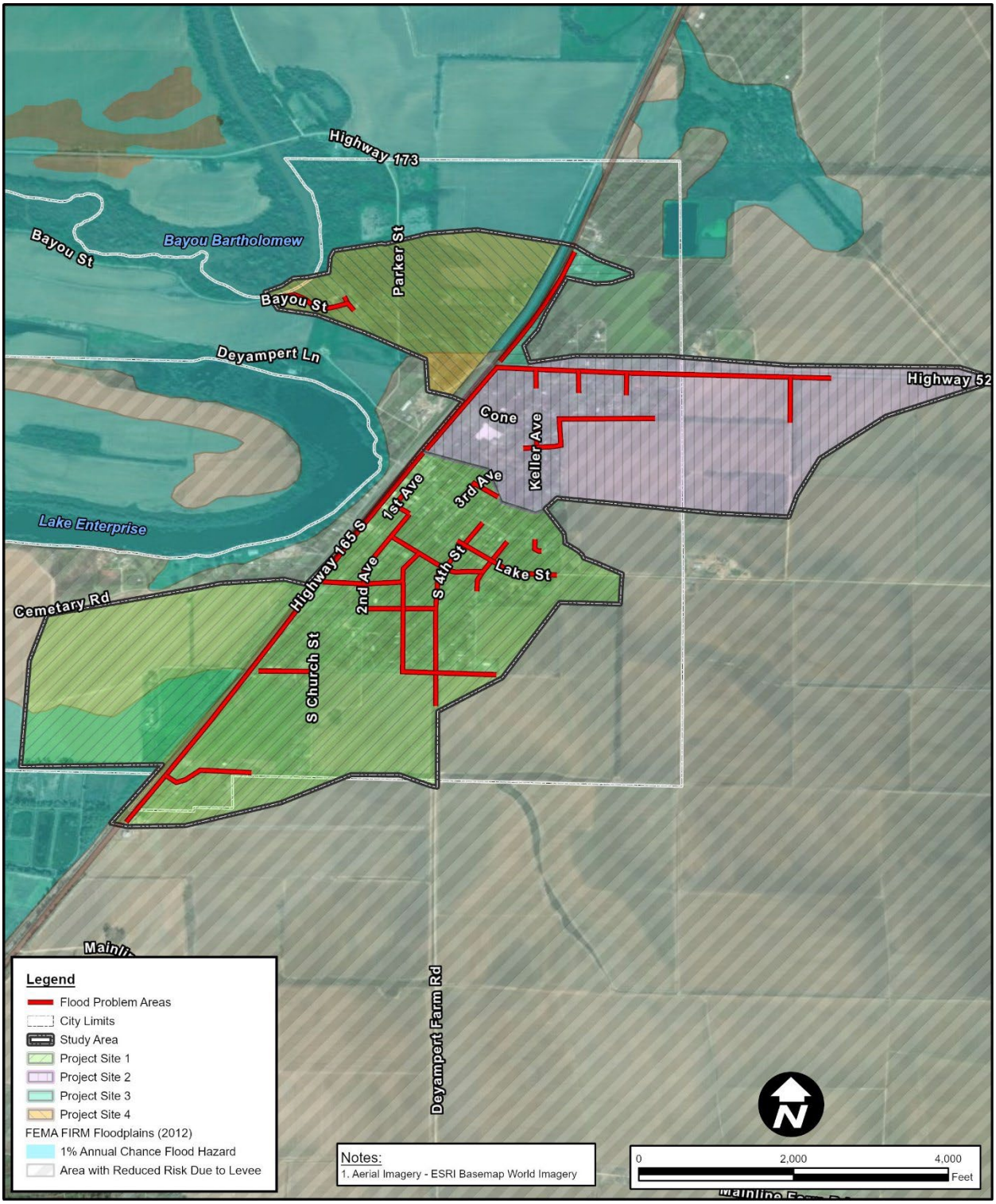


Figure D-1. Four Subwatersheds/Project Sites in the Study Area with Flood Problem Areas and FEMA FIRM floodplains: City of Wilmot

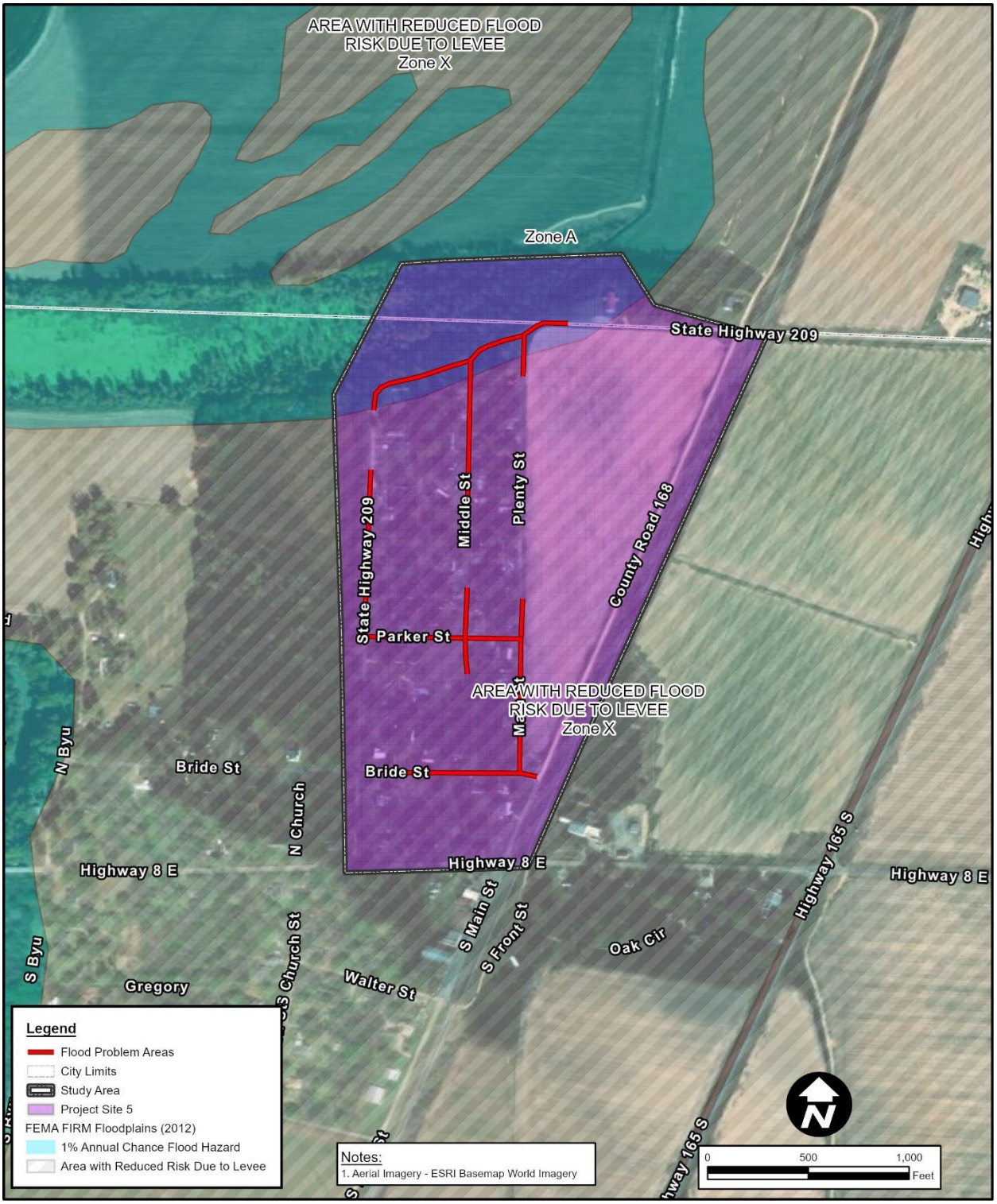


Figure D-2. One Subwatershed/Project Site in the Study Area with Flood Problem Areas and FEMA FIRM floodplains: City of Parkdale

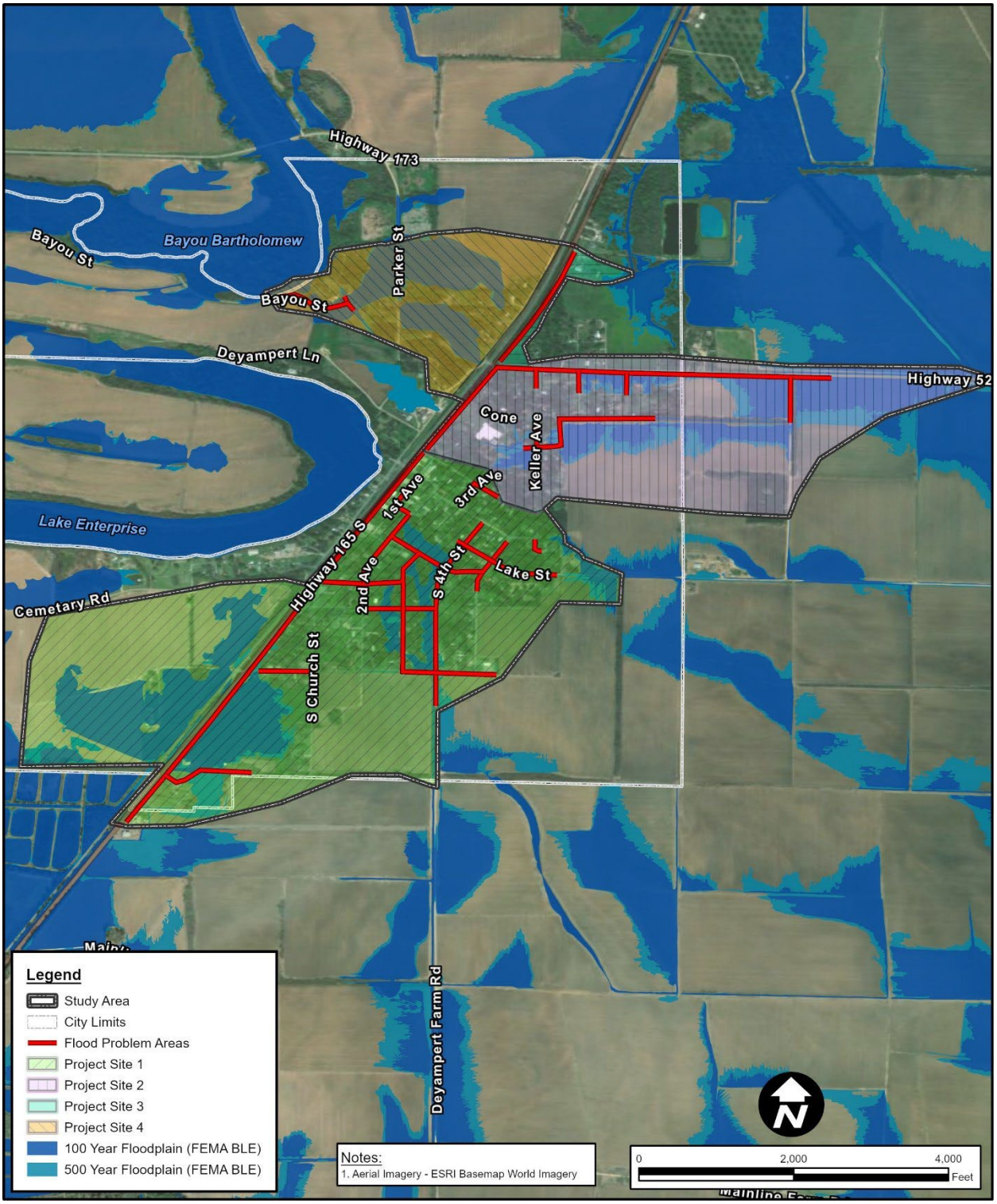


Figure D-3. Four Subwatersheds/Project Sites in the Study Area with Flood Problem Areas and FEMA BLE 100-year and 500-year floodplains: City of Wilmot

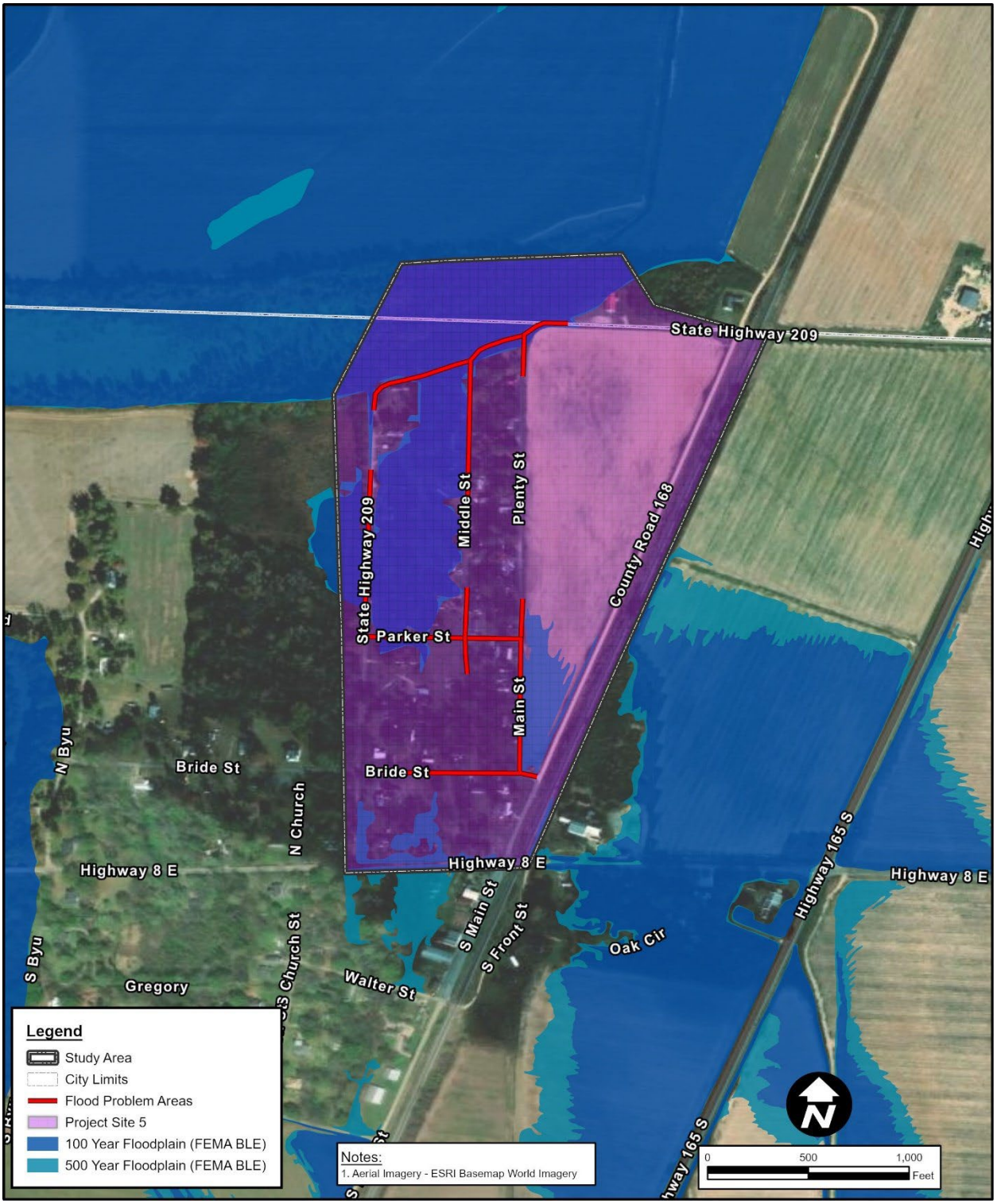


Figure D-4. One Subwatersheds/Project Site in the Study Area with Flood Problem Areas and FEMA BLE 100-year and 500-year floodplains: City of Parkdale.

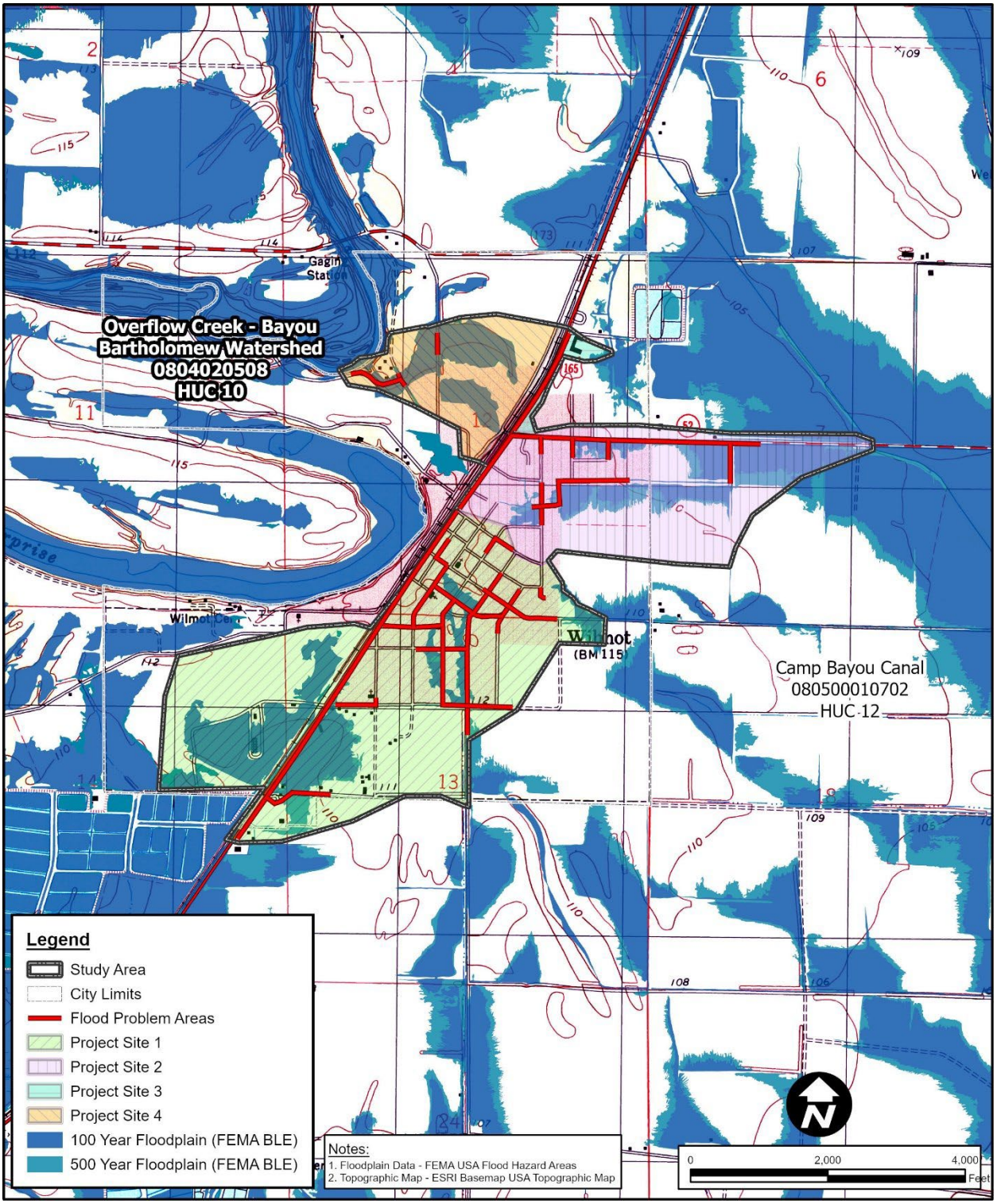


Figure D-5. Flood Problem Areas and FEMA BLE 100-Year and 500-Year Floodplains on USGS Topographic Quadrangle (1:24,000) Map for the Study Area: City of Wilmot

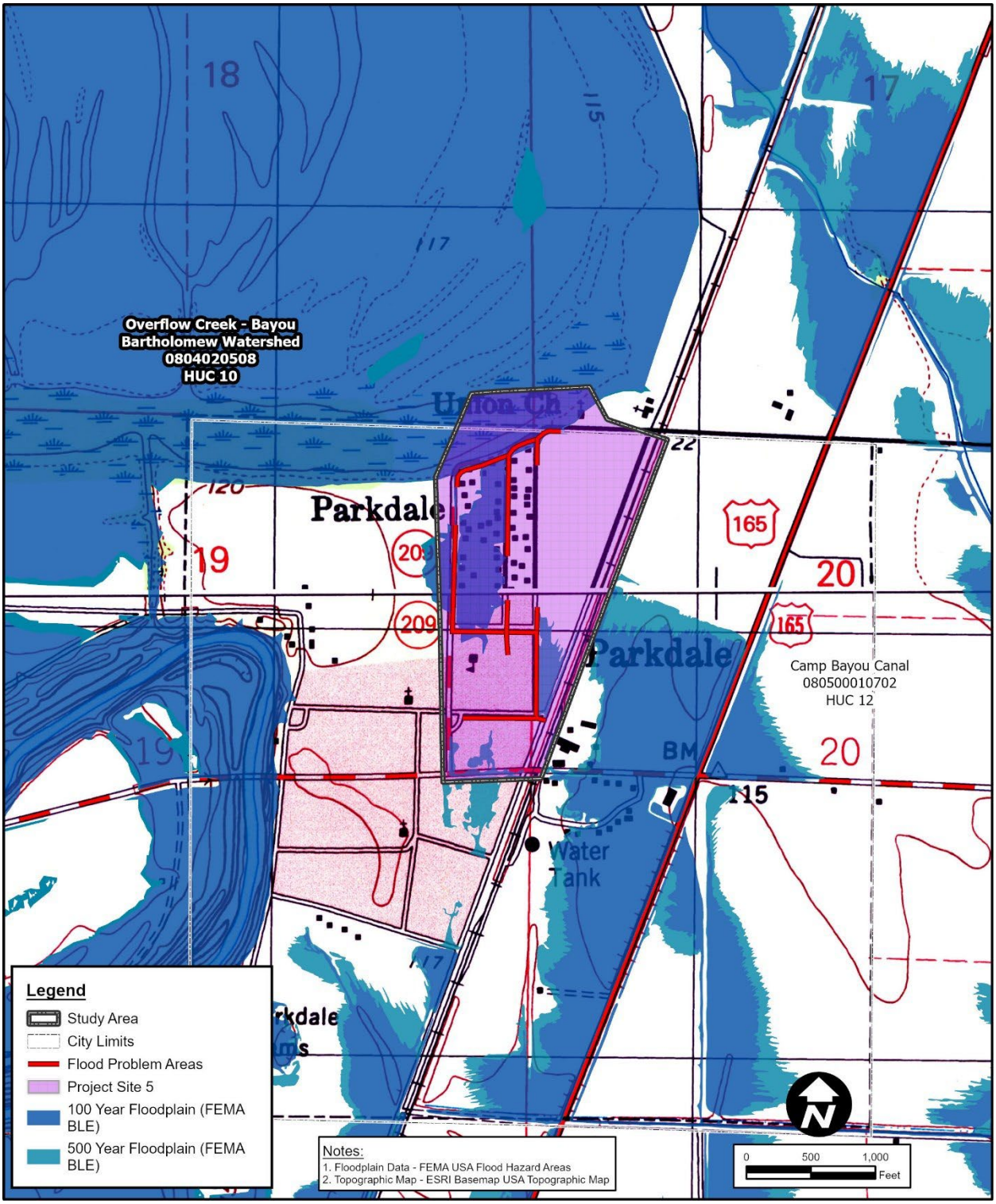


Figure D-6. Flood Problem Areas and FEMA BLE 100-Year and 500-Year Floodplains on USGS Topographic Quadrangle (1:24,000) Map for the Study Area: City of Parkdale

City of Wilmot Project Sites

Figure D-1, Figure D-3, and Figure D-5 show the Flood Problem Areas and the FEMA 100-year and 500-year floodplains for Project Sites 1 through 4, respectively. It can be seen on these figures that the majority of the City of Wilmot is along the eastern side of the north–south-oriented Union Pacific Railroad and U.S. Highway 165, which generally runs adjacent and parallel to the elevated railroad, as shown on Figure D-5. The city generally is on the drainage divide between the Overflow Creek - Bayou Bartholomew and Camp Bayou Canal watersheds, as shown on Figure D-1 and Figure D-3. There are no drainage culverts or bridges under the railroad on the southern side of the town. All lands west of the railroad drain west and south to Lake Enterprise and Bayou Bartholomew or its tributaries. The lands east of the railroad in the southern part of the City of Wilmot are conveyed to roadside ditches that drain south along State Highway 52 and the railroad, eventually flowing west in a culvert crossing under the railroad approximately 0.6 mi south at Wilmot City Park. At this point, these waters then drain to an unnamed oxbow swamp that ultimately outfalls to Bayou Bartholomew. The small area of land east of U.S. Highway 165 and north of State Highway 52 drains south along U.S. Highway 165 to State Highway 52, where it crosses under U.S. Highway 165 and the railroad and then flows to Bayou Bartholomew. All other stormwaters on the eastern side of the City of Wilmot drain south and/or east to various agricultural ditches and unnamed tributaries to Dry Bayou, which outfalls to Camp Bayou Canal southeast of Wilmot in Louisiana, which then converges with the Boeuf River well south of the City of Wilmot in Louisiana. The raised bed of the Union Pacific Railroad is the highest point through the City of Wilmot; all of the Project Sites discussed here, which generally are on the broad, flat Mississippi River Delta Floodplain, are fairly small headwater areas (less than 0.3 mi^2) of the Bayou Bartholomew and Camp Bayou watersheds. Below is a description of the flood problems identified in each of the four Project Sites within the Study Area in the City of Wilmot.

City of Parkdale Project Site

The City of Parkdale is on the drainage divide between the Bayou Bartholomew watershed to the west and Camp Bayou watershed to the east. It is generally bordered on its eastern side by the elevated, north–south-oriented Union Pacific Railroad; on its western side by Bayou Bartholomew; and on its northern side by an unnamed oxbow wetland, which outfalls to Bayou Bartholomew, as shown on Figure D-2, Figure D-4, and Figure D-6. The eastern side of town drains to culverts under the railroad at State Highway 8, where roadside ditches then carry the flows east under U.S. Highway 165, then through agricultural ditches to Camp Bayou, which then converges with the Boeuf River well south of the City of Wilmot in Louisiana. The western side of town drains west to Bayou Bartholomew, and the northernmost part of town drains to the unnamed oxbow wetland. Below is a description of the flood problems identified in the single Project Site within the City of Parkdale.

2.1 Site 1: City of Wilmot, Southside Stream Corridor

The identified Flood Problem Areas and the FEMA 100-year and 500-year floodplains in the Southside Stream Corridor Project Site are shown in Figure D-1, Figure D-3, and Figure D-5. The Flood Problem Areas are largely associated with an unnamed stream that occupied the Project Site area prior to the development of the street grid system. The micro-contours that identify the pre-development location of the stream and its small headwater ephemeral channels are not evident in the USGS topographic quadrangle map shown in Figure D-5, but can be identified in the more precise topographic contour data available from LiDAR data for the area

available from the State of Arkansas Geospatial Information System (GIS) Office website (Arkansas GIS Office, n.d.)

This stream was abandoned and converted to roadside and drainage ditches via the development of the street grid and the associated roadside and drainage ditches. The original stream's headwaters were at the northern end of the Project Site, and the stream ultimately flowed generally south between what are now Fourth Street and Third Street to just south of Curry Street, where it flowed southwest across what is now Wilmot City Park and the current location of U.S. Highway 165 and the Union Pacific Railroad. It would then outfall to the unnamed oxbow wetlands that run parallel to and west of the Union Pacific Railroad, approximately 0.4 mi south–southwest of City Park. Currently, the roadside ditches and culverts associated with the majority of the street grid in the Project Site 1 drain to the corner of Curry Street and Fourth Street, where they enter a large manmade ditch that runs south along Fourth Street, where it becomes Deyampert Farm Road. This drainage ditch then runs due south all the way to the Louisiana state line. Stormwater on the western edge of the Southside Stream Corridor Project Site, along U.S. Highway 165/Main Street, flows to a highway ditch along the highway that carries the stormwaters south–southeast to a culvert under U.S. Highway 165 near the entrance to City Park, where it then flows south–southwest in a ditch between the highway and the Union Pacific Railroad for approximately 0.4 mi to the culvert that outfalls to the unnamed oxbow wetlands.

Flooding frequently inundates the roads and floods several residential structures north of Curry Street, as shown Figure D-5. Flooding also frequently floods the properties and roadside ditches along the eastern side of U.S. Highway 165/Main Street and a large portion of the Wilmot City Park property and road. The photos in Figure D-7 through Figure D-14, which were provided by the City of Wilmot and are included in the Preliminary Investigation Findings Report (PIFR), show flooding of streets, residential properties, and structures taken after an estimated rainfall of 4.7 inches on December 31, 2020. This was based on daily precipitation data available online for nearby NOAA weather station in Portland, Arkansas from the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information. The Portland NOAA weather station is less than 13 mi from the City of Wilmot and is used here as a proxy. NOAA Atlas 14 predicted rainfall events for the Portland, Arkansas weather station were also obtained from NOAA's online Precipitation Frequency Data Server (National Oceanic and Atmospheric Administration National Weather Service, n.d.), whose data is derived from Perica et al. (2013). The recorded rainfall event of 4.7 inches is well below the NOAA Atlas 14 predicted 100-year, 24-hour rainfall for Portland of 9.1 inches and is closer to but still less than the NOAA Atlas 14 predicted 5-year, 24-hour rainfall for Portland of 5.3 inches.

Figure D-7and Figure D-8 show street and residential flooding from the corner of School and Fourth Streets, looking northwest and southeast, respectively. Figure D-9 and Figure D-10 show the street and residential flooding from the corner of School and Third Streets looking southwest and from the corner of School and Second Streets, looking southwest, respectively. Figure D-11 and Figure D-12 show street flooding from the corner of Curry and Church Streets, looking west and east, respectively. Figure D-13 and Figure D-14 show U.S. Highway 165/Main Street roadside ditch and City Park flooding from the corner of U.S. Highway 165 and Wilmot City Park Entrance, looking northeast and east, respectively.

The abandonment and conversion of the historic Wilmot City Park Stream to roadside and drainage ditches, construction of roads in the natural stream corridor and valley, and undersized, obstructed, or damaged stormwater collection systems are the primary causes of flooding in Project Site 1, with other hydromodification stressors also contributing to the problems.



Figure D-7. Looking northwest from the corner of School and Fourth Streets.



Figure D-8. Looking southeast from the corner of School and Fourth Streets.



Figure D-9. Looking southwest from the corner of School and Third Streets.



Figure D-10. Looking southwest from the corner of School and Second Streets.



Figure D-11. Looking west from the corner of Curry and Church Streets.

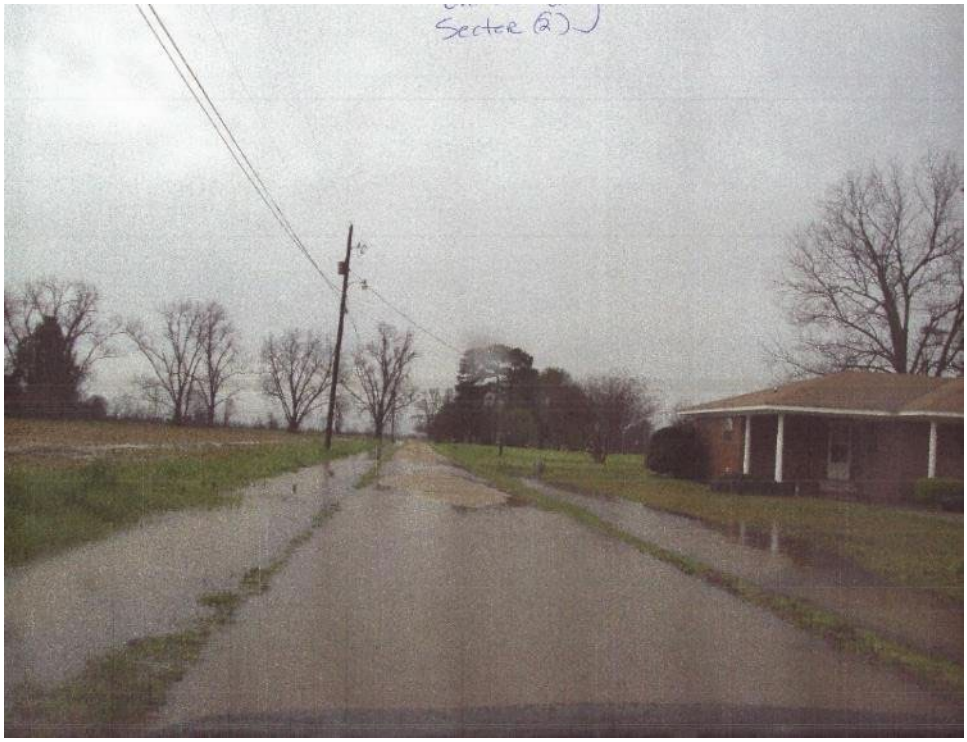


Figure D-12. Looking east from the corner of Curry and Church Streets.



Figure D-13. Looking northeast from the corner of U.S. Highway 165 and the Wilmot City Park entrance.



Figure D-14. Looking east from the corner of U.S. Highway 165 and the Wilmot City Park entrance.

2.2 Site 2: City of Wilmot, Central Drainage Area

The identified Flood Problem Areas and the regulatory FEMA 100-year and 500-year floodplains in the Central Drainage Area Project Site are shown in Figure D-1, Figure D-3, and Figure D-5. The Flood Problem Areas are largely associated with unmaintained roadside and drainage ditches and undersized and damaged culverts.

Precipitation in this Project Site is collected in roadside ditches starting at the headwaters at U.S. Highway 165. The stormwaters are then conveyed east in a roadside ditch on the southern side of State Highway 52 and in a parallel drainage ditch that has been constructed from Keller Avenue east. Flows in the parallel drainage ditch are then conveyed north and then east along the edge of the agricultural fields to the east of the City of Wilmot and outfalls to the State Highway 52 roadside ditch. The State Highway 52 roadside ditch continues east from County Road for approximately 0.4 mi to outfall to an unnamed tributary to Dry Bayou that flows from northwest–southeast under State Highway 52 and continues southeast, then east, and then south to Dry Bayou.

Flooding frequently occurs along U.S. Highway 165/Main Street and inundates the roads and floods a few residential properties and structures along Keller Avenue between Third and Cone Streets, as shown in Figure D-5. There is also frequent flooding of the properties and roadside ditches along both sides of State Highway 52 and along the drainage ditch that has been constructed from Keller Avenue then east along the edge of the agricultural fields to the east of the city, as shown in Figure D-5. Undersized, obstructed, or damaged stormwater collection system components (ditches and culverts) are the primary causes of flooding in Project Site 2, with all of the other hydromodification stressors also contributing to the problems. Figure D-15 and Figure D-16 show undersized, damaged, and/or clogged culverts on Keller Avenue and the south side of State Highway 52, respectively.



Figure D-15. Road crossing and roadside culverts looking south on Keller Avenue.



Figure D-16. Roadside ditch culvert looking east on State Highway 52

2.3 Site 3: City of Wilmot, Northside Drainage Area

The identified Flood Problem Areas and the FEMA 100-year and 500-year floodplains in the Northside Drainage Area Project Site are shown in Figure D-1, Figure D-3, and Figure D-5. The Flood Problem Areas are largely associated with unmaintained roadside and drainage ditches and undersized and damaged culverts.

Precipitation in this Project Site is collected in the roadside ditch on the eastern side of U.S. Highway 165, with the headwaters approximately 0.3 mi north of State Highway 52. The stormwaters are conveyed south–southeast along the eastern side of U.S. Highway 165 to State Highway 52, where a culvert conveys the flows west under the highway to a short ditch that flows south, then flows west under the Union Pacific Railroad to a ditch. The ditch then conveys the waters less than 100 ft west to outfall to a wooded wetland area.

Flooding frequently occurs along U.S. Highway 165 and inundates the driveways and floods a few residential properties along the eastern side of U.S. Highway 165, as shown in Figure D-5. Flooding also frequently floods the properties and roadside ditches along the southern side of State Highway 52 and along the drainage ditch that has been constructed from Keller Avenue to the east along the edge of the agricultural fields to the east of the City of Wilmot, as shown in Figure D-5. Undersized, obstructed, or damaged stormwater collection system components (ditches and culverts) are the primary causes of flooding in Project Site 3, with other hydromodification stressors also contributing to the problems. Figure D-17**.** and Figure D-18 show undersized, damaged, and/or clogged culverts on the Union Pacific Railroad and the east side of U.S. Highway 165, respectively.



Figure D-17. Culvert crossing under Union Pacific Railroad (looking west from U.S. Highway 165).



Figure D-18. Roadside ditch culvert on east side U.S. Highway 165 (looking east).

2.4 Site 4: City of Wilmot, Northwest Drainage Area

The identified Flood Problem Areas and the FEMA 100-year 500-year floodplains in the Northwest Drainage Area Project Site are shown in Figure D-1, Figure D-3, and Figure D-5. The Flood Problem Areas are largely associated with unmaintained roadside and drainage ditches and undersized and damaged culverts.

The headwaters for this Project Site are the tended residential properties west of the Union Pacific Railroad and north of Bayou Street until roughly the intersection of Parker Street. All headwaters east of Parker Street eventually flow to the small wooded oxbow wetland that is transected by Parker Street. The waters exit the oxbow at the southwest end and outfall to a small drainage ditch that then passes under Bayou Street twice before outfalling to a U.S. Army Corps of Engineers (USACE) installed gravity drainage sump and outfall culvert system to Bayou Bartholomew, whose outfall culvert is equipped with a backflow prevention flap gate. Flooding frequently occurs along Bayou Street and Earl's Drive and the adjacent properties where the drainage ditch crosses under Bayou Street, and Parker Street is frequently inundated, as shown in Figure D-5. Figure D-19 and Figure D-20 show undersized and damaged culverts under Bayou Street and the outfall pipe of the USACE-installed gravity drainage sump and outfall system to Bayou Bartholomew, respectively.



Figure D-19. Culvert crossing under Bayou Street (looking northwest).



Figure D-20. USACE-installed outfall to Bayou Bartholomew.

2.5 Site 5: City of Parkdale, North Parkdale

The identified Flood Problem Areas and the FEMA 100-year and 500-year floodplains in the North Parkdale Project Site are shown in Figure D-2, Figure D-4, and Figure D-6. The Flood Problem Areas are largely associated with unmaintained roadside and drainage ditches and undersized and damaged culverts.

Precipitation in most of this Project Site is collected in roadside ditches and is conveyed either to a roadside ditch on the western side of School Street that flows north to the unnamed oxbow wetland or to the culvert under the Union Pacific Railroad. A small portion of the northernmost area of the Project Site drains via a natural drainage directly to the north into the unnamed oxbow wetland. This drainage is between Middle and School Streets and flows through a culvert under the northern section of School Street that runs generally west–east along the southern edge of the unnamed oxbow wetland.

Flooding frequently occurs along the majority of streets and the yards of adjacent properties within the Project Site, as shown in Figure D-6. Flooding is exacerbated in the Project Site by a clogged and elevated culvert that drains the unnamed oxbow wetland to Bayou Bartholomew via an agricultural drainage ditch that flows due south from the oxbow wetland under Grave Road to Bayou Bartholomew. Figure D-21, Figure D-22, and Figure D-23 show an undersized and buried roadside ditch culvert on Parker Street, the natural drainage road crossing culvert to the oxbow wetland on School Street, and the undersized road crossing culvert on Main Street, respectively. Figure D-24 shows the clogged road crossing culvert under Grave Road, looking upstream at the agricultural drainage ditch that drains the unnamed oxbow wetland to Bayou Bartholomew. Undersized, obstructed, or damaged stormwater collection system components

(ditches and culverts) are the primary causes of flooding in Project Site 5, with other hydromodification stressors also contributing to the problems.



Figure D-21. Roadside culvert on north side of Parker Street (looking east).



Figure D-22. Natural drainage road crossing the culvert to the oxbow wetland on School Street (looking east).



Figure D-23. Road crossing culvert on Main Street (looking north).



Figure D-24. Grave Road crossing the culvert (looking upstream) on the agricultural drainage ditch from the unnamed oxbow wetland to Bayou Bartholomew (looking north from Grave Road).

3 Engineering

This section is organized under headings for the engineering investigations and analyses performed, including site hydrology and hydraulics; identification and conceptual/planning-level

design of the initial array of alternatives; first screening of the initial array using the Project's purpose, need, objectives, and constraints; and application of the PR&G guiding principles established for the project. It also includes the Engineers' Opinion of Probable Costs (EOPC) for the twelve Action Alternatives remaining after the first screening. The engineering investigations and analyses were conducted in accordance with applicable NRCS criteria and standards.

3.1 Hydrology and Hydraulic Modeling

Hydrologic and hydraulic analyses were conducted to quantify the No Action Alternative and with-Project flood conditions for the 12 action Alternatives moved forward for the final array of Alternatives (described in Section 3.3) within the Cities of Wilmot and Parkdale for use in flood damage estimation and evaluation of proposed drainage improvements. The 12 Action Alternatives are based on the preferential application of two different types of drainage improvement components: 1) Nature-Based Solutions- (NBS-) focused drainage components, and 2) Traditional-Focused drainage components. The 12 action Alternatives include alternatives for each individual Project Site (Alternatives 1A through 5A [NBS-Focused] and 1B through 5B [Traditional-Focused, as described in Sections 3.2.8 and 3.3]) and for the entire Study Area (Alternatives 6A and 6B). The analyses support a multi-frequency flood damage assessment consistent with NRCS planning-level watershed study requirements and provide water-surface elevations and inundation extents for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year flood events. For the Action Alternatives, the layout for the NBS-focused and traditional-focused Alternatives are generally the same, the only difference being the use of Stream Management Corridors (SMCs) in the NBS-focused alternatives and traditional, riprap-lined flood control channels in the traditional-focused alternatives for the conveyance/major drainage components downstream of the collection/minor drainage components. Further because the traditional-focused drainage improvements for conveyance channels (i.e., trapezoidal, riprap-lined flood control channels) will be designed to provide the same level of conveyance as the NBS-focused SMC flood control channel component, it is assumed that the NBS-focused and traditional-focused alternatives will have the same general conveyance capacity and dimensions and approximate limits of disturbance (LOD) to implement the drainage improvements and the same reductions in flood damages as the NBS-focused alternatives. Therefore, modeling results for the Action Alternatives at each Project site are representative of both the NBS-focused and traditional-focused alternatives.

3.1.1 Hydrologic and Hydraulic Modeling Approach

Hydrologic and hydraulic analyses were conducted to evaluate flooding under existing and proposed conditions using a two-dimensional (2D) rain-on-grid modeling approach. The modeling was performed using the USACE's HEC-RAS Version 6.7 Beta 4a, and simulated overland flow, surface conveyance, and floodplain interactions resulting from design storm precipitation events. Model results provide spatially distributed flood depths and inundation extents used to support flood damage estimation and comparison of existing and proposed conditions.

Modeling Framework and Assumptions

Flooding within the study area was evaluated using the HEC-RAS 2D Rain-on-Grid modeling framework. The FEMA BLE Bayou Bartholomew drainage area (HUC 08040205) and the Beouf drainage area (HUC 8050001) models were used as a starting point, and the model domains were refined and simplified to represent local site conditions. Time-varying precipitation was applied directly to the two-dimensional computational mesh and routed across the terrain

surface, allowing hydrologic and hydraulic processes to be simulated simultaneously. Peak flows are computed internally by the model as a result of rainfall, terrain, and surface characteristics rather than being prescribed as inflow boundary conditions.

Terrain for the model was developed using the 2016 U.S. Geological Survey (USGS) one-meter resolution digital elevation model (DEM). A two-dimensional computational mesh was generated and refined in areas of concentrated flow and drainage features to adequately represent overland flow paths and surface conveyance.

Design storm rainfall depths for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year, 24-hour storm events were obtained from NOAA Atlas 14 precipitation-frequency estimates for the Project location (National Oceanic and Atmospheric Administration National Weather Service, n.d.). Temporal rainfall distributions were developed using the NRCS Type II 24-hour storm distribution and applied at a 6-minute computational interval.

Manning's roughness coefficients were represented using a spatially distributed land use layer based on National Land Cover Database (NLCD) classifications (U.S. Multi-Resolution Land Characteristics Consortium, 2021). Roughness values were assigned by land cover type. Infiltration losses were represented using a constant loss rate approach based on NLCD land use classifications. These parameters were applied consistently across all modeled storm events to support relative comparison between existing and proposed conditions.

Downstream boundary conditions were defined using normal-depth assumptions, with friction slopes selected based on local terrain gradients and channel characteristics.

No Action Alternative Model Development

The No Action Alternative model represents current site conditions without any proposed drainage improvements. Existing topography was defined using the unmodified USGS DEM, and land cover–based roughness and infiltration parameters were applied to reflect present-day conditions.

No structural or grading modifications were included in the No Action Alternative model. This scenario establishes a baseline representation of flood extents and depths for each design storm event.

Proposed Alternatives Condition Model Development

The 12 Action Alternatives that were modeled to represent proposed conditions are described in Section 3.3. As noted in Section 3.1, the level of flood reduction are expected to be the same for the NBS-focused Alternatives (1A, 2A, 3A, 4A, 5A, and 6A) as for the Traditional-focused Alternatives (1B, 2B, 3B, 4B, 5B, and 6B), and therefore the proposed conditions model is representative of both sets of Alternatives.

The proposed conditions model was developed by modifying the No Action Alternative terrain to reflect planned drainage improvements and conveyance modifications associated with the 12 Action Alternatives. The rainfall hyetographs and infiltration parameters were held consistent with the No Action Alternative model.

Manning's roughness coefficients remained unchanged except in areas of proposed SMCs, where values were adjusted to reflect the anticipated land cover and surface conditions. This approach allows differences in modeled flood behavior to be attributed to proposed physical improvements rather than changes in hydrologic inputs.

Output for Economic Analysis

Model output from the HEC-RAS simulations includes spatially distributed flood depths, maximum water surface elevations, and inundation extents for each storm event under both existing and proposed conditions. These results were exported and integrated with the USACE HEC's National Structure Inventory (NSI) structure and infrastructure dataset (U.S. Army Corps of Engineers, 2022) to support flood damage estimation, as described further in Section 4.

Flood water surface elevations at individual structures were used to determine flood depths for application of depth–damage relationships to estimate event-based flood damages. Modeled results provide the technical basis for calculating reductions in flood damages between existing and proposed conditions and support the economic analyses presented in Section 4.

The inundation levels for each modeled flood event under the No Action Alternative are shown in Figure D-25 through Figure D-31. The acres of inundation for each modeled flood event are summarized in Table D-1. Estimated structure, content, and vehicle damages for each flood event are detailed in Section 4.2.

Table D-1. Acres of Inundation for Each Modeled Flood Event under the No Action Alternative[1]

Site Name	2-Year Storm Event (Ac)	5-Year Storm Event (Ac)	10-Year Storm Event (Ac)	25-Year Storm Event (Ac)	50-Year Storm Event (Ac)	100-Year Storm Event (Ac)	500-Year Storm Event (Ac)
Site 1: Southside Stream Corridor (Wilmot)	198	206	212	220	225	230	240
Site 2: Central Drainage Area (Wilmot)	115	120	123	128	130	133	138
Site 3: Northside Drainage Area (Wilmot)	4	4	4	4	4	4	5
Site 4: Northwest Drainage Area (Wilmot)	41	43	44	46	47	48	50
Site 5: City of Parkdale Project Site	57	58	59	60	62	62	64
Full Study Area	415	431	442	458	468	477	497

[1] Rounding: AESB values are rounded to the nearest 1 acre, consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

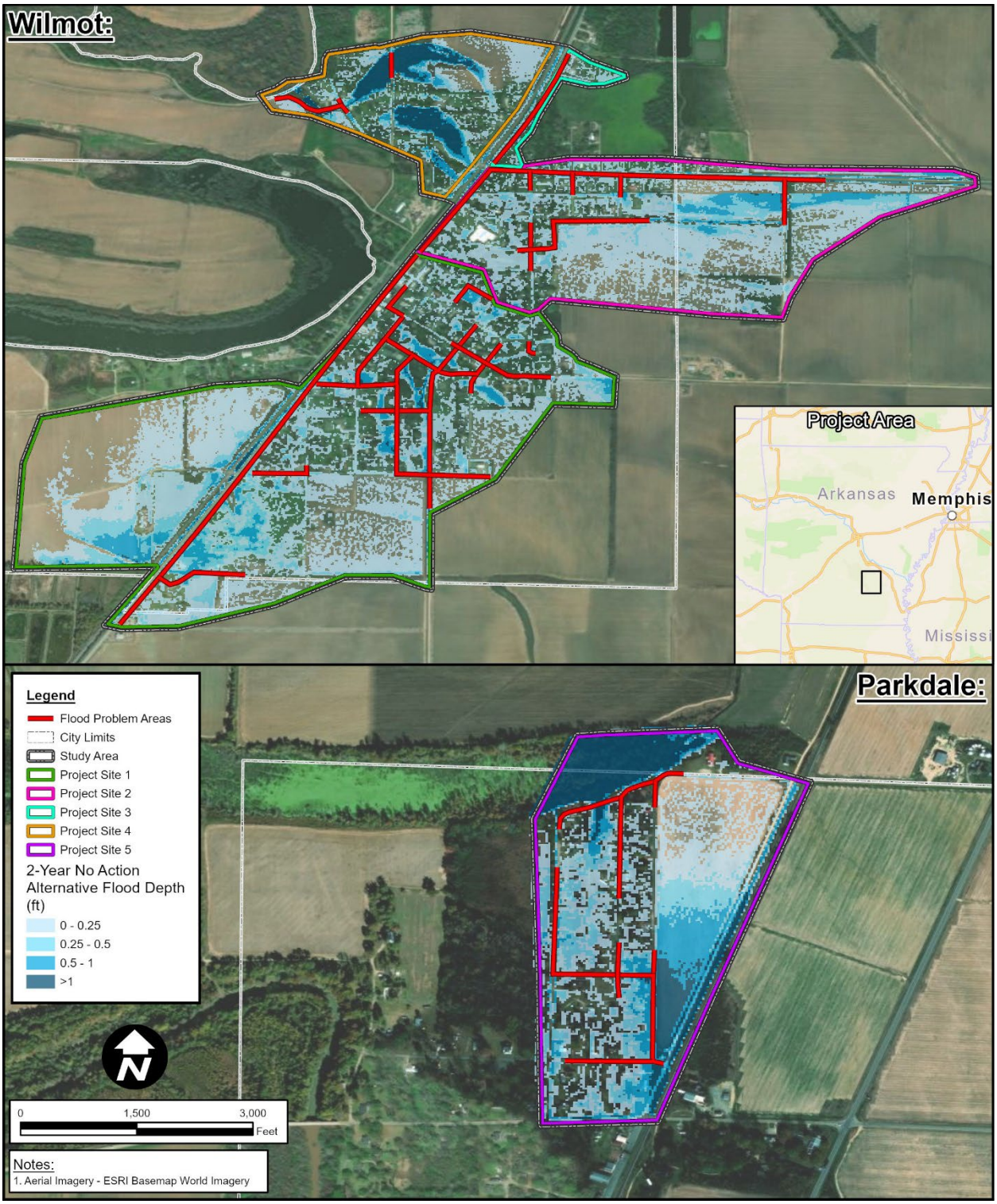


Figure D-25. HEC-RAS Modeled 2-Year Flood Event for the No Action Alternative.

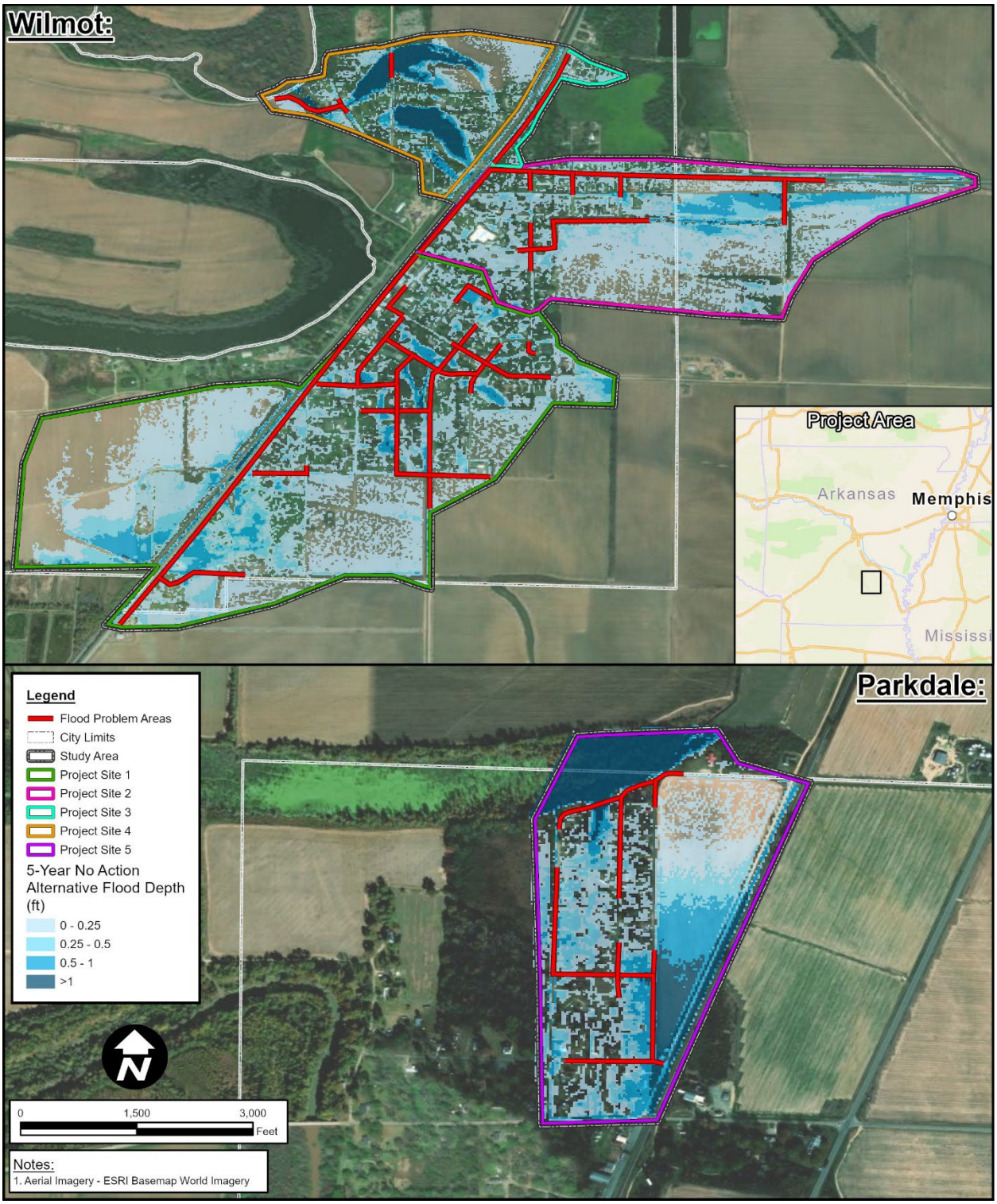


Figure D-26. HEC-RAS Modeled 5-Year Flood Event for the No Action Alternative.

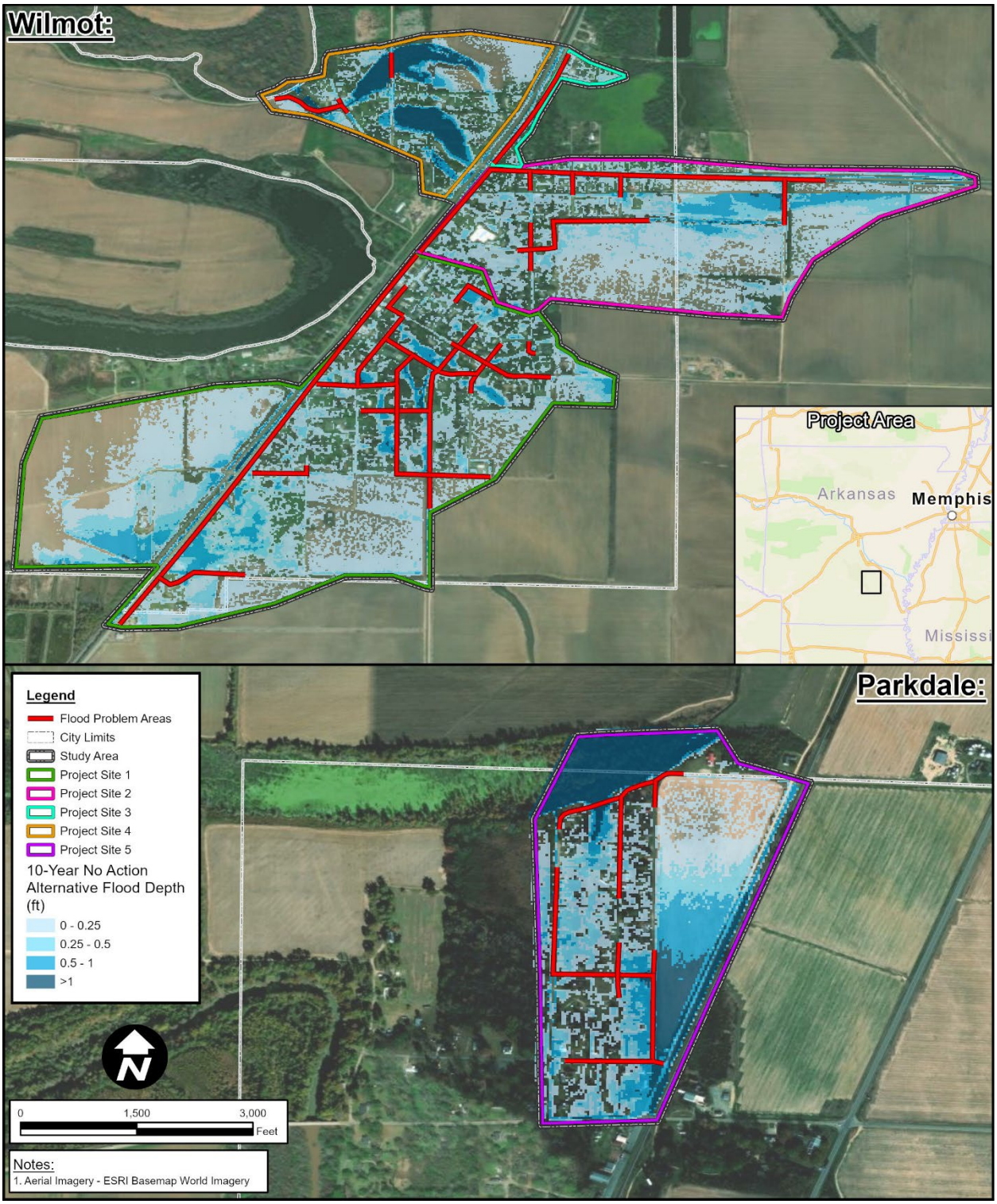


Figure D-27. HEC-RAS Modeled 10-Year Flood Event for the No Action Alternative

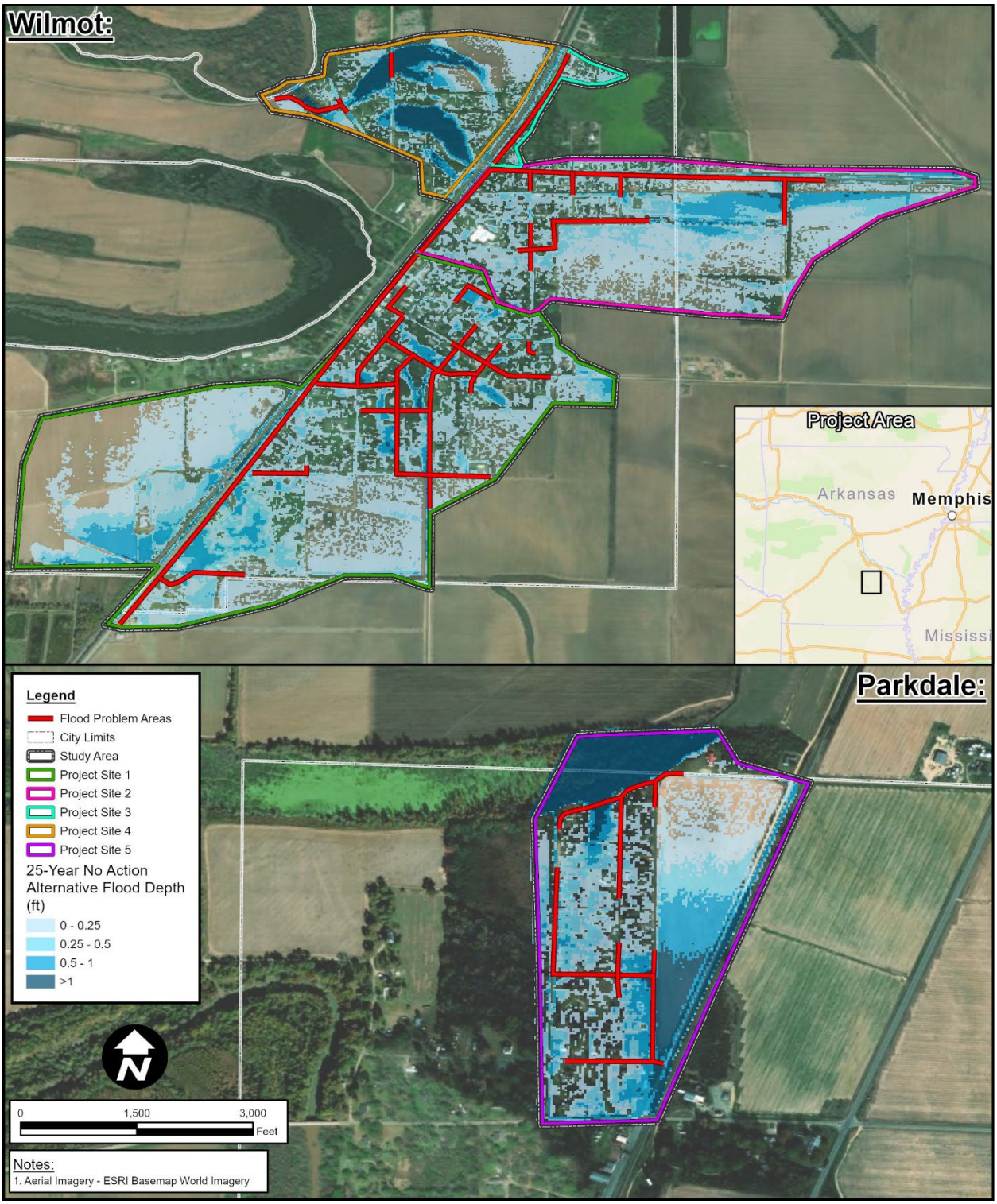


Figure D-28. HEC-RAS Modeled 25-Year Flood Event for the No Action Alternative

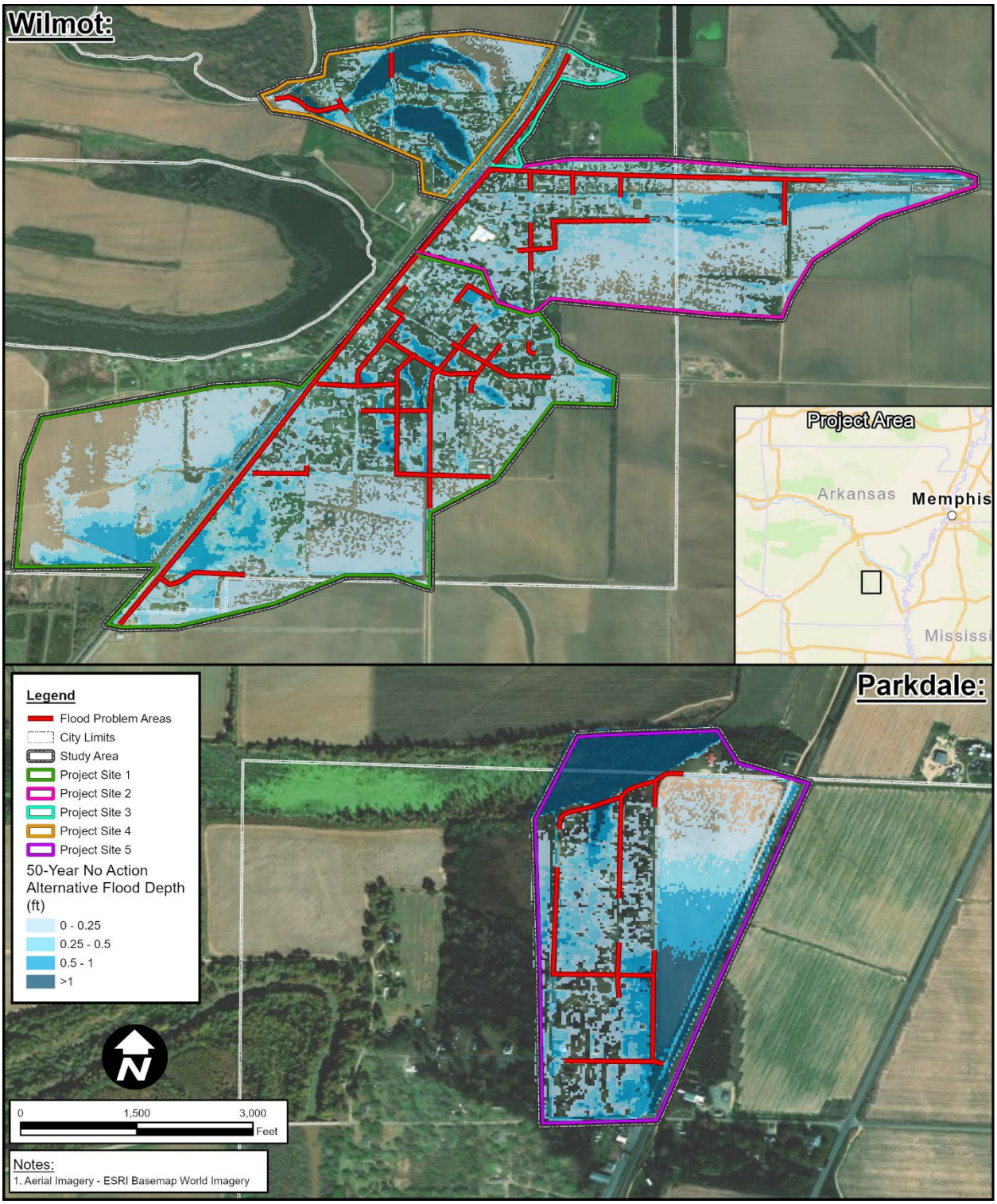


Figure D-29. HEC-RAS Modeled 50-Year Flood Event for the No Action Alternative

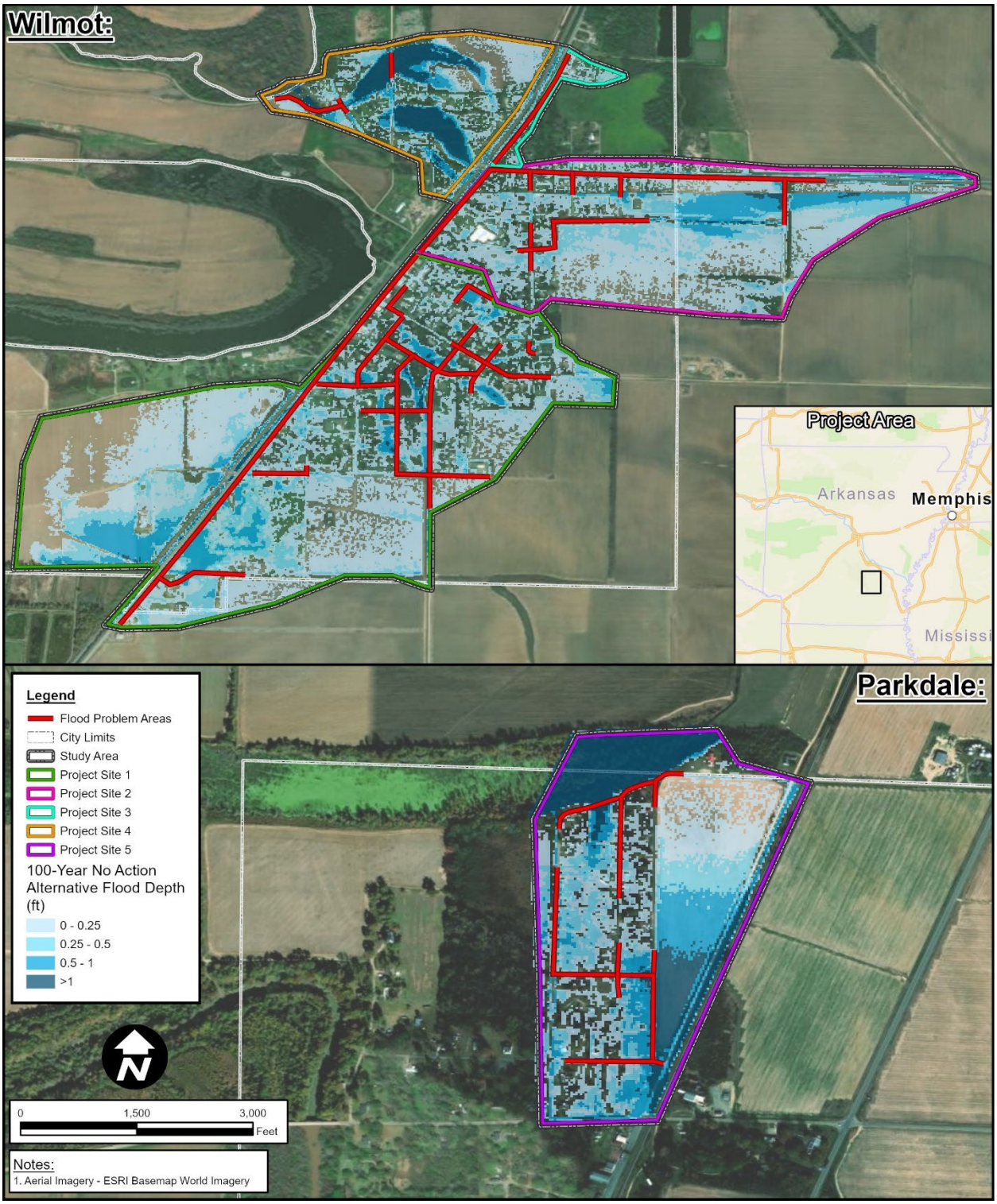


Figure D-30. HEC-RAS Modeled 100-Year Flood Event for the No Action Alternative

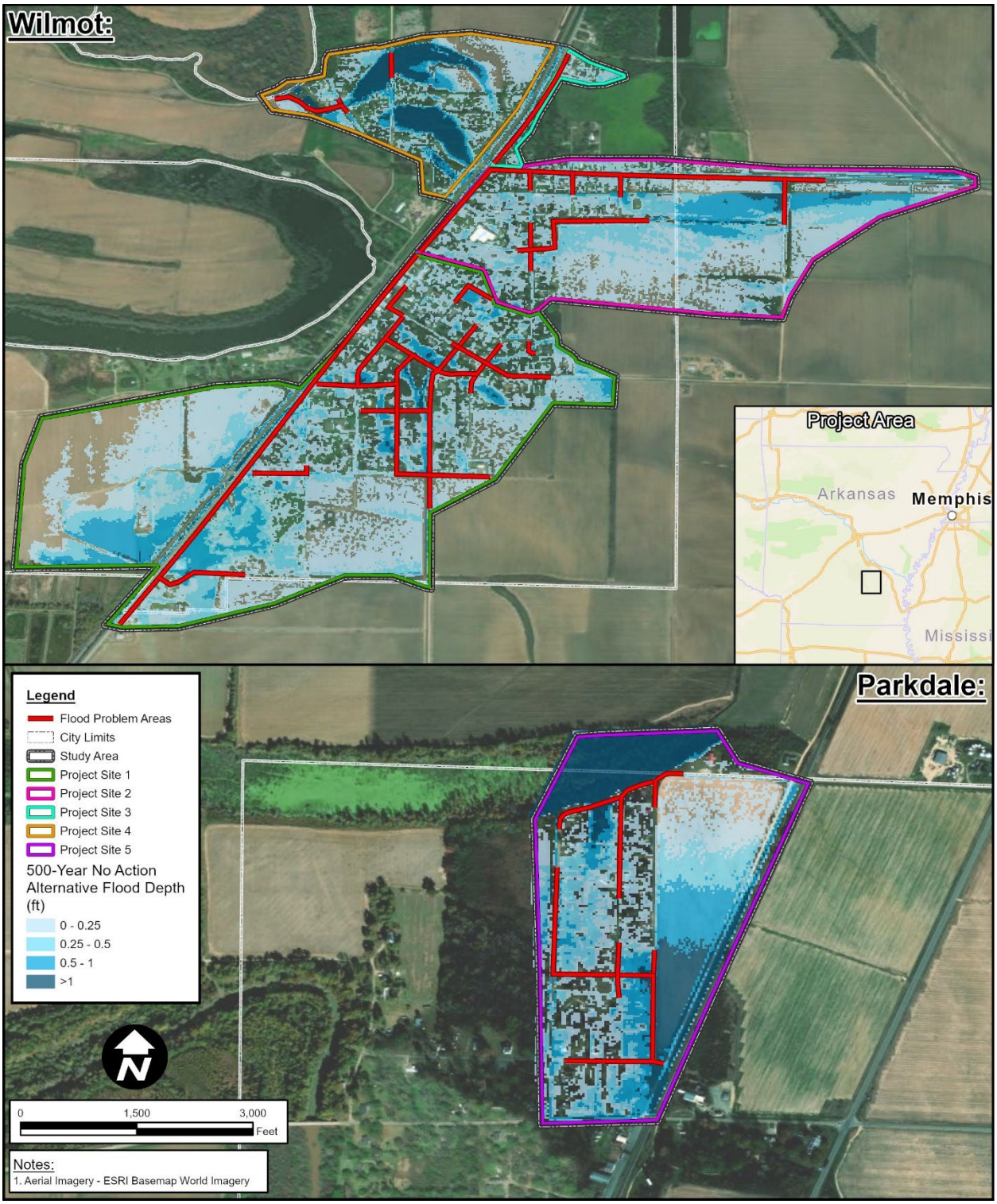


Figure D-31. HEC-RAS Modeled 500-Year Flood Event for the No Action Alternative

Hydrologic and hydraulic modeling results indicate that the proposed Action Alternatives (described in Section 3.3) provide meaningful reductions in flood depths and flood extents within their respective Project areas. These reductions are consistent with expectations established during earlier Project development and alternative screening efforts described in the Plan-EA.

Each Project site was modeled within its respective subwatershed context, and proposed-condition scenarios include all Project features located within the modeled domain. The individual sites function independently from a hydraulic perspective, such that the flood reduction performance of each Project site can be evaluated on its own or combined with other sites without reliance on interaction effects. This allows flood damages and associated economic benefits to be assessed at both the site level and in aggregate for combinations of sites, consistent with NRCS incremental and additive analysis practices. The economic and cost-benefit analysis for the 12 Action Alternatives is detailed in Section 4. The inundation from each modeled storm event for the 12 Action Alternatives are presented in Figure D-32 through Figure D-38. The acres of inundation for each modeled flood event are summarized in Table D-2. Estimated structure, content, and vehicle damages for each flood event are detailed in Section 4.2.

Table D-2. Acres of Inundation for Each Modeled Flood Event under the Action Alternatives[1]

Alternative	Site Name	2-Year Storm Event (Ac)	5-Year Storm Event (Ac)	10-Year Storm Event (Ac)	25-Year Storm Event (Ac)	50-Year Storm Event (Ac)	100-Year Storm Event (Ac)	500-Year Storm Event (Ac)
1A/1B	Southside Stream Corridor (Wilmot)	175	183	189	196	201	207	218
2A/2B	Central Drainage Area (Wilmot)	109	114	118	122	125	128	134
3A/3B	Northside Drainage Area (Wilmot)	4	4	4	4	4	4	4
4A/4B	Northwest Drainage Area (Wilmot)	39	41	42	44	45	46	49
5A/5B	City of Parkdale Project Site	43	44	46	47	48	50	52
6A/6B	Full Study Area	370	386	399	413	423	435	457
Reduction in Acres of Inundation with the Action Alternatives Compared to the No Action Alternative								
1A/1B	Southside Stream Corridor (Wilmot)	23	23	23	24	24	23	22
2A/2B	Central Drainage Area (Wilmot)	6	6	5	6	5	5	4
3A/3B	Northside Drainage Area (Wilmot)	0	0	0	0	0	0	1
4A/4B	Northwest Drainage Area (Wilmot)	2	2	2	2	2	2	1
5A/5B	City of Parkdale Project Site	14	14	13	13	14	12	12
6A/6B	Full Study Area	45	45	43	45	45	42	40

[1] Rounding: AESB values are rounded to the nearest 1 acre, consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

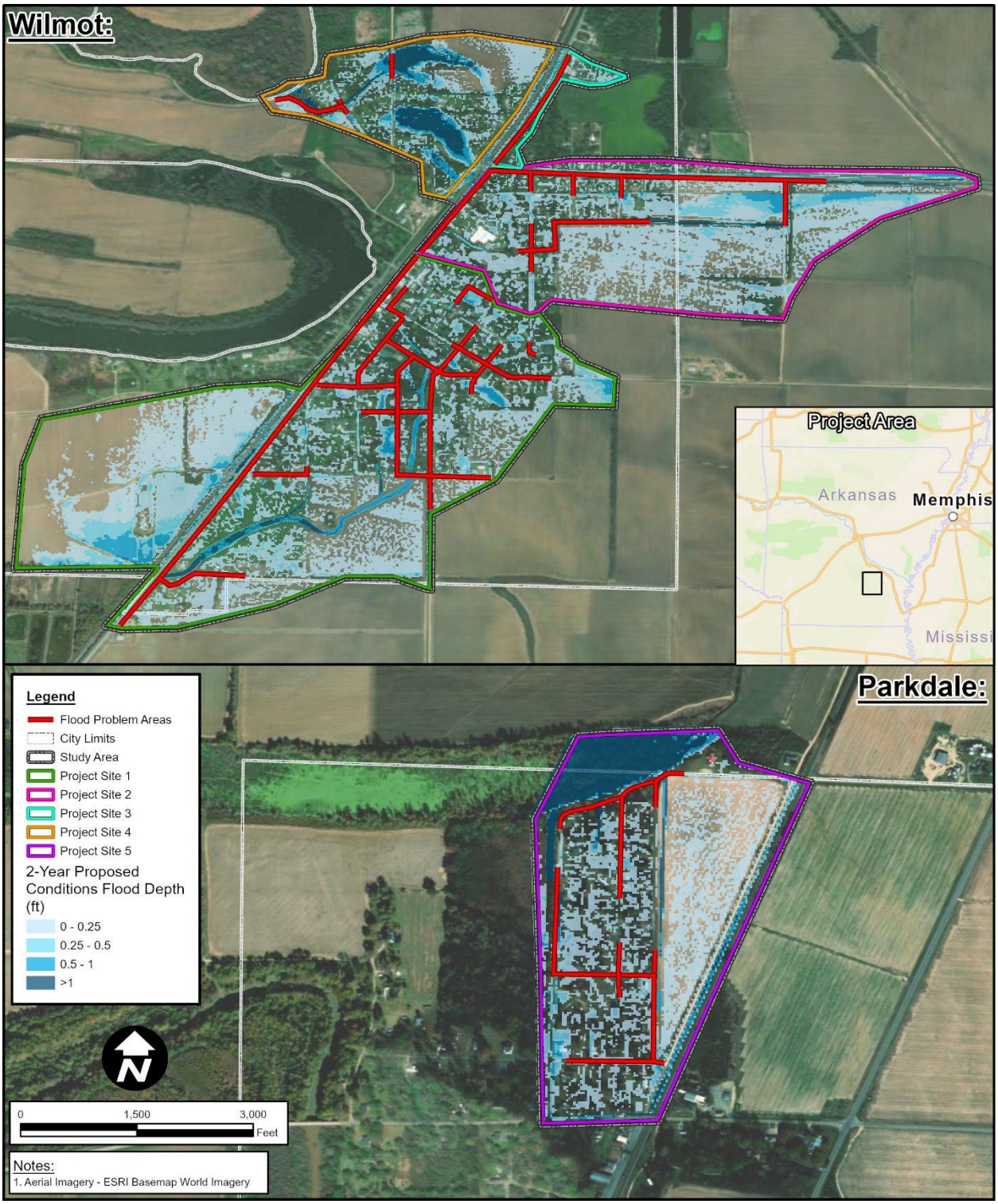


Figure D-32. HEC-RAS Modeled 2-Year Flood Event for Alternative 6A/6B.

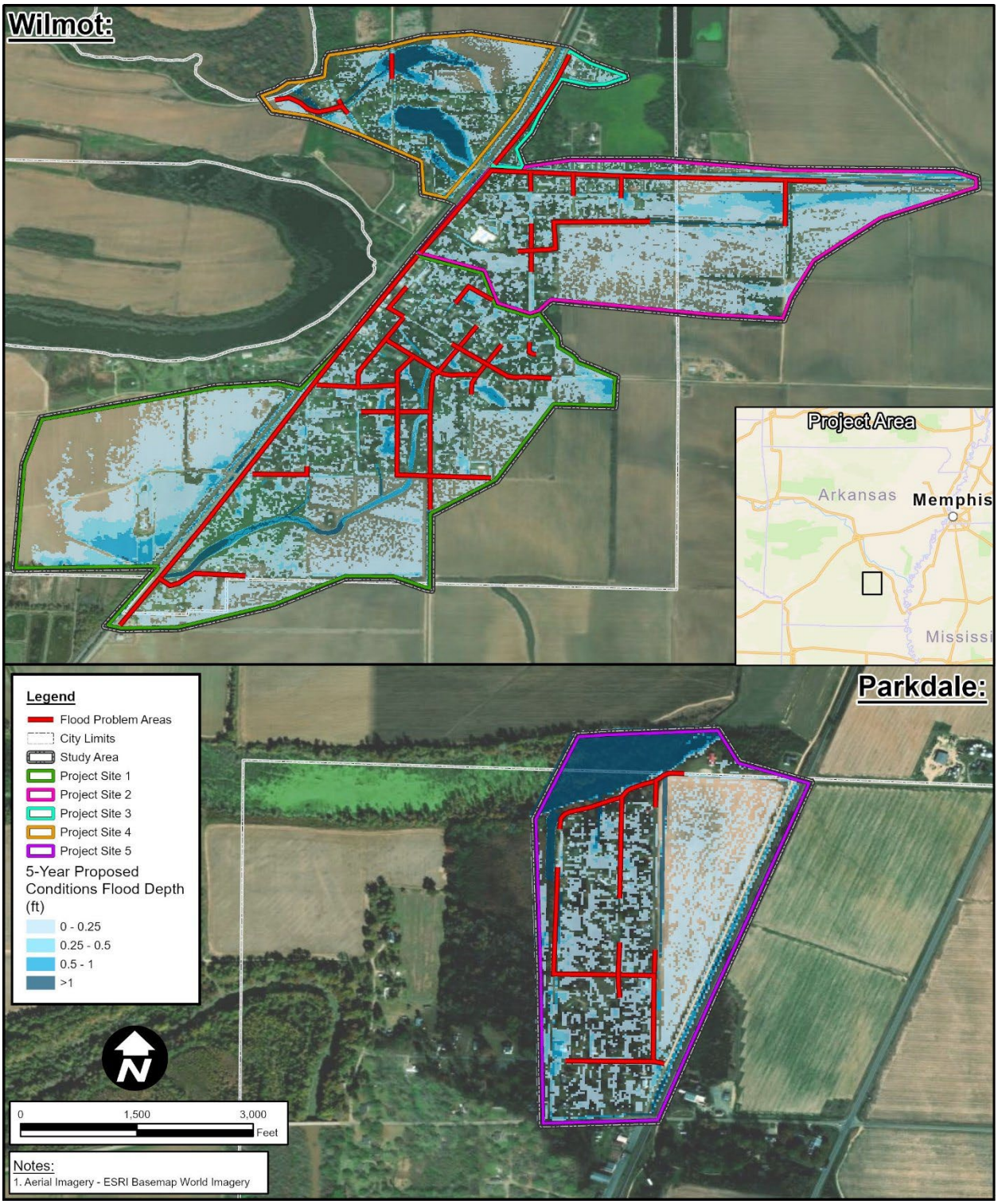


Figure D-33. HEC-RAS Modeled 5-Year Flood Event for Alternative 6A/6B.

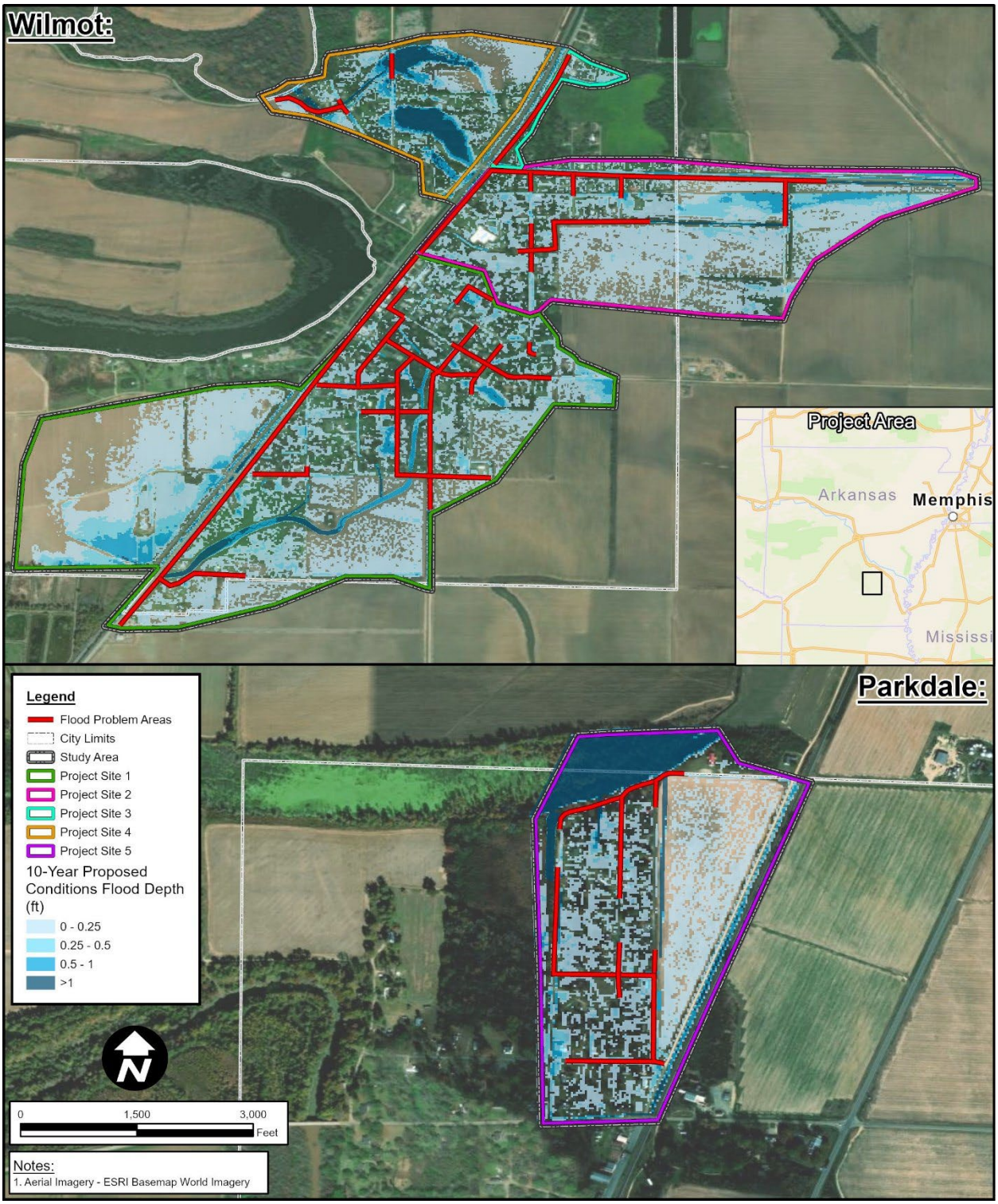


Figure D-34. HEC-RAS Modeled 10-Year Flood Event for Alternative 6A/6B.

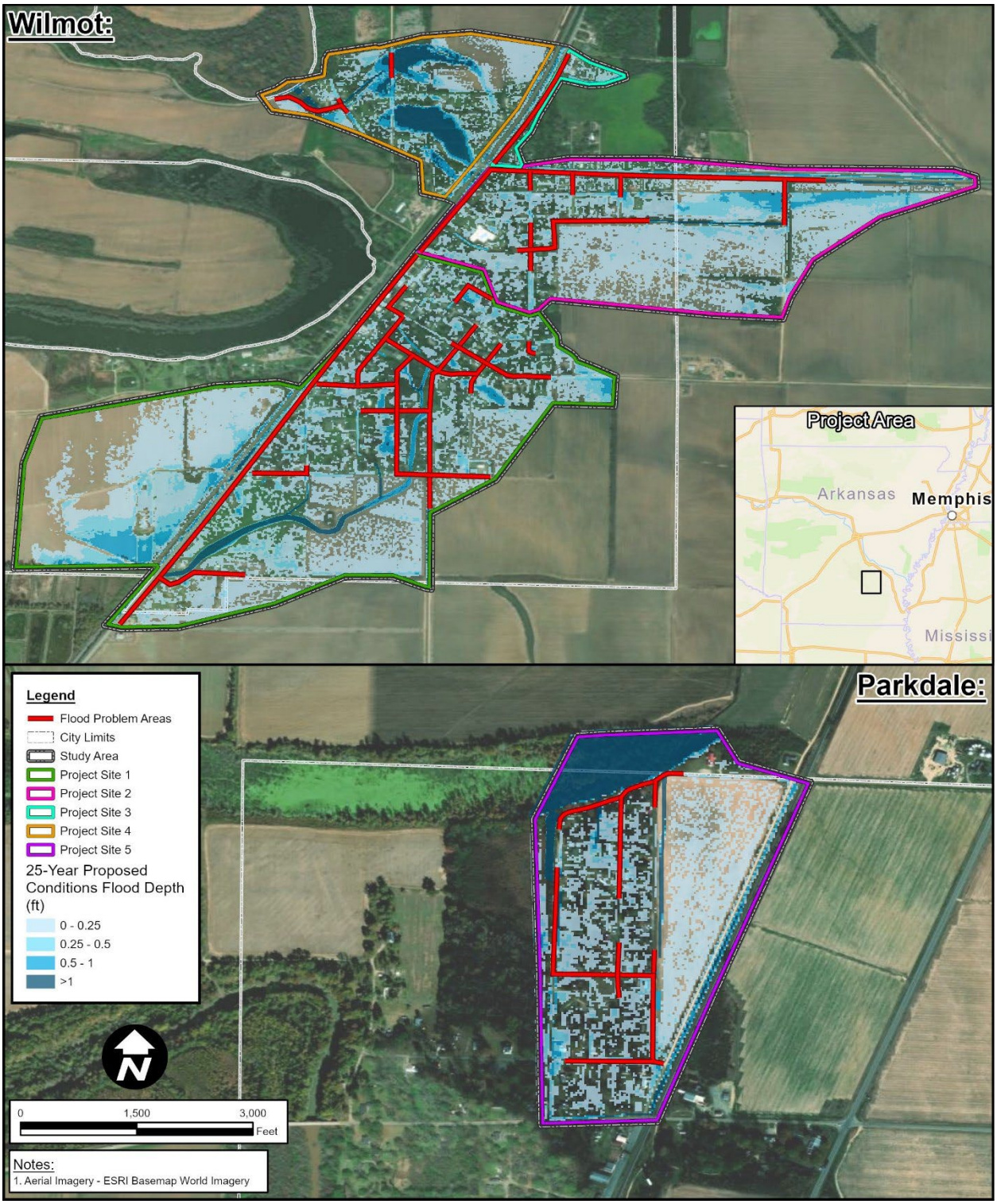


Figure D-35. HEC-RAS Modeled 25-Year Flood Event for Alternative 6A/6B.

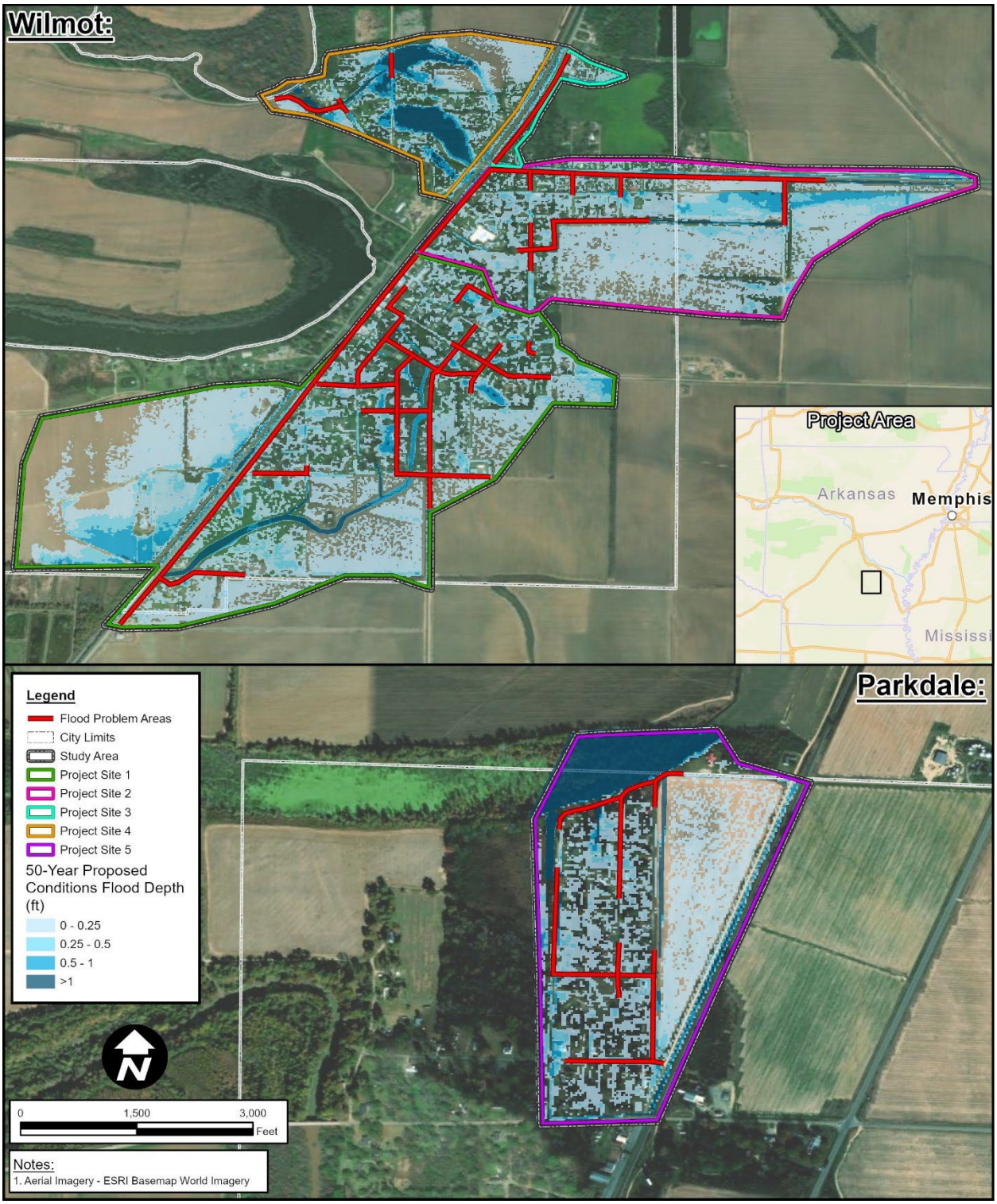


Figure D-36. HEC-RAS Modeled 50-Year Flood Event for Alternative 6A/6B.

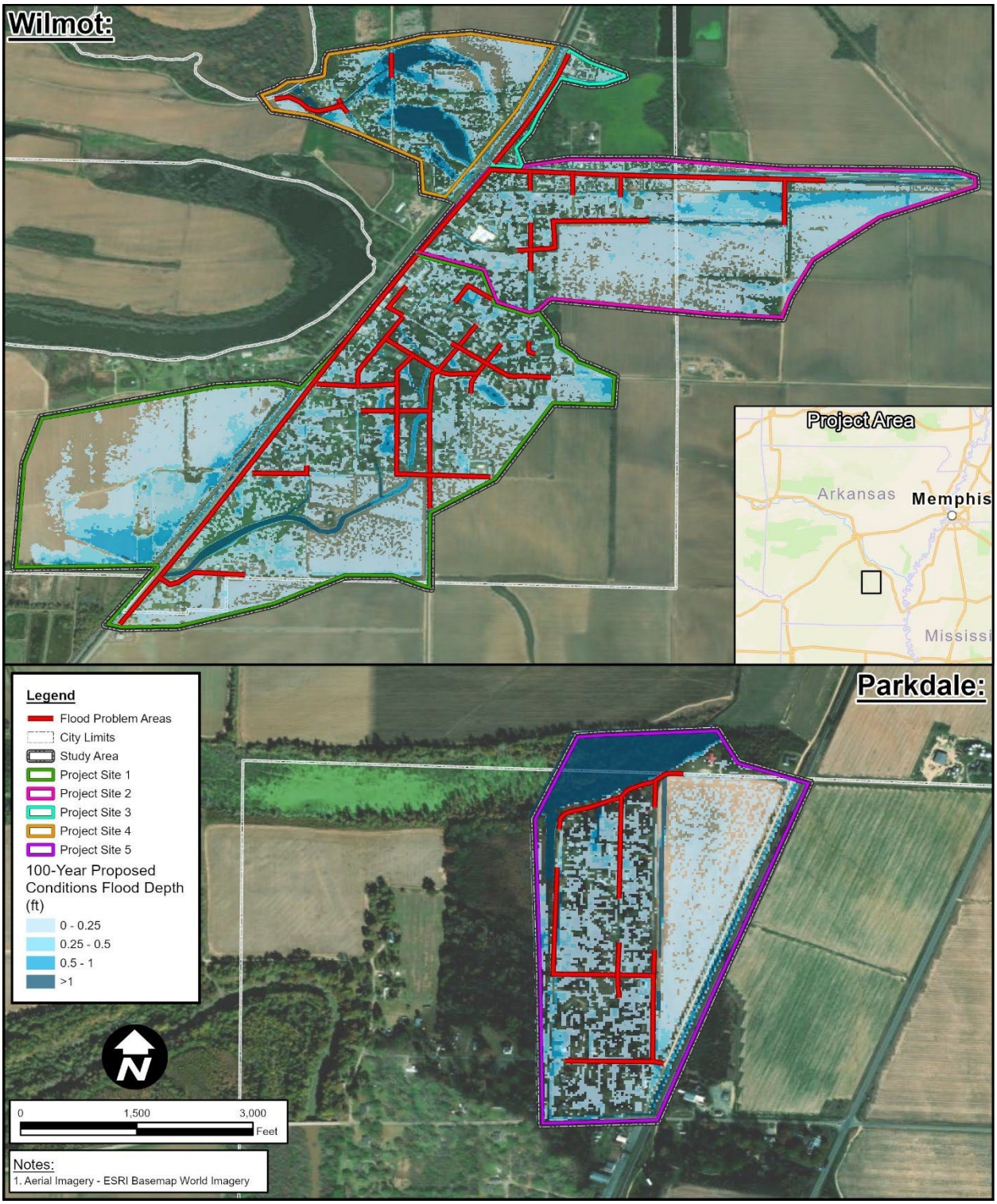


Figure D-37. HEC-RAS Modeled 100-Year Flood Event for Alternative 6A/6B.

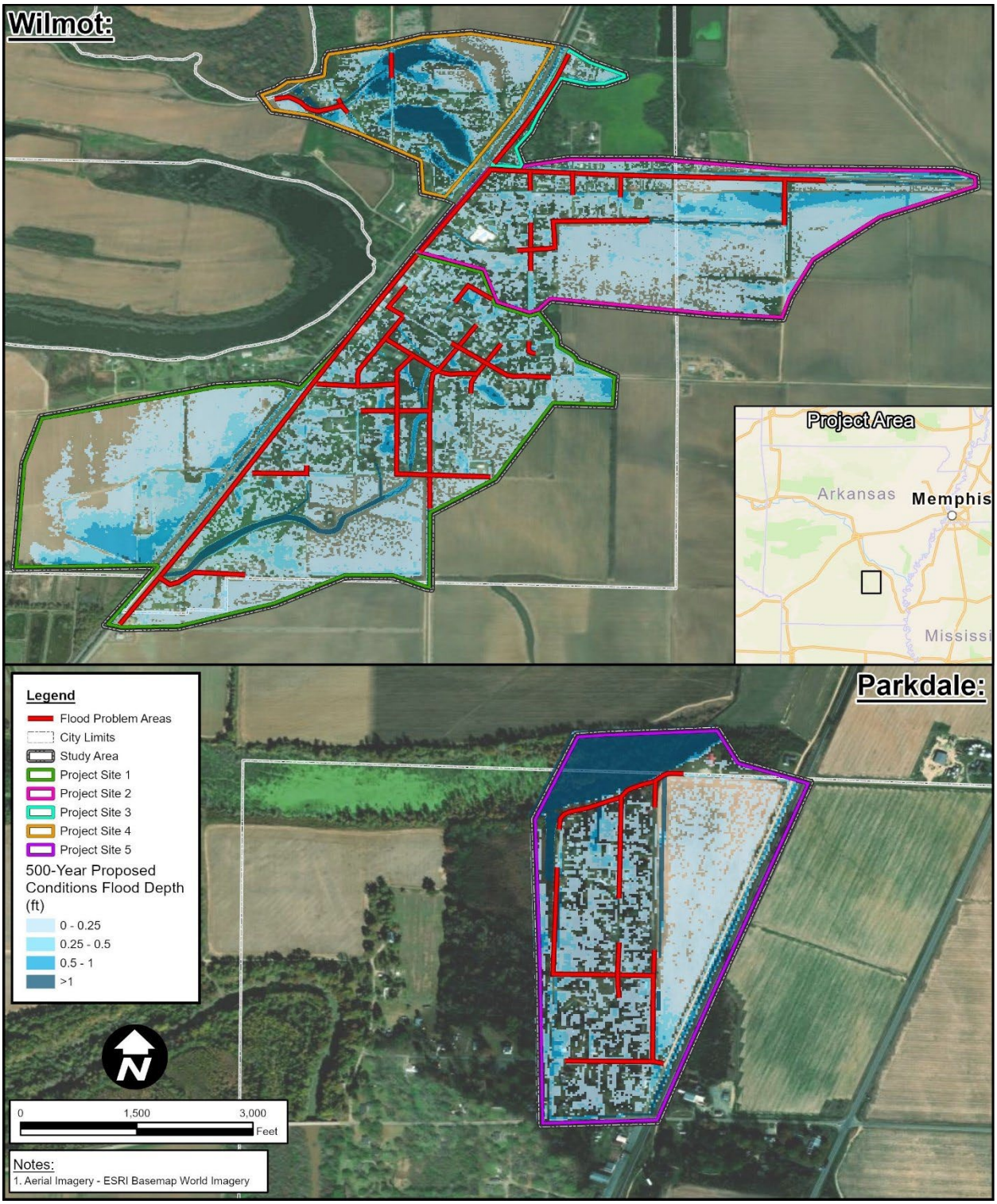


Figure D-38. HEC-RAS Modeled 500-Year Flood Event for Alternative 6A/6B.

3.2 Identification and Conceptual/Planning Level Design of Initial Array of Alternatives

3.2.1 Development and Screening of Preliminary Flood Risk Reduction Strategies and Measures

The initial phase of the formulation of alternatives involved development of a comprehensive list of flood risk reduction strategies and potential measures that are encompassed within these strategies. Potential flood risk reduction strategies considered in Alternatives development included:

1. **Reduce Runoff Volume (RRV)**: structural practices that result in reductions in stormwater runoff during rainfall events.
2. **Increase Conveyance Capacity (ICC)**: structural practices that provide additional hydraulic conveyance capacity at strategic locations within the subwatershed
3. **Increase Temporary Flood Storage (ITFS)**: structural practices that provide additional temporary flood storage within the subwatershed, typically through structural measures that would optimize available flood storage through detention or retention.
4. **Protection/Avoidance Measures (PAM)**: include structural (PAMS) and non-structural (PAMNS) practices that would reduce damages to land, structures, and infrastructure via protection or avoidance.

A set of 16 reasonable flood risk reduction measures was then developed within these four strategies for further evaluation. The 16 flood risk reduction measures included traditional drainage and flood control improvements, NBS for flood risk reduction and drainage improvements, and non-structural activities and improvements for flood risk reduction. The 16 specific measures were then screened based on: 1) practical considerations of the overarching conditions of the Study Area to filter out measures that are not appropriate for the Study Area conditions; and, 2) acceptability and preference by the Sponsoring Local Organization (SLO) and the stakeholder community. Those measures identified through this qualitative screening as a reasonable fit were carried forward for further screening. The seven measures carried forward to develop alternatives from this screening included:

1. NBS Collection Channels (RRV-2)
2. Local Stormwater Wetlands & NBS Best Management Practices (BMPs) (RRV-3/ITFS-1)[1]
3. Establish/Restore Riparian Buffer (RRV-4 /ITFS-2)[2]
4. Upgrade Collection Drainage (ICC-1)
5. Replace Conveyance Drainage with SMCs (ICC-3)
6. Upgrade Conveyance Drainage to Armored Channels (ICC-4)
7. Floodplain Buyouts/Easements (ITFS-3/ PAMNS-1)[3]

[1]Local stormwater wetlands and NBS BMPs achieve two flood risk reduction strategies: 1) reduce runoff volume (RRV), and 2) increase temporary flood storage (ITSF).
[2] Establish/Restore riparian buffer achieves two flood risk reduction strategies: 1) reduce runoff volume (RRV), and 2) increase temporary flood storage (ITSF).
[3] Property and/or structure buyouts (floodplain easements) achieves two flood risk reduction strategies: 1) increase temporary flood storage (ITSF), and 2) non-structural protection/avoidance measures (PAMNS).

These seven measures were then compared pairwise for each of the five Project Sites to determine which were mutually exclusive or unnecessarily redundant and which could be carried forward and combined and developed into alternatives for each of the Project Sites.

3.2.2 Conceptual/Planning Level Design of Initial Array of Alternatives

The final list of screened flood risk reduction and drainage improvement measures, screened and pared through the paired analysis for each site, was then used to develop the initial array of alternatives for each of the five Project Sites individually and for the entire Study Area as a single project, as follows:

- Nonstructural-Only Alternative; and,
- Two types of Action Alternatives based on the combination of the seven final measures carried forward from the screening of the preliminary measures described in Section 3.2.1 and including structural and nonstructural measures, the two types being:
  - NBS-Focused Drainage Improvements; and
  - Traditional-Focused Drainage Improvements.

3.2.3 Nonstructural-Only Alternative

Nonstructural works of improvement were considered for each site through buyout and relocation of structures and decommissioning of frequently flooded roads, with provisions for alternate property access. The NBS-Focused Drainage Improvements and Traditional-Focused Drainage Improvements Alternatives incorporated buyout and relocation of structures and decommissioning of frequently flooded roads at select locations in conjunction with structural measures to reduce flood hazards and damages. Under the Nonstructural-Only Alternative, all structures and parcels within the FEMA FIRM 100-year floodplain and/or the modeled 100-year floodplain would be acquired in order to prevent these structures from incurring future flood damages. Small city streets and associated small/large culverts in the floodplain would also be decommissioned, and alternative access roads or driveways and associated small culverts would be installed as necessary to compensate for removed access roads. The Nonstructural-Only (Floodplain Buyout) Alternatives were considered for each of the five individual Project Sites (Alternatives 1C through 5C).

3.2.4 NBS and Traditional-Focused Alternatives

This section provides the basis of design and engineering assumptions used to develop the NBS-focused and traditional-focused alternatives for the five Project Sites individually and for the entire Study Area as a single project. These alternatives were developed based on the resulting combinations of the seven measures screened and pared through the paired analysis and carried forward for each site, including both structural and nonstructural measures, and focused alternatively on (1) using NBS measures wherever possible (NBS-focused alternatives), or (2) using traditional drainage improvement measures where possible (traditional-focused alternatives). The following sections provide the basis of design for primary drainage system improvement components used in these 12 alternatives, as well as more details on the general theme/concept for the alternatives and the specific drainage system components used in each.

Waivers of several NWPM policy provisions relevant to the expanded use of PL 83-566 funding have been issued by NRCS Watershed Programs for Arkansas BIL-funded projects. The official

documentation is provided in Attachment A to this report. These clarifications were essential in developing effective flood risk reduction measures in the urbanized landscape of the Cities of Wilmot and Parkdale Study Area. The documentation confirms that the following items are eligible for 100-percent PL 83-566 funding under this Project (per NRCS Acting Branch Chief - Watershed Programs, Real Property Waiver Response, April 16, 2024; and Pavement Waiver Email, September 4, 2024, see Attachment A):

- All real property acquisitions;
- New storm and sanitary sewers in urban or built-up areas, as well as relocations modifications of existing sewer facilities;
- Relocations or changes to existing utilities (telephone, power, gas, water, sewer lines, and similar facilities) made necessary by the Works of Improvement; and
- All new roads and modification to existing public roads or private roads, railroad bridges, culverts, approaches, and other crossings, including pavement and approaches made necessary by the Works of Improvement.

Basis of Design for NBS and Traditional Drainage Improvement Components

The NBS-focused and traditional-focused alternatives are very similar in their concepts related to onsite/local stormwater detention BMPs, improvements to the stormwater collection/minor drainage system components, and the upgrade of undersized road crossing culverts and bridges. The major difference between the NBS-focused and traditional-focused alternatives is the use of SMCs in the NBS-focused alternatives versus riprap-armored flood control channels for major conveyance components of the drainage system for the five Project Sites. The overarching concept for both the NBS-focused and traditional-focused alternatives is to reduce the flooding of streets, properties, or structures outside of the Works of Improvement in all of the five Project Sites. This will be accomplished using a stormwater system that collects and conveys stormwater through and out of the city with no uncontrolled property, structure, or road flooding with minimum maintenance for a 50-year Project life.

This system-wide outcome is achieved through a tiered design approach standard to municipal stormwater and highway drainage engineering, rather than by sizing every individual drainage component to convey the 100-year event on its own. Individual components are assigned a design storm frequency appropriate to their function within the overall system, and each component is paired with a dedicated overflow or freeboard feature that is separately verified to safely convey the 100-year, 24-hour event within that component's own alignment or right-of-way so that the system as a whole, including these engineered overflow paths, prevents uncontrolled flooding of streets, yards, or structures even at the 100-year event.

Collection/minor drainage system components, including roadside ditches, side drains (i.e., small ditches that drain a lot or lots to the roadside ditches), and small cross-drain and driveway culverts, described in Section 3.2.6, are sized to a minimum design frequency appropriate to their function (10-year for ditches, 25-year for culverts), consistent with the Arkansas Department of Transportation's (ArDOT's) own drainage design criteria, which similarly differentiate design frequency by facility and component type. For ditches specifically, this is a floor rather than a ceiling: capacity is sized to whichever is larger of the 10-year event (with 0.5 ft of freeboard) or the 100-year event, so many ditch segments will in practice be built to full 100-year capacity. Each collection-system component is, in addition, paired with a dedicated overflow feature consisting of a ditch freeboard and driveway-culvert overflow swales that are separately sized to convey the 100-year, 24-hour event, so that flows exceeding a component's

minimum design capacity are contained within the ditch and driveway-swale corridor rather than flooding the street or adjoining property.

Conveyance/major drainage system components, including the SMCs and traditional flood control channels, and the road-crossing culverts and bridges built on them, described in Section 3.2.7, are sized directly to the 100-year, 24-hour event. For these systems, the 100-year event is completely contained within the channel and passes through road crossing culverts or bridges without overtopping the road or flooding any adjacent properties along the corridor.

This concept is feasible because the Project Sites are all small headwater catchments that will yield relatively small discharges within the system, which can be contained within relatively small stormwater collection and conveyance system components. It is also why the conveyance/major drainage system in the NBS-focused alternatives is not simply the nearest existing downstream waterway, but a restoration of the Project Site's own historically channelized 1st- and 2nd-order headwater streams within SMCs. These SMCs, described further below, restore natural streams within an earthen, vegetated flood control channel designed to convey the 100-year storm event. The SMCs provide engineered 100-year conveyance capacity at the point where runoff is generated rather than relying on downstream capacity that already exists (Section 3.2.7). Based on the combined hydraulic performance, flood damage reduction effectiveness, and constructability considerations, the 100-year storm event was identified as the appropriate design standard for the system's overall level of flood protection. Accordingly, the Action Alternatives were designed to provide effective and economically justified flood risk reduction up to the 100-year event. The economic and hydraulic derivation described above is what identified the 100-year event as the appropriate design standard for this Project — it was not adopted as a predetermined policy target. That outcome is nonetheless consistent with, and reinforced by, the flood-risk-management principle underlying the National Flood Insurance Program (NFIP) and Executive Order 11988, Floodplain Management. FEMA, which administers the NFIP, designates the area subject to inundation by the 1-percent-annual-chance (100-year) flood as the Special Flood Hazard Area (SFHA). Structures within the SFHA are subject to mandatory flood insurance purchase under 42 U.S.C. § 4012a where the structure secures a loan from a federally regulated or federally insured lender, and to floodplain-development regulation under the NFIP's minimum floodplain-management standards. Executive Order 11988 separately directs Federal agencies to avoid, to the extent practicable, direct or indirect support of floodplain development in connection with actions having Federal involvement, such as this NRCS-assisted watershed project. By reducing the 100-year floodplain's footprint away from existing structures, roads, and properties — through the combination of the conveyance/major drainage system improvements described in Section 3.2.7 and the property buyout and drainage easement measures described in Section 3.2.6 — the Project moves the affected structures, roads, and properties out of continued exposure to, and regulatory encumbrance by, the mapped SFHA. This is the same outcome EO 11988 and the NFIP's floodplain-management framework are intended to promote. The Action Alternatives were then evaluated for performance across a range of flood frequencies, including the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year events, as described in Section 3.1; this frequency-performance data was used to calculate Expected Annual Damages (EAD) (Section 4.2.2). The incremental analysis used to identify the Maximum Net Monetized Benefits (MNMB) Alternative based on stepwise evaluation of Net Monetized Benefits (NMB) across practicable site-alternative combinations is presented in Sections 4.5 and 4.6. For final analysis, the final array of Action Alternatives (Section 3.3) were then evaluated for economic efficiency reflected in the EAD, Benefit–Cost Ratio (BCR), and NMB evaluations presented in Section 4.5.

3.2.5 Themes/Concepts for NBS and Traditional-Focused Alternatives

The following section summarizes the major differences between the themes/concepts and flood risk reduction measures for the six NBS-focused and six traditional-focused alternatives evaluated for the initial array of Alternatives.

NBS-Focused Drainage Improvement Alternatives

The theme/concept of this Alternative is to utilize traditional, cost-efficient urban drainage improvement measures and, wherever possible and appropriate, NBS Alternative stormwater management and flood risk reduction measures, in conjunction with select easement/property buyouts (non-structural) to meet the Purpose of the Project over a 50-year Project life. The primary design objective for the six NBS-focused alternatives is to:

1. Use local and onsite NBS stormwater detention/retention/infiltration or wetlands at select locations to reduce overall downstream discharge, lower and flatten the flow hydrograph through the system resulting from precipitation events and provide water quality treatment.
2. “Let streams be streams and ditches be ditches”. That is:
    a. Reconstruct, upgrade, and optimize the drainage function of the existing, collection/minor drainage system components (i.e., roadside and small drainage ditches and associated culverts), using NBS linear collection system measures (e.g., bio-swales) where possible and appropriate; and
    b. Restore conveyance/major drainage system components that are degraded or are former natural streams that are degraded or have been channelized and rectified in the past to roadside or drainage ditches or buried stormwater conveyances to naturally functioning stream or vegetated swale and riparian corridor restorations inside of a stable, vegetated flood control channel, referred to as a Stream Management Corridor (SMC).
    c. Acquire additional drainage easements in locations where the LOD of the drainage improvements lie outside of the existing drainage easements and buyout of select, frequently flooded properties where structures are located within the LOD of the drainage improvements as necessary to provide sufficient right-of-way (ROW) for the new drainage improvements, increase temporary floodplain storage of stormwater on appropriate lands, and eliminate the flood risk to the associated public or private property/structures.

The NBS-focused alternatives are expected to optimize the resiliency, ecological, and environmental, recreational, cultural, and economic benefits/co-benefits to the community that are intrinsic to or realized in association with NBS measures.

Traditional-Focused Drainage Improvement Alternatives

The theme/concept of the five traditional-focused alternatives are the same as the NBS-focused alternatives with one major exception; whereas the NBS-focused alternatives will use a NBS design in the form of SMCs for the structural stormwater conveyance/major drainage channels, only traditional, riprap-lined, trapezoidal flood control channels will be considered and used for conveyance/major drainage channels in the traditional-focused alternatives.

The primary design objective for the five traditional-focused alternatives is to:

1. Use local and onsite NBS stormwater detention/retention/infiltration at select locations to both reduce overall downstream discharge and lower and flatten the flow hydrograph through the system resulting from precipitation events.
2. Reconstruct, upgrade, and optimize the drainage function of the existing, collection/minor drainage system components (i.e., roadside and small drainage ditches and associated culverts), using NBS linear collection system measures (e.g., bio-swales) where possible and appropriate.
3. Reconstruct, upgrade, and optimize the drainage function of the existing conveyance/major drainage system components using only traditional-focused drainage measures (i.e. riprap-lined, trapezoidal flood control channels).
4. Acquire additional drainage easements in locations where the LOD of the drainage improvements lie outside of the existing drainage easements and buyout of select, frequently flooded properties where structures are located within the LOD of the drainage improvements as necessary to provide sufficient right-of-way ROW for the new drainage improvements, increase temporary floodplain storage of stormwater on appropriate lands, and eliminate the flood risk to the associated public or private property/structures.

It is expected that the traditional-focused alternatives will provide a small increase in resiliency, ecological, and environmental, recreational, cultural, and economic benefits to the community through the select use of NBS stormwater detention/retention/infiltration and wetlands and any NBS linear collection (minor) system measures.

3.2.6 Drainage Improvement Measures Used in NBS and Traditional-Focused Alternatives

The NBS-focused and traditional-focused alternatives utilize several common components, as described in Section 3.2.1 and detailed in this section.

NBS Onsite/Local Stormwater Detention/Infiltration BMPs

Provide onsite/local NBS stormwater temporary stormwater storage, infiltration and/or evapotranspiration, and water quality treatment throughout the subwatershed via:

- Installation of stormwater BMPs that provide both stormwater retention or detention as well as water quality benefits, such as Rain Gardens/Bioretention Cells (generally for catchments less than 5 acres [ac]) or stormwater wetlands (generally for catchments between 5–25 ac and can be used for larger catchments) at strategic locations (it should be noted that no stormwater wetlands (between 5-25 acres) are proposed for this Project); and
- Upgrading existing inadequate or damaged onsite dry detention basins to NBS systems that meet current stormwater storage and water quality treatment standards.

The onsite/local NBS stormwater detention/retention BMPs proposed for this Project are small-catchment features that do not meet the height, storage capacity, or hazard classification thresholds defining a dam under NRCS TR-60 (Earth Dams and Reservoirs); accordingly, TR-60's design criteria and dams-in-series considerations do not apply to this Project.

Improvements to Stormwater Collection/Minor Drainage System

For undersized, discontinuous, obstructed, or damaged stormwater collection/minor drainage systems (i.e., roadside [not including converted streams] and small drainage ditches)) upgrade the system to current acceptable standards, including:

- Improve conveyance capacity of ditches to a minimum of the 10-year, 24-hour storm event or larger, where space permits with a minimum freeboard height of 0.5 feet (ft) or capacity of the 100-year event (whichever is larger) and a maximum flow velocity of 5 ft per second for grass lined ditches (preferred).
- Where feasible, replace roadside ditches with mowable grassed ditches, or, where space allows, with grassed swales (with maximum slope of 2.5:1 horizontal to vertical [H:V] and a preferred slope of and a 4:1), bio-retention swales, or other linear conveyance NBS to promote flow velocity reduction, water quality treatment, and stormwater infiltration.
- Replace undersized, discontinuous, obstructed, or damaged culverts with 24-inch diameter (minimum) or larger culverts designed for the 25-year, 24-hour event.
- Install typical ArDOT end treatments on all new culverts to prevent damage, flow restriction, and road hazard.
- Install low-profile spillway swales across the top of buried culverts in roadside ditches as necessary to convey the 100-year, 24-hour event without flooding the road/street or adjacent property beyond the ditch alignment.

All culvert replacements and upgrades described above will be designed in accordance with Conservation Practice Standard (CPS) Stream Crossing (Code 578) at minimum. A geologic investigation (GI) will be conducted at each culvert site where required under CPS 578, during the design phase, prior to final culvert design, consistent with 210-NEM-531.1(1), 210-NEM-531.2C, and 210-NEM-531.2D(1). No geologic investigation has been conducted at this planning stage.

Upgrade of Undersized Road Crossing Culverts and Bridges on Conveyance/Major Drainage System Components

Replace undersized, obstructed, or damaged road crossing culverts on conveyance/major drainage system with:

- A single bankfull channel-spanning, natural-bottom culvert (to convey stream flows) and geomorphic floodplain culverts; or
- A bridge whose opening spans the stream and geomorphic floodplain (it should be noted that no bridge replacements are proposed for this Project).

Road crossing culverts on conveyance/major drainage systems on County, State, or Federal highways will be designed in accordance with ArDOT standards. All culvert replacements and upgrades described above will be designed in accordance with Conservation Practice Standard (CPS) Stream Crossing (Code 578) at minimum. A geologic investigation (GI) will be conducted at each culvert site where required under CPS 578, during the design phase, prior to final culvert design, consistent with 210-NEM-531.1(1), 210-NEM-531.2C, and 210-NEM-531.2D(1). No geologic investigation has been conducted at this planning stage.

As described in Section 3.2.4, the roadside ditches, side drains, and cross-drain/driveway culverts discussed above are designed to more frequent, smaller storm-event standards (10- to

25-year) than the conveyance/major drainage system components discussed in Section 3.2.7 (SMCs, traditional flood control channels, and their road crossings), which are designed to the 100-year, 24-hour event. This tiered approach is consistent with ArDOT's own drainage design criteria, which similarly differentiate design standards by component type. Rather than relying on street or yard flooding as the means of handling storms beyond a minor component's design capacity, the ditch freeboard and spillway swale requirements described above are specifically sized to convey the 100-year, 24-hour event within the ditch and driveway-swale alignment itself, consistent with the Project's overall no-uncontrolled-flooding design standard described in Section 3.2.4. This containment is reflected in the HEC-RAS hydraulic modeling underlying the flood inundation results presented in Table D-2.

Property Buyouts and Drainage Easement/ROW Purchases

Acquire additional drainage easements in locations where the LOD of the drainage improvements lie outside of the existing drainage easements and buyout of select, frequently flooded properties where structures are located within the LOD of the drainage improvements as necessary to provide sufficient right-of-way ROW for the new drainage improvements, increase temporary floodplain storage of stormwater on appropriate lands, and eliminate the flood risk to the associated public or private property/structures.

The LODs of the NBS-focused and traditional-focused alternatives are assumed to be approximately the same for each Project Site. As, such, the property buyouts and drainage easements/ROW purchases will be identical for the NBS-focused and traditional-focused alternatives. It is assumed that those properties whose structures lie within the LOD will have to be bought out completely. That is, the entire parcel and structure will need to be purchased from the owner at a fair market value for the given real estate market and relocation assistance provided. Alternatively, where the LOD is on new lands not included in existing, current drainage system easements, but the structures on the properties will not be impacted, it is assumed that new drainage easements/ROW limited to the LOD and any necessary maintenance access will be sufficient to satisfy the landowner and install and maintain the improvements.

3.2.7 NBS-Focused Versus Traditional-Focused Drainage Improvement Measures for Conveyance/Major Drainage System Components

Measures to improve the drainage efficacy of conveyance/major drainage system components differ significantly between the NBS-focused and Traditional-focused alternatives. However, in both, the design concept is the same: namely to size the channels to contain and convey the 100-year, 24-hour event within the channel, thereby greatly reducing the 100-year floodplain beyond the top of bank of the channel. Furthermore, these channels will be designed to be stable and resilient for the 50-year life of the Project. In the accomplishment of these goals, however, the NBS-focused and traditional-focused alternatives utilize markedly different approaches.

NBS-Focused Improvements to Stormwater Conveyance/Major Drainage System

In the NBS-focused approach, a Rosgen Priority 2 (Rosgen, 1997) fully restored stream (i.e., dimension, pattern, and profile) with a nominal, fully functioning geomorphic floodplain, is installed in the bottom of an excavated, earthen flood control channel sized to convey the 100-year, 24-hour event. This NBS-focused flood control channel is referred to as a SMC. Additional NBS components include a riparian buffer and stormwater quality wetlands on the nested

geomorphic floodplain. Figure D-39 below shows a cross-section of a typical SMC and its primary features, where the geomorphic floodplain is referred to as the floodplain terrace.

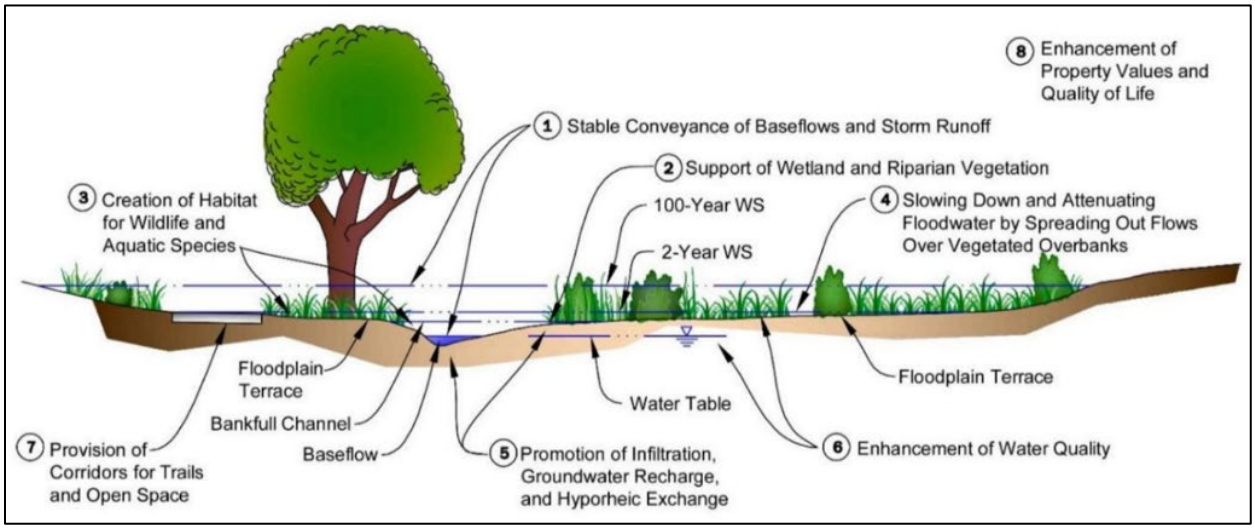


Figure D-39. Cross-Section of a typical SMC and primary features.

The restored stream within the bottom of the SMC will be designed using natural channel design (NCD) methods to convey the channel-forming discharge, also referred to as the bankfull discharge, which typically corresponds to just below a 1.5-year recurrence interval storm event (based on annual peak flow). The active geomorphic floodplain, identified as the floodplain terrace in Figure D-39 will provide floodplain relief to the stream at bankfull discharge and will be designed with sufficient width to provide flood energy dissipation needed to maintain channel stability, following standard NCD empirical relationships.

The larger flood control channel dimensions will be based on the requirements for 100-year conveyance capacity and the necessary geomorphic floodplain terrace width. In addition, they will be designed to limit the maximum shear stress on the geomorphic floodplain terrace to 3 pounds per square foot (psf) to preserve stability. The use of natural analog threshold stream channels (i.e., immobile grade control structures) will provide enhanced channel stability under conditions of low sediment supply stormwater flows, as well as under potential changes in drainage area hydrologic loading associated with future precipitation variability and drainage area development.

Headwater reaches of SMCs will include vegetated swales within the flood control channel until sufficient drainage area accumulates to support the formation of a single-thread stream channel and associated geomorphic floodplain. Restoration of the SMCs to replace existing modified reaches (such as roadside ditches) will involve selective decommissioning and removal of certain local street sections, along with the provision of alternative access to residences whose driveways currently connect to the affected roadways.

The installation of SMCs would include replacement of undersized, obstructed, or damaged road crossing culverts as necessary to convey the 100-year, 24-hour event without flooding the road/street or adjacent property beyond the channel and geomorphic floodplain terrace alignment with:

- A single bankfull channel-spanning, natural-bottom culvert (to convey stream flows) and geomorphic floodplain culverts; or
- A bridge whose opening spans the stream and geomorphic floodplain.

Road crossing culverts on conveyance/major drainage systems on County, State, or Federal highways will be designed in accordance with ArDOT standards.

Traditional Improvements to Stormwater Conveyance/Major Drainage System

In the traditional-focused drainage improvement approach, conveyance/major drainage channels will be over-excavated as a trapezoidal flood control channel sized sufficiently to convey the 100-year, 24-hour event. Long-term stability and resiliency of such incised channels is only possible through complete armoring of the channel. The most cost-efficient channel armoring method that is unlikely to degrade before the end of the 50-year life of the Project is armoring the entire channel cross-section with flexible riprap sized sufficiently large to resist movement and erosion at any point along the channel profile under maximum shear-stress conditions. This is referred to as threshold channel design, where movement of the channel boundary is minimal or nonexistent for stresses at or below the design flow condition (i.e., maximum shear stress). The allowable shear approach (sometimes referred to as the tractive stress approach), as described in the NRCS's National Engineering Handbook (2007), was used to design the threshold cobble/boulder riprap lining in the traditional-focused alternatives. The installation of these adequately-sized, trapezoidal, riprap-lined flood control channels will also include the select decommissioning and removal of some sections of local streets and the provision of alternative access to the small number of homes whose access driveways currently feed onto the decommissioned road sections.

The installation of armored, trapezoidal 100-year flood control channels would include replacement of undersized, obstructed, or damaged road crossing culverts as necessary to convey the 100-year, 24-hour event without flooding the road/street or adjacent property beyond the channel alignment with:

- A single-barrel culvert; or
- A bridge whose opening spans the channel bottom.

Road crossing culverts on conveyance/major drainage systems on County, State, or Federal highways will be designed in accordance with ArDOT standards.

3.2.8 NBS-Focused and Traditional-Focused Conceptual/Planning Level (10%) Design Plans

The layout for the NBS-focused and traditional-focused alternatives are generally the same, the only difference being the use of SMCs in the NBS-focused alternatives and traditional, riprap-lined flood control channels in the traditional-focused alternatives for the conveyance/major drainage components downstream of the vegetated swales. Further because the traditional-focused drainage improvements for conveyance channels (i.e., trapezoidal, riprap-lined flood control channels) will be designed to convey the 100-year storm event, the same as the NBS-focused SMC flood control channel component, it is assumed that the NBS-focused and traditional-focused alternatives will have the same approximate LOD to implement the drainage improvements

Based on these conditions, six NBS-focused alternatives were developed: individual NBS-focused alternatives for each of the five Project Sites (Alternatives 1A through 5A) and a combined NBS-focused alternative encompassing all five Project Sites (Alternative 6A). In addition, six traditional-focused alternatives were developed, consisting of individual traditional-

focused alternatives for each of the five Project Sites (Alternatives 1B through 5B) and a combined traditional-focused alternative for the Study Area (Alternative 6B).

Figure D-40 through Figure D-45 illustrate the Works of Improvement associated with the combined NBS-focused alternative for the Study Area (Alternative 6A) and the individual NBS-focused alternatives for each Project Site (Alternatives 1A through 5A). Figure D-46 through Figure D-51 depict the Works of Improvement for the combined traditional-focused alternative (Alternative 6B) and the individual traditional-focused alternatives for each Project Site (1B-5B).

All Works of Improvement included under the proposed Action Alternatives will be constructed/implemented within the Cities of Wilmot and Parkdale city limits, existing Arkansas Department of Transportation (ArDOT) right-of-way on state and federal highways, or other lands owned by the Cities of Wilmot or Parkdale.

Attachment B includes the conceptual/planning-level (10 percent) Design Plan Set for the combined NBS-focused alternative for all of the Study Area (all five Project Sites) Alternative 6A. No plan sets were generated for the traditional-focused alternatives because they have the same LOD as the NBS-focused alternatives and only differ only in the use of simple trapezoidal, riprap lined flood control channels instead of SMCs, as can be seen in a comparisons between

Figure D-40 through Figure D-45 (NBS-focused) and Figure D-46 through Figure D-51 (traditional-focused).

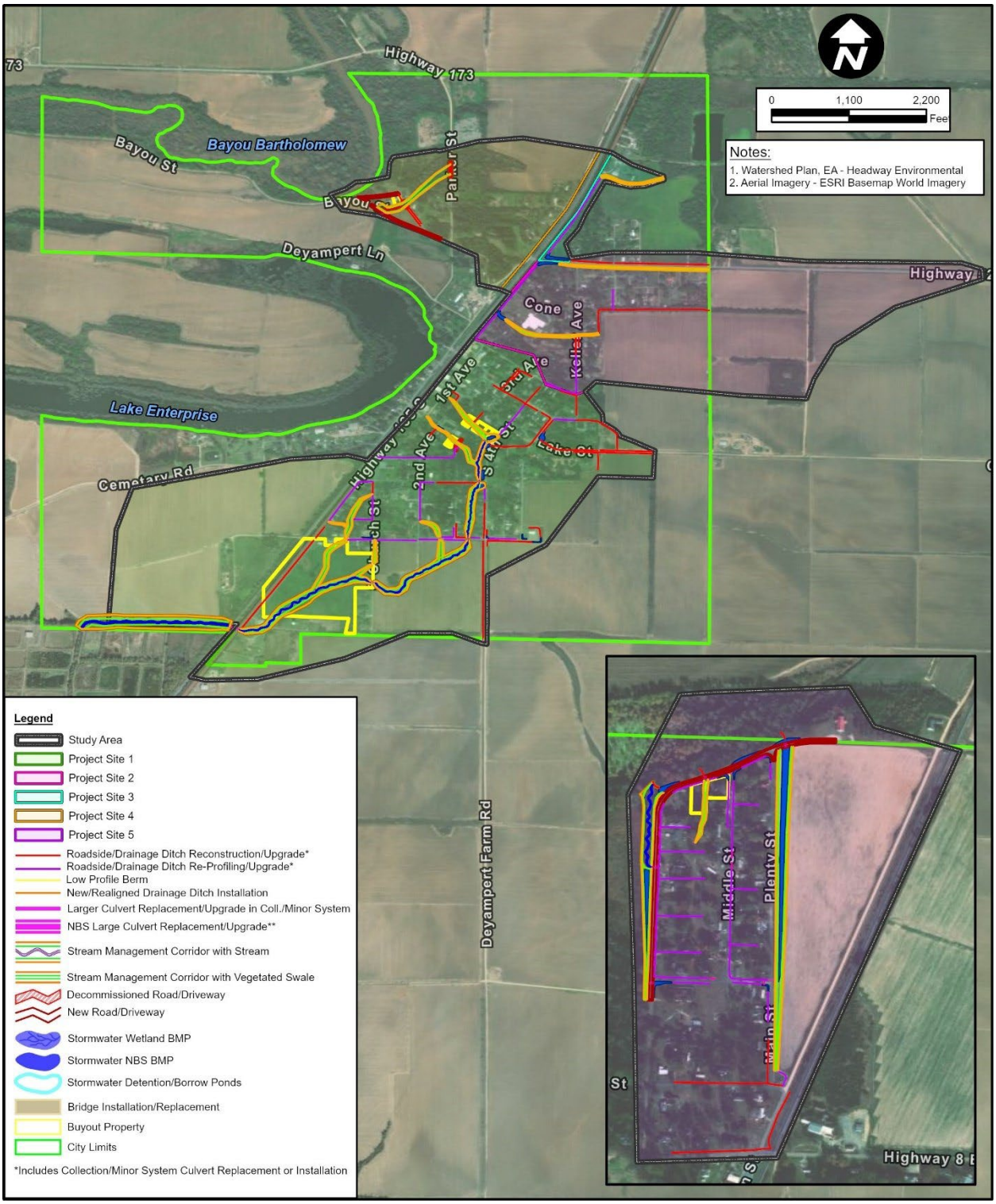


Figure D-40. Combined Study Area Works of Improvement: NBS-Focused Drainage Improvements Alternative (Alternative 6A).

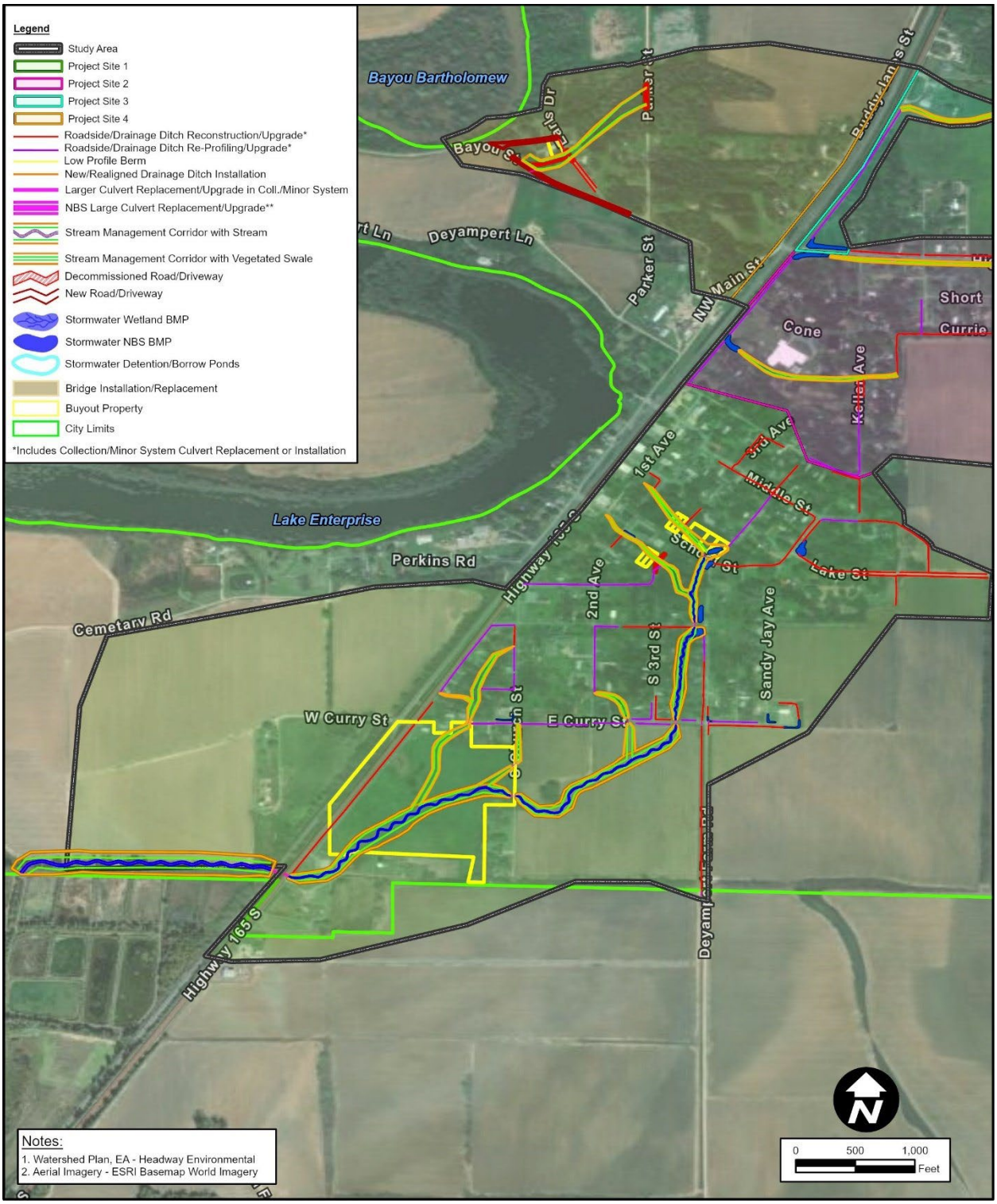


Figure D-41. Project Site 1 Works of Improvement: NBS-Focused Drainage Improvements Alternative (Alternative 1A).

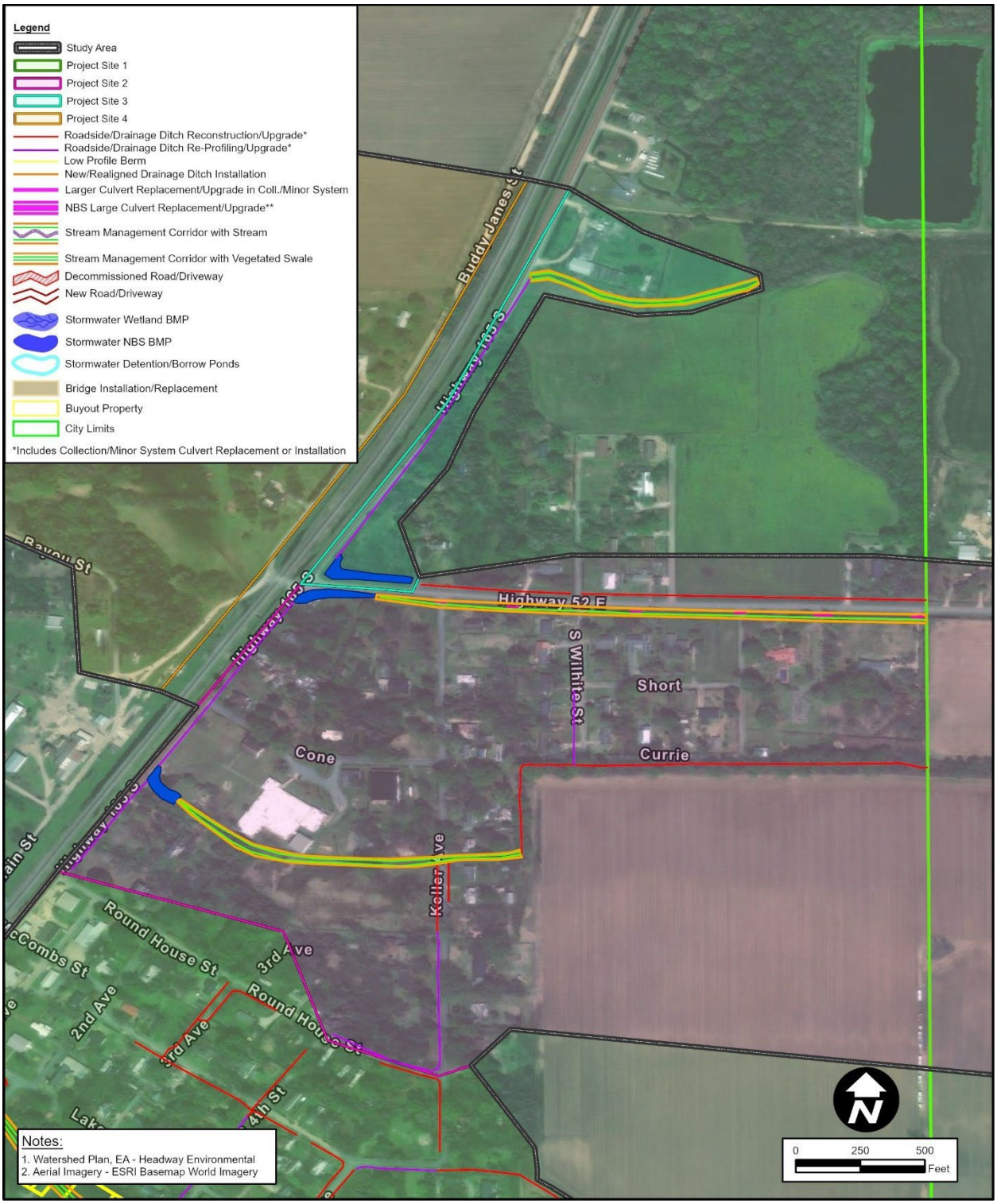


Figure D-42. Project Site 2 Works of Improvement: NBS-Focused Drainage Improvements Alternative (Alternative 2A).

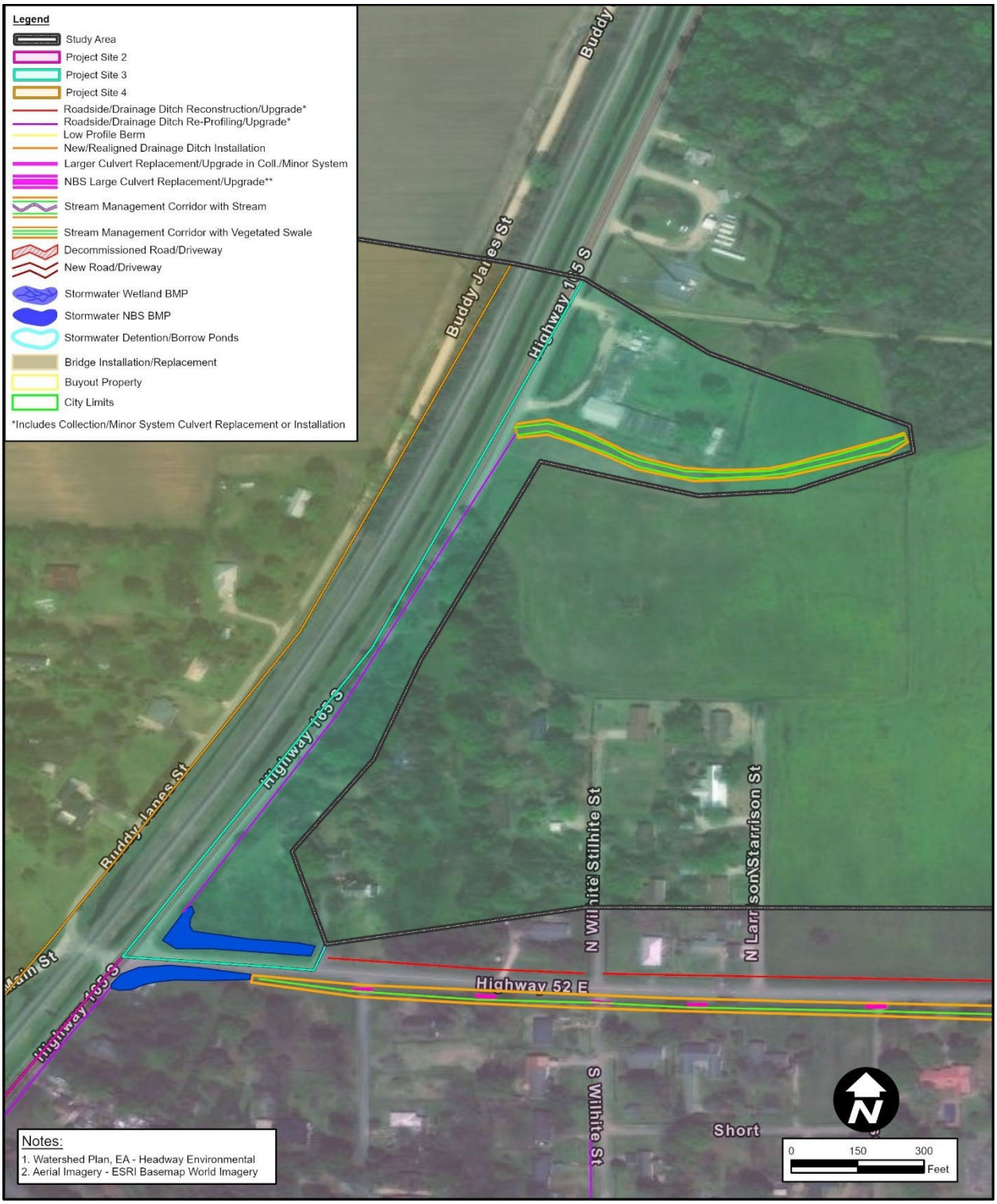


Figure D-43. Project Site 3 Works of Improvement: NBS-Focused Drainage Improvements Alternative (Alternative 3A)

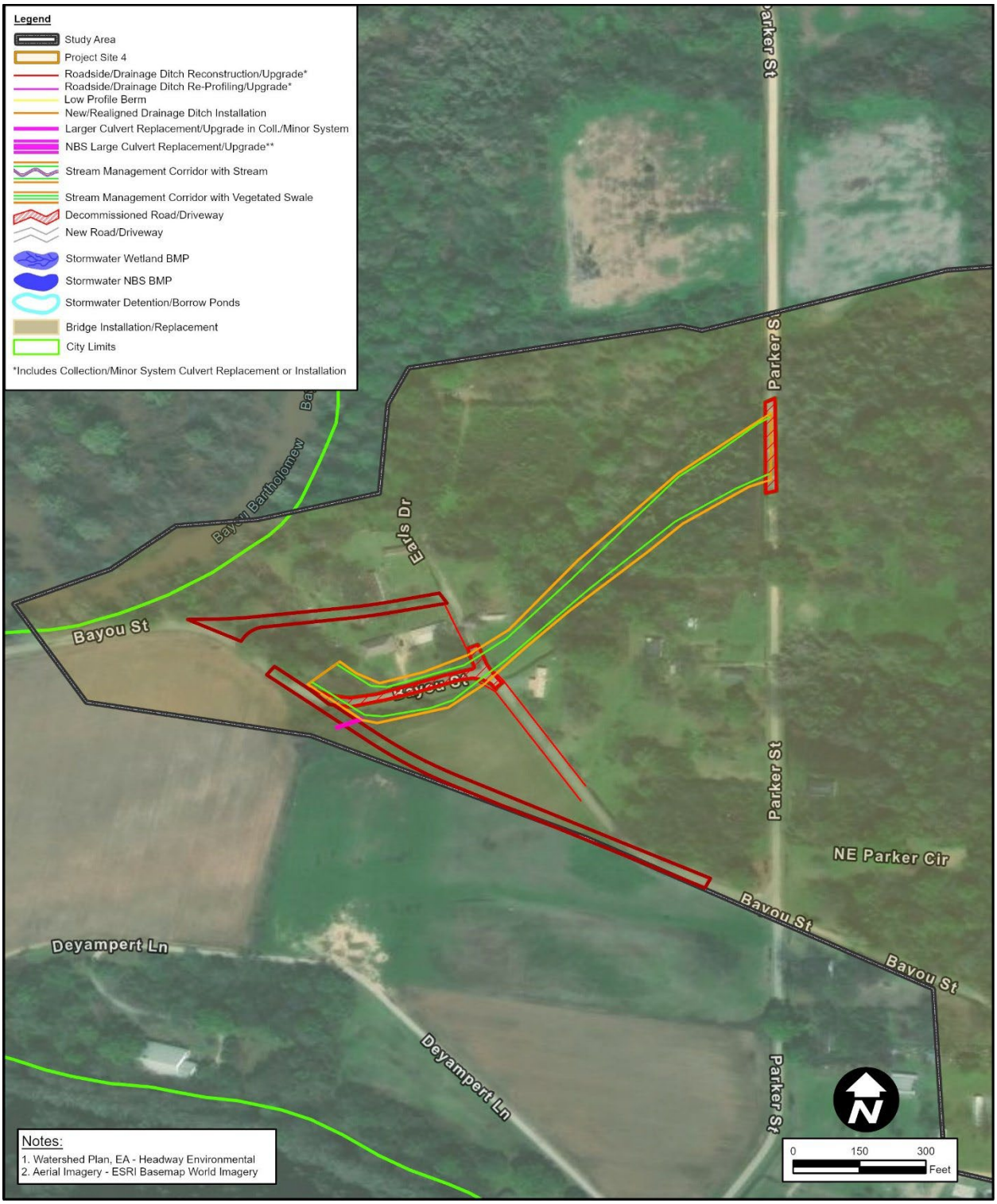


Figure D-44. Project Site 4 Works of Improvement: NBS-Focused Drainage Improvements Alternative (Alternative 4A).

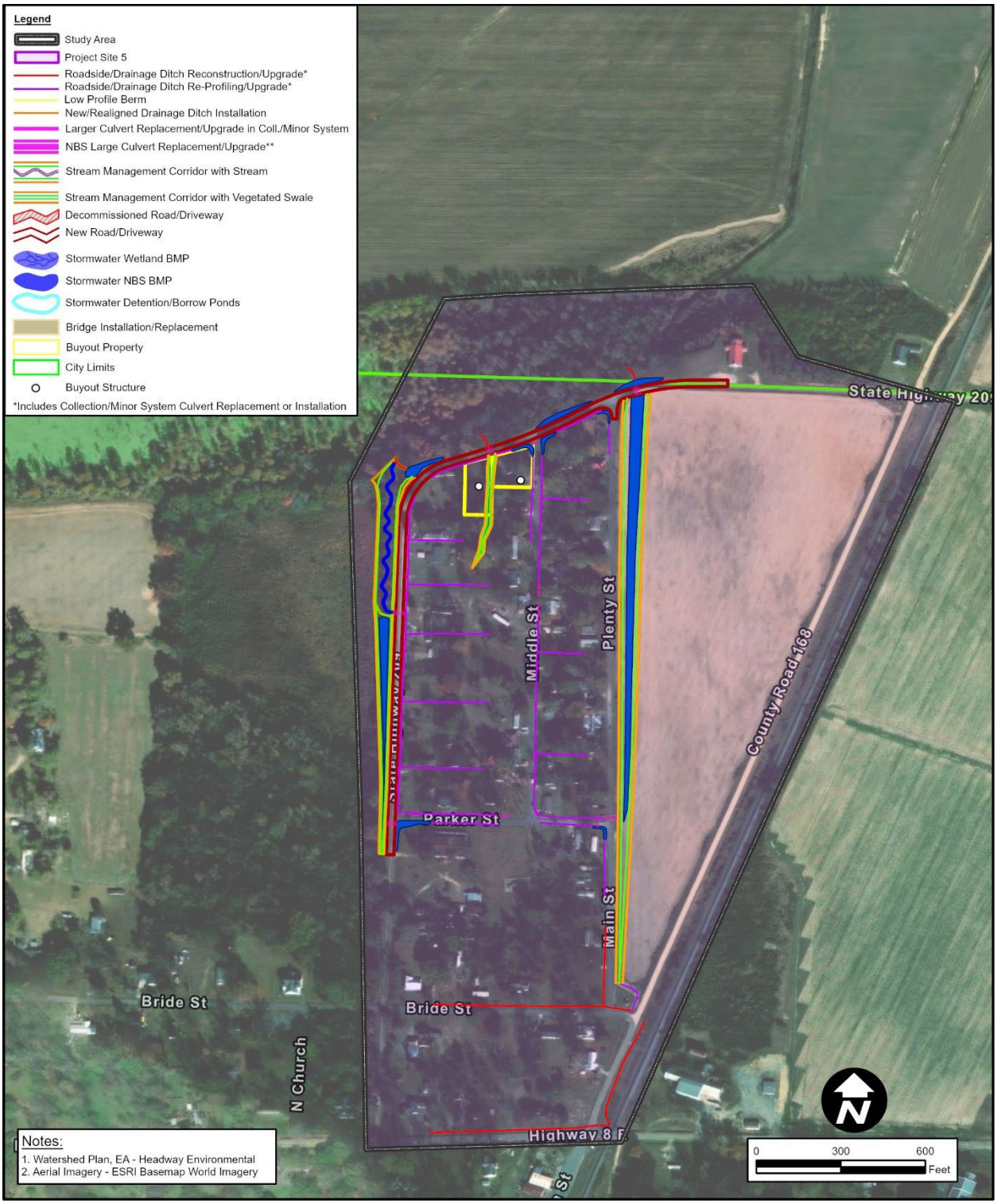


Figure D-45. Project Site 5 Works of Improvement: NBS-Focused Drainage Improvements Alternative (Alternative 5A).

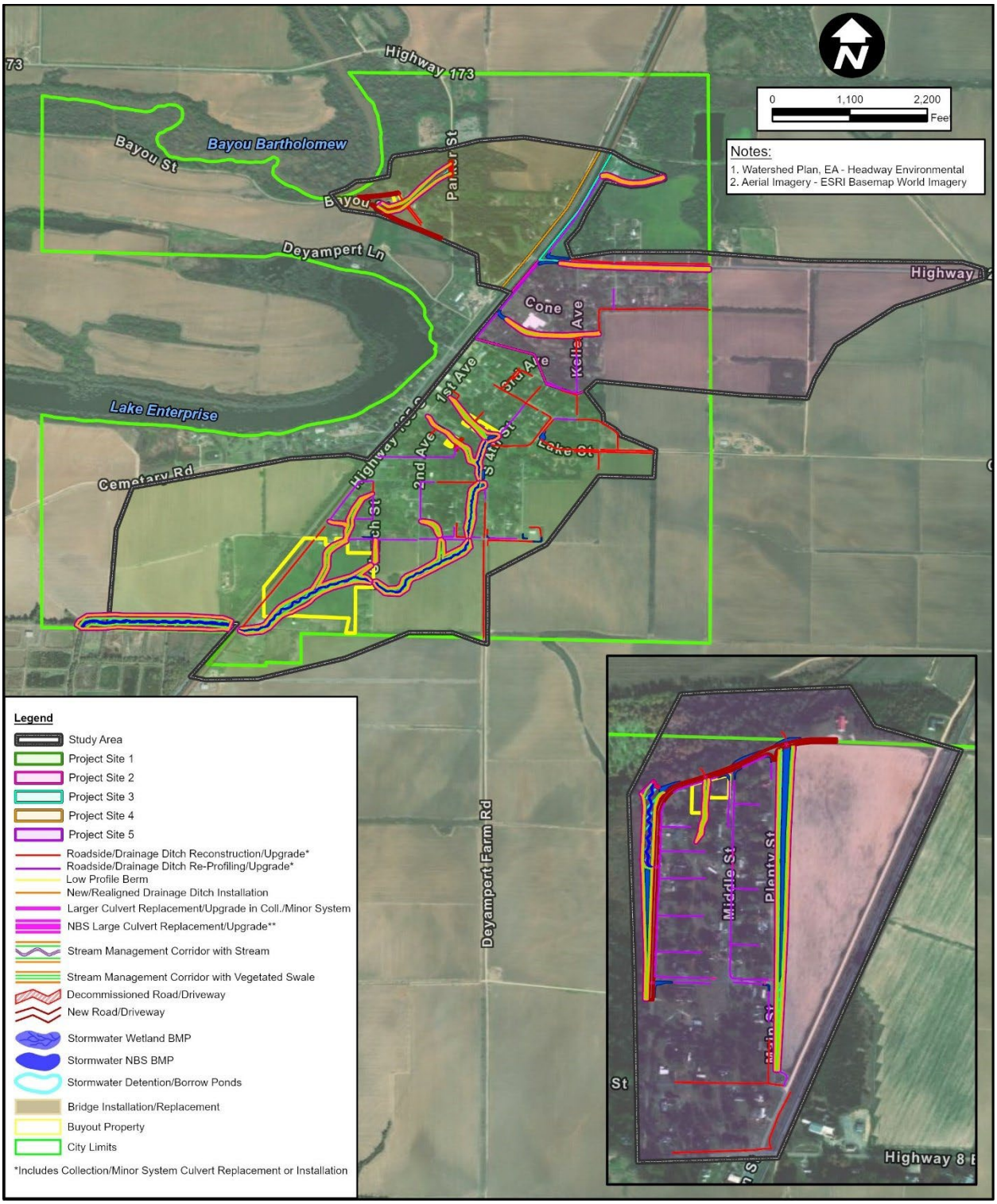


Figure D-46. Combined Study Area Works of Improvement: Traditional-Focused Drainage Improvements Alternative (Alternative 6B).

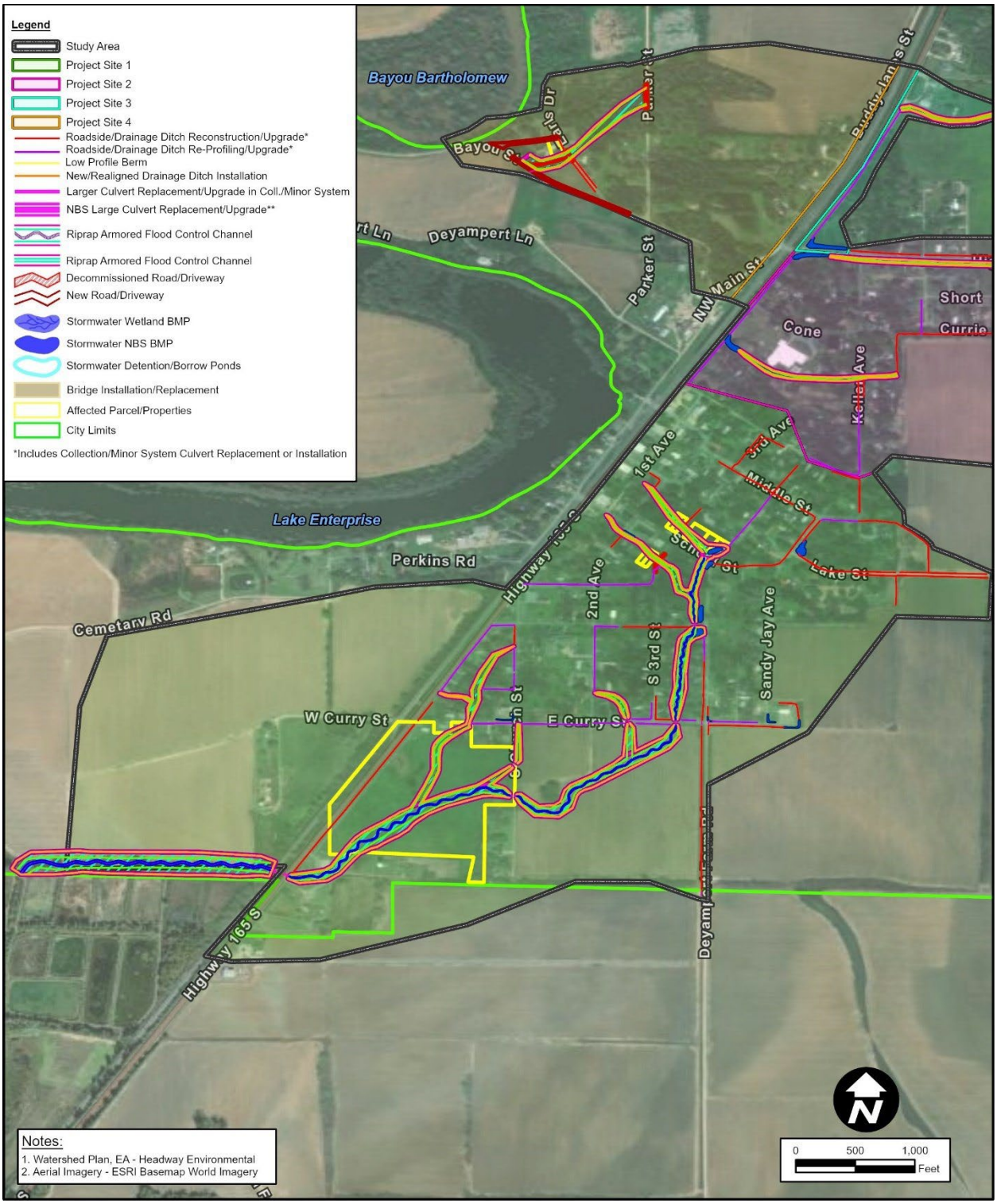


Figure D-47. Project Site 1 Works of Improvement: Traditional-Focused Drainage Improvements Alternative (Alternative 1B).

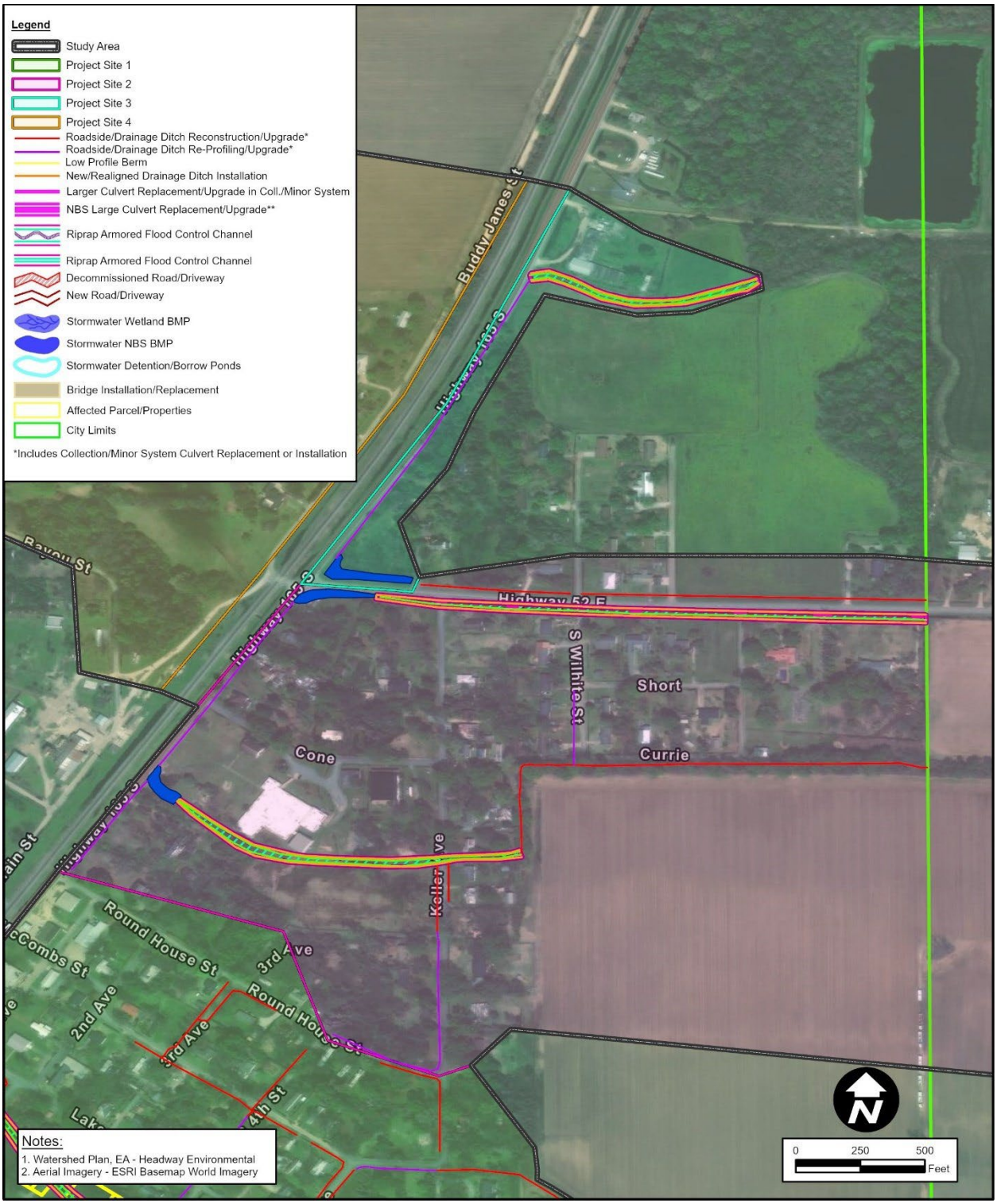


Figure D-48. Project Site 2 Works of Improvement: Traditional-Focused Drainage Improvements Alternative (Alternative 2B).

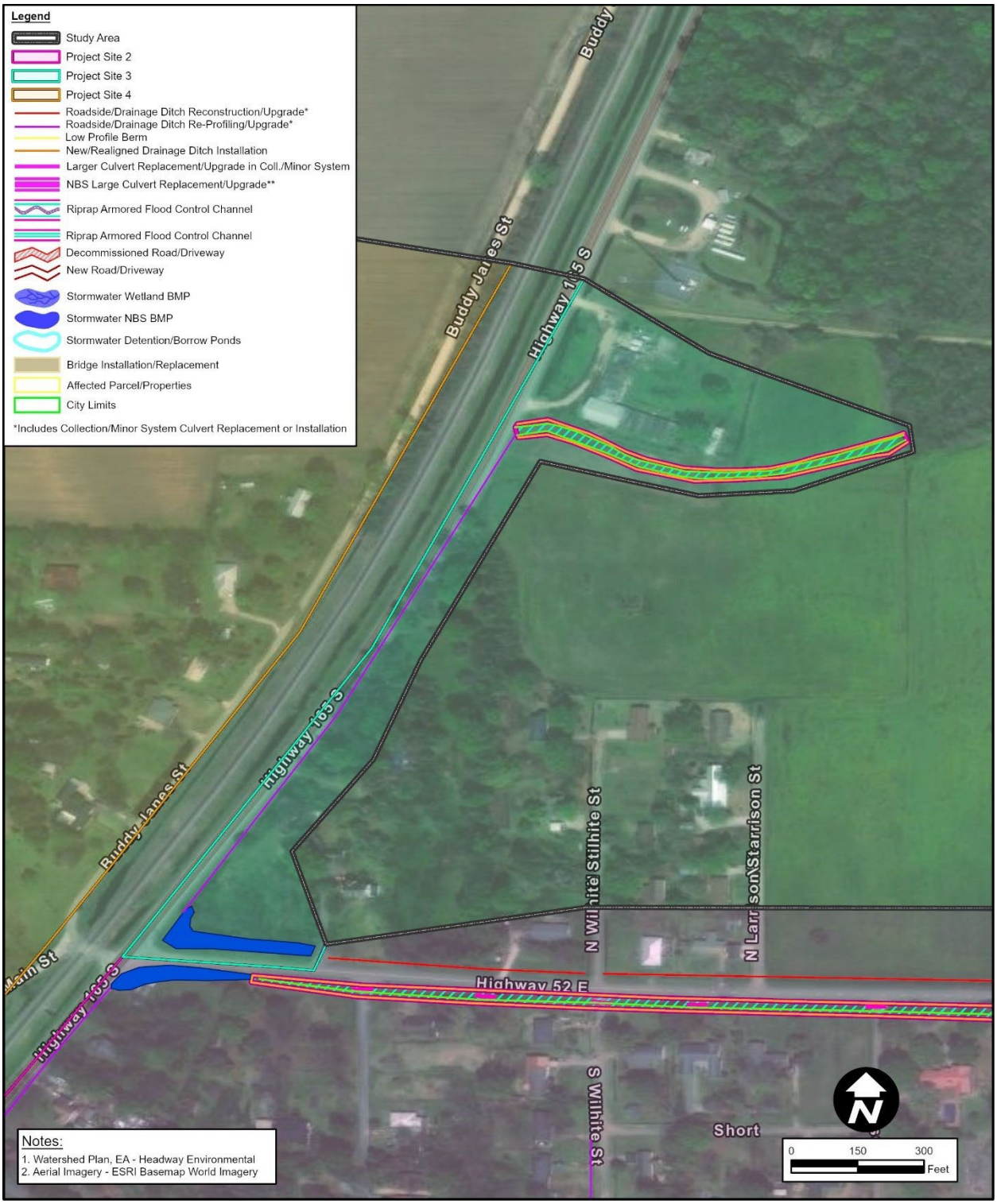


Figure D-49. Project Site 3 Works of Improvement: Traditional-Focused Drainage Improvements Alternative (Alternative 3B).

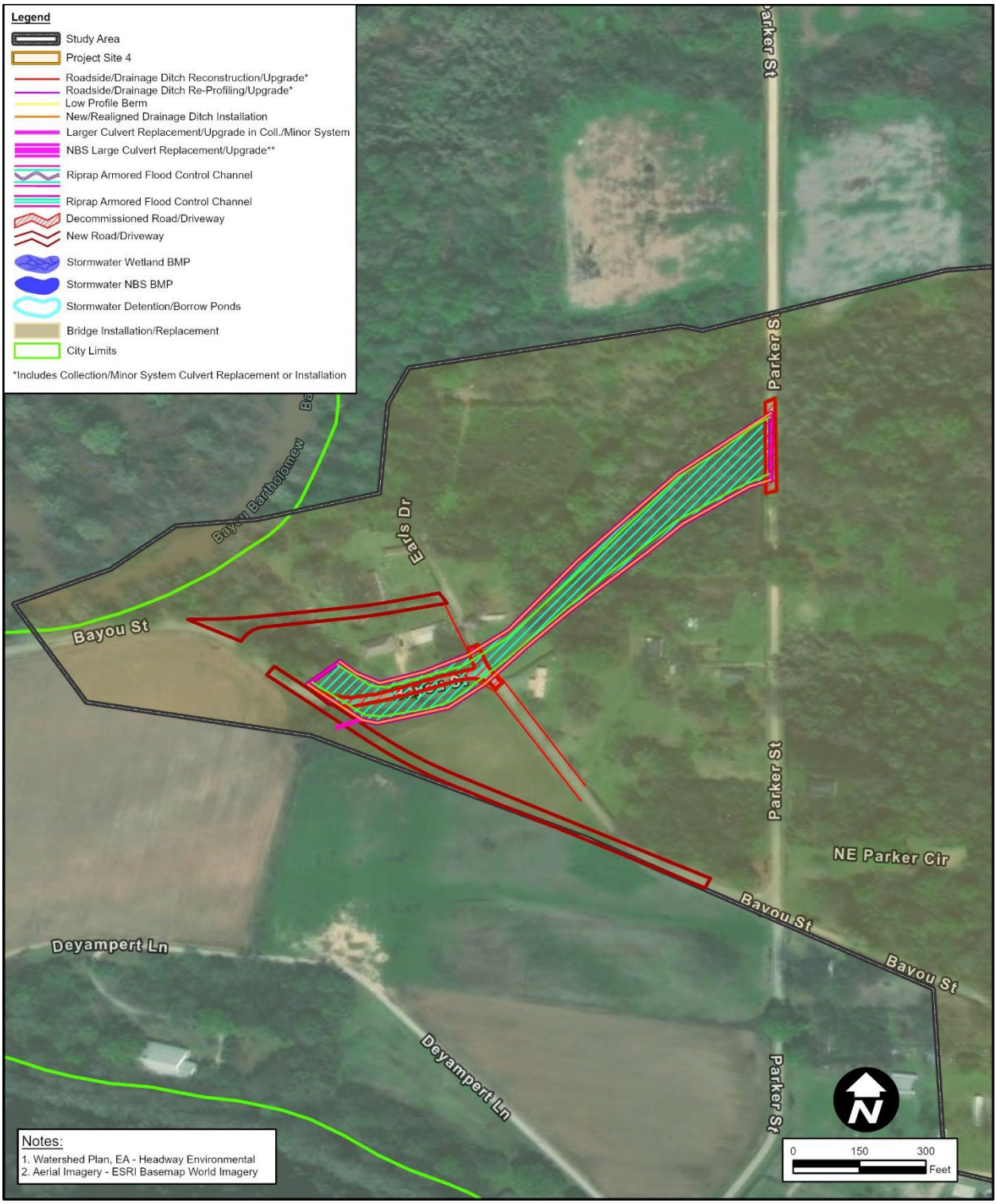


Figure D-50. Project Site 4 Works of Improvement: Traditional-Focused Drainage Improvements Alternative (Alternative 4B).

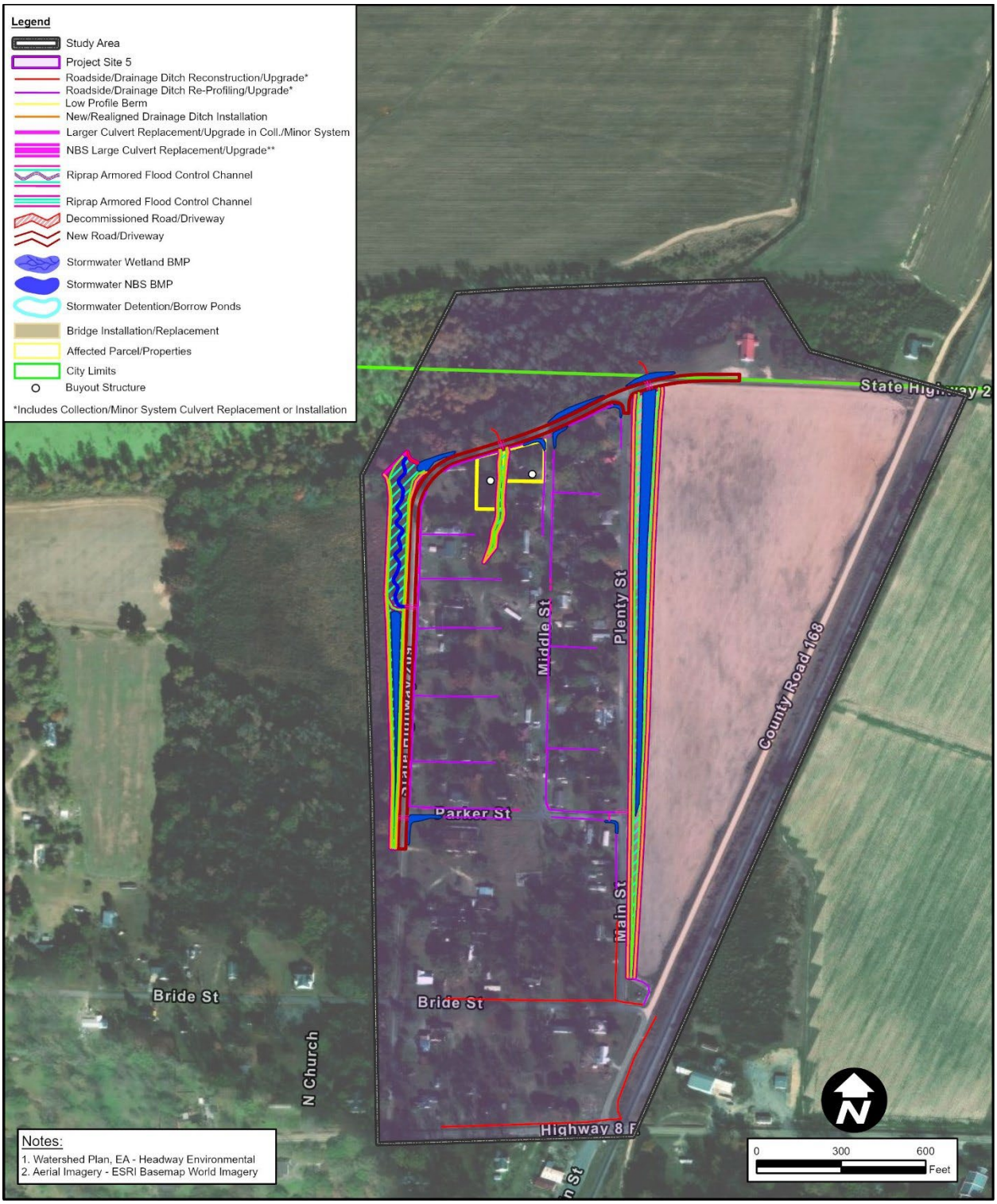


Figure D-51. Project Site 5 Works of Improvement: Traditional-Focused Drainage Improvements Alternative (Alternative 5B).

3.3 Summary and First Screening of the Initial Array of Alternatives

Development of the initial array of alternatives resulted in a total of 17 alternatives including six NBS-focused alternatives (1A through 6A), six traditional-focused alternatives (1B through 6B), and five nonstructural-only alternatives (1C through 5C), as described in Section 3.2.2. Table D-3 summarizes flood risk reduction and drainage improvement measures in each of these 17 alternatives.

Table D-3. Summary of the Initial Array of Alternatives

Areas of Improvement	NBS-Focused Drainage Improvements	Traditional-Focused Drainage Improvements	Floodplain Buyout
Project Site 1	**Alternative 1A**: • Install or retrofit 10 onsite/local NBS stormwater detention/retention BMPs totaling 0.6 ac. • Reconstruct, reprofile and/or realign and upgrade 19,930 linear feet (lf) of small roadside and drainage ditches and replace and upgrade 86 associated small culverts in the collection/minor drainage system. • Install 11,194 lf of SMC, including 4,766 lf of vegetated swale and 6,428 lf of NCD stream, which will function as conveyance/major drainage system channels. • Replace and upgrade 19 large culverts associated with road crossings and one railroad crossing on SMCs or other flood control channels with NBS culverts. • Decommission and remove 0.1 ac of small city streets and associated small/large culverts. • Buyout and remove 8 structures within the LOD.	**Alternative 1B**: • Install or retrofit 10 onsite/local NBS stormwater detention/retention BMPs totaling 0.6 ac. • Reconstruct, reprofile and/or realign and upgrade 19,930 lf of small roadside and drainage ditches and replace and upgrade 86 associated small culverts in the collection/minor drainage system. • Install 11,194 lf of riprap-armored flood control channel, which will function as a conveyance/major drainage system channel. • Replace and upgrade 19 large culverts associated with road crossings on riprap-armored flood control channels or other flood control channels with traditional culverts. • Decommission and remove 0.1 ac of small city streets and associated small/large culverts. • Buyout and remove 8 structures within the LOD.	**Alternative 1C**: • Buyout and demolition of 20 structures, their associated parcels, totaling 6.73 ac of land, within the FEMA 100-year floodplain and modeled 100-year floodplain.
Project Site 2	**Alternative 2A**: • Install or retrofit 2 onsite/local NBS stormwater detention/retention BMPs totaling 0.3 ac. • Reconstruct, reprofile and/or realign and upgrade 5,159 lf of small roadside and drainage ditches and replace and upgrade 37 associated small culverts in the collection/minor drainage system. • Install 2,975 lf of SMC with vegetated swales, which will function as conveyance/major drainage system channels. • Replace and upgrade 7 large culverts associated with road crossings on SMCs or other flood control channels with NBS culverts.	**Alternative 2B**: • Install or retrofit 2 onsite/local NBS stormwater detention/retention BMPs totaling 0.3 ac. • Reconstruct, reprofile and/or realign and upgrade 5,159 lf of small roadside and drainage ditches and replace and upgrade 37 associated small culverts in the collection/minor drainage system. • Install 2,975 lf of riprap-armored flood control channel, which will function as a conveyance/major drainage system channel. • Replace and upgrade 7 large culverts associated with road crossings on flood control channels or with traditional culverts.	**Alternative 2C**: • Buyout and demolition of 2 structures and their associated parcels, totaling 0.88 ac of land, within the FEMA 100-year floodplain and modeled 100-year floodplain.
Project Site 3	**Alternative 3A**: • Install or retrofit 1 onsite/local NBS stormwater detention/retention BMPs totaling 0.2 ac.	**Alternative 3B**: • Install or retrofit 1 onsite/local NBS stormwater detention/retention BMPs totaling 0.2 ac.	**Alternative 3C**: • Buyout and demolition of 1 structure and their associated

Areas of Improvement	NBS-Focused Drainage Improvements	Traditional-Focused Drainage Improvements	Floodplain Buyout
	• Reconstruct, reprofile and/or realign and upgrade 1,247 lf of small roadside and drainage ditches and replace and upgrade 10 associated small culverts in the collection/minor drainage system. • Install 776 lf of SMC with vegetated swales, which will function as conveyance/major drainage system channels.	• Reconstruct, reprofile and/or realign and upgrade 1,247 lf of small roadside and drainage ditches and replace and upgrade 10 associated small culverts in the collection/minor drainage system. • Install 776 lf of riprap-armored flood control channels, which will function as conveyance/major drainage system channels.	parcel, totaling 3.4 ac of land, within the FEMA 100-year floodplain and modeled 100-year floodplain.
Project Site 4	**Alternative 4A**: • Install 1,084 lf of SMC with vegetated swales, which will function as conveyance/major drainage system channels. • Replace and upgrade 1 large culverts associated with road crossings on SMCs or other flood control channels with NBS culverts. • Decommission and remove 0.3 ac of small city streets and associated small/large culverts and install 0.8 ac of alternate access roads or driveways and associated small culverts.	**Alternative 4B**: • Install 1,084 lf of riprap-armored flood control channels, which will function as conveyance/major drainage system channels. • Replace and upgrade 1 large culverts associated with road crossings on riprap-armored flood control channels or other flood control channels with traditional culverts. • Decommission and remove 0.3 ac of small city streets and associated small/large culverts and install 0.8 ac of alternate access roads or driveways and associated small culverts.	**Alternative 4C**: • Buyout and demolition of 1 structure and its associated parcels, totaling 0.14 ac of land, within the FEMA 100-year floodplain and modeled 100-year floodplain.
Project Site 5	**Alternative 5A**: • Install or retrofit 10 onsite/local NBS stormwater detention/retention BMPs totaling 1.3 ac. • Reconstruct, reprofile and/or realign and upgrade 7,551 lf of small roadside and drainage ditches and replace and upgrade 88 associated small culverts in the collection/minor drainage system. • Install 3,900 lf of SMC, including 3,488 lf of vegetated swale and 412 lf of NCD stream, which will function as conveyance/major drainage system channels. • Replace and upgrade 8 large culverts associated with road crossings on SMCs or other flood control channels with NBS culverts. • Buyout and remove 2 structures within the LOD.	**Alternative 5B**: • Install or retrofit 10 onsite/local NBS stormwater detention/retention BMPs totaling 1.3 ac. • Reconstruct, reprofile and/or realign and upgrade 7,551 lf of small roadside and drainage ditches and replace and upgrade 88 associated small culverts in the collection/minor drainage system. • Install 3,900 lf of riprap-armored flood control channels, which will function as conveyance/major drainage system channels. • Replace and upgrade 8 large culverts associated with road crossings on flood control channels with traditional culverts. • Buyout and remove 2 structures within the LOD.	**Alternative 5C**: • Buyout and demolition of 6 structures and their associated parcels, totaling 1.36 ac of land, within the FEMA 100-year floodplain and modeled 100-year floodplain.
Combined Project Sites (Study Area)	**Alternative 6A**: • Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 ac.	**Alternative 6B:** • Install or retrofit 23 onsite/local NBS stormwater detention/retention BMPs totaling 2.5 ac.	*N/A: No Nonstructural-Only Alternative was considered for the entire Study Area (i.e., all five Project Sites), because, as a stand-*

Areas of Improvement	NBS-Focused Drainage Improvements	Traditional-Focused Drainage Improvements	Floodplain Buyout
	• Reconstruct, reprofile and/or realign and upgrade 34,637 lf of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems. • Install 19,929 lf of SMC, including a total of 13,089 lf of vegetated swale and 6,840 lf of NCD stream, which will function as conveyance/major drainage system channels. • Replace and upgrade 35 large culverts associated with roads and one railroad crossing on SMCs or other flood control channels. • Decommission and remove 0.3 ac of small city streets and associated small/large culverts and install 2.1 ac of alternate access roads or driveways and associated small culverts. • Buyout and remove 10 structures within the LOD.	• Reconstruct, reprofile and/or realign and upgrade 34,637 lf of small roadside and drainage ditches and replace and upgrade 221 associated small culverts in the collection/minor drainage systems. • Install 19,929 lf of riprap-armored flood control channels, which will function as conveyance/major drainage system channels. • Replace and upgrade 35 large culverts associated with roads and one railroad crossing on riprap-armored flood control channels or other flood control channels. • Decommission and remove 0.3 ac of small city streets and install 2.1 ac of alternate access roads or driveways. • Buyout and remove 10 structures within the LOD.	*alone approach applied Study-Area-wide, it would not resolve the underlying inadequate drainage infrastructure across the community, resulting in a Completeness/Effectiveness deficiency consistent with the site-level Nonstructural-Only determinations in Section 4.4 of the Plan-EA.*

A two-step process was used to screen the initial array of alternatives to minimize the more involved and costly economic analysis. The first screening evaluated the initial array of 17 alternatives against all the identified project goals, objectives, and criteria defined by the Sponsors, the affected community, and regulatory requirements, including 1) the Project Purpose and Need, 2) the Project Objectives and Constraints, and 3) the four alternative formulation criteria required in DM9500-013, as shown in Table D-4.

Table D-4. Project Objectives and Constraints

Project Objectives	Project Constraints	PR&G Required Evaluation Criteria
Objective 1: Flood reduction	**Constraint 1:** Funding limitations. Funding limitations to provide non-Federal project matching funds for implementation and funds for long-term operation and maintenance	**Criterion 1:** Completeness: The extent to which a given alternative plan provides and accounts for all necessary investments or other actions to ensure the realization of the planned effects, including any necessary actions by others. This may require relating the plan to other types of public or private plans if the other plans are crucial to realization of the contributions to the objective. Completeness does not automatically mean that alternative actions need to be large in scope or scale.
Objective 2: Water quality improvement	**Constraint 2:** Cultural and historic resource protection. Avoid impacts to cultural, historic, archeological, or Tribal resources, including Bank of Parkdale (AS0052), and two historical archaeology sites (3AS0466 and 3AS0467).	**Criterion 2:** Effectiveness: The extent to which an alternative alleviates the specified problems and achieves the specified opportunities.
Objective 3: Increased greenspace and recreational opportunities	**Constraint 3:** Protected land use. Avoid or minimize real property acquisition or change of use for parklands, natural areas, recreational areas, or other protected areas.	**Criterion 3:** Efficiency: The extent to which an alternative alleviates the specified problems and realizes the specified opportunities at least cost.
Objective 4: Increased flood risk resiliency through NBS	**Constraint 4:** Environmental compliance. Avoid significant adverse impacts to threatened and endangered species habitat, wetlands, waterbodies, or other sensitive natural areas.	**Criterion 4:** Acceptability: The viability and appropriateness of an alternative from the perspective of the general public and consistency with existing Federal laws, authorities, and public policies. It does not include local or regional preferences for particular solutions or political expediency.
	Constraint 5: Community access. Avoid disruptions to emergency access routes, school bus routes,	

Project Objectives	Project Constraints	PR&G Required Evaluation Criteria
	and primary residential access roads during construction.	

The first screening resulted in all of the NBS-Focused and Traditional-Focused Alternatives being carried forward, a total of 12 alternatives, including the alternatives for each individual Project Site (Alternatives 1A through 5A [NBS-Focused] and 1B through 5B [Traditional-Focused]) and for the entire Study Area (Alternatives 6A and 6B). The rationale for these decisions are summarized as follows:

- All of the six NBS-Focused alternatives met both the Purpose and Need, an absolute requirement, and the four PR&G required evaluation criteria, and fully met all of the most critical Objectives and Constraints.
- All of the six Traditional-Focused Alternatives met the Purpose and Need and fully or partially met the four PR&G required evaluation criteria.
- While the Traditional-Focused Alternatives all met fewer of the Project Objectives and Constraints than their NBS-Focused Alternative counterparts, the Project Objectives and Constraints that were not met are not absolutely critical to their acceptability and it is possible that economic considerations may make them preferrable to the NBS-Focused Alternatives counterpart options.

The Nonstructural-Only Alternatives (Alternatives 1C through 5C) would acquire all structures and parcels within the FEMA FIRM 100-year floodplain and/or the modeled 100-year floodplain within each Project Site. These Alternatives were determined to not meet PR&G Criterion 1 (Completeness) or PR&G Criterion 2 (Effectiveness) and were eliminated from detailed analysis on that basis. As described in Section 2, the flooding observed and documented in the Cities of Wilmot and Parkdale results primarily from inadequate capacity in the cities' headwater urbanized drainage systems — small collection ditches and culverts serving the street grid — rather than from development within the regulatory 100-year floodplain. A substantial portion of the observed flooding, including flooding documented from events smaller than the 5-year storm, occurs outside the FEMA FIRM regulatory 100-year and 500-year floodplains entirely. Because the Nonstructural-Only Alternatives are scoped specifically to acquisition of structures within the 100-year floodplain, they would reduce flood damages only for that category of structure, while leaving unaddressed the recurring flood damages documented to streets, vehicles, non-residential properties, and residential structures located outside the mapped floodplain at each Project Site. These Alternatives are therefore incomplete, as they do not account for all actions necessary to achieve the Project's planned flood-damage-reduction effects, and only minimally effective at achieving that objective, independent of their performance relative to any other alternative.

This determination is distinct from, and should not be conflated with, the limited property buyouts included within the Preferred Alternative and other Action Alternatives. Those buyouts (10 structures under the Preferred Alternative) are not floodplain-based acquisitions selected for flood frequency; rather, they consist of structures located within the LOD of the proposed drainage improvements and are acquired because they physically occupy the footprint required for construction of the channel and drainage system upgrades, not because they were identified as the most frequently flooded structures in the Study Area. The cost of these LOD-driven buyouts is therefore not representative of, or comparable to, the cost of a Study Area–wide floodplain acquisition program, and should not be used to infer the feasibility or cost-effectiveness of full floodplain buyout.

3.4 Engineers' Opinion of Probable Costs to Install and Maintain Initial Alternatives Carried Forward From First Screening

The second screening of the remaining smaller group of 12 alternatives focused on the more comprehensive and nuanced issues involved in the economic analysis of the alternatives, which compares the costs to implement and maintain the improvement measures to the monetized benefits obtained from their implementation, referred to as benefit-cost analysis (BCA) and reflected in the resulting BCR. The engineering cost estimating and economic analysis that provide the basis for this second screening are presented in the remaining sections of this IAR.

The Engineers' Opinion of Probable Costs (EOPC) to install and maintain all 12 initial alternatives carried forward from the first screening, including six NBS-focused (1A through 6A) and six traditional-focused (1B through 6B) alternatives are presented in this section. All unit prices were converted to 2023 prices using the U.S. Bureau of Labor Statistics (BLS) online Consumer Price Index (CPI) Inflation Calculator (U.S. Bureau of Labor Statistics, n.d.).

3.4.1 Component Units, Quantities, and Unit Cost Estimations and Sources

Geographic Information System (GIS) and CADD analysis of the geospatial and engineering datasets were used to develop the quantities and units of the various components in the EOPCs. Multiple sources were required to estimate unit prices for the EOPCs. Much of this data related to the parcels, structures, and infrastructure within the Study Areas are also needed to perform the economic analysis in Section 4. The following information regarding the affected parcels, structures, and infrastructure are summarized here for ease of reference for both the development of the EOPCs and the economic analysis.

Costs for Land for Easements/ROW and Buyouts

Multiple online real estate websites were queried within the Study Area to obtain current market prices for mean bare land costs on a per acre basis. Two bare land costs were obtained for the Study Area, irrigated rowcrop farmland near the cities, and residential land within the developed areas of the cities. The following summaries of the results of these queries and the data sources are shown below.

- ***Irrigated Rowcrop Farmland*** (3 properties identified for sale within 1 mile radius of Wilmot and Parkdale)
    1. The Duxwing 60 Farm (Ashley RD. 353, Parkdale, AR 71661 - Ashley County): 60.88 acres of irrigated rowcrop farmland for $365,280 = $6,000/acre
       Source: (Land.com, n.d.-b)
    2. The Bayou Bartholomew Farm (Parkdale, AR 71661 - Ashley County): 253.82 acres of irrigated rowcrop farmland for $875,000 = $3,447/acre
       Source: (Land.com, n.d.-a)
    3. Highway 209 (School St.), Parkdale, AR 71661 - Ashley County): 30.51 acres of forested and fallow rowcrop farmland for $49,000 = $1,606/acre
       Source: (Realtor.com, n.d.-b)

Avg. Bare Land Cost/Acre (Farmland) = $3,684/acre

- ***Residential Land*** (2 properties identified for sale within the gridded city areas of Wilmot and Parkdale)

    1. 307 E Curry St, Wilmot, AR 71676: 0.8 acre lot, maintained offered for $4,000 = $5,000/acre
    Source: (Realtor.com, n.d.-a)

    2. 320 Highway 209 (School St.), AR 71661: 7850 square foot (sqft) lot, maintained offered for $4,250 = $23,583/acre
    Source: (Realtor.com, n.d.-d)

Avg. Bare Land Cost/Acre (Residential) = $14,291/acre

Complete buyout of seven residential properties (whole parcel/lot and structures) and removal of their structures will be required to construct both Alternatives 6A and 6B. Three additional parcels will require partial ROW acquisition, and three structures located on those parcels will be removed as part of the project. The land costs based on the parcel size and the average bare land costs/acre, depending on the location of the property (agricultural land or residential land) were added to the structure value of the structures on the property to obtain a total buyout and partial buyout cost for all of the 10 properties, which is included as a line item cost in both EOPCs. Lot sizes were obtained from the Ashley County Assessors online parcel data (Ashley County Assessor's Office, n.d.). The structure values were obtained from the USACE's National Structural Inventory (NSI) geospatial dataset (Samapriya et al., 2024; U.S. Army Corps of Engineers, 2024), which also includes information related to the values of the contents and vehicles at for the property, as well as the ground elevation, foundation height, number of stories, and square footage of the structures.

Relocation costs for persons displaced as the result of property buyouts were estimated in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. Actual costs were obtained from the U.S. Department of Transportation (USDOT) Federal Highway Administrations 2021 Fixed Residential Moving Cost Schedule (U.S. Department of Transportation Federal Highway Administration, 2021) based on a 6-room residential structure in Arkansas, with the 2021 costs then converted to 2024 dollars.

For residential buyouts, total property values were calculated as the sum of:

1. Structure values (from USACE's National Structural Inventory (NSI) geospatial dataset (U.S. Army Corps of Engineers, 2022)]), and
2. Land values computed from average bare land costs and lot sizes (Ashley County Assessor's Office, n.d.).

The resulting total buyout and partial buyout costs for all 10 residential properties is included as a separate line item in both EOPCs.

Residential Relocation Costs and Replacement of Publicly Owned Facilities

Relocation costs to individual property owners and replacement costs to the City for publicly owned facilities displaced by the Project were estimated in accordance with the Uniform Relocation Assistance (URA) and Real Property Acquisition Policies Act of 1970 (49 CFR Part 24).

In compliance with this authority, relocation allowances include more than physical moving. Planning-level estimates cover moving expenses, rental assistance or replacement housing payments, closing and incidental costs, and administrative contingency. For this Project,

residential relocation costs were assumed to equal the maximum standard allowable payment of $41,000 per dwelling (49 CFR §24.401).

Final eligibility and payment amounts for both residential relocations and public facility replacement will be confirmed during right-of-way acquisition in accordance with URA procedures and NRCS policy.

Construction Costs

Wherever available, construction costs were derived from the Arkansas Department of Transportation (ArDOT) Program Management Division 2023 Weighted Average Unit Prices (Arkansas Department of Transportation, 2023a) and “Cost Per Mile Report” (Arkansas Department of Transportation, 2023b). Construction costs for new and replacement roadway (including driveways) and small bridges were obtained from the County Judges’ Association of Arkansas (CJAA) 2017 County Needs Report (Black, 2017). Unit costs for construction of small (less than 5 acres) onsite NBS stormwater detention/retention were obtained from the EPA’s *Stormwater Best Management Practice – Bioretention (Rain Garden) Fact Sheet* (U.S. Environmental Protection Agency, 2021). All other unit costs prices were not available through extensive online data searches and were obtained from EOPCs developed by the design engineering team for multiple similar projects in similar settings within the last five years.

Operation and Maintenance Costs

O&M costs for small (less than 5 acres) onsite NBS stormwater detention/retention (bioretention cells) were obtained from the online Green Values Calculator (Center for Neighborhood Technology, n.d.), which was developed and is maintained by the Center for Neighborhood Technology. O&M costs for stormwater wetlands (5-25 acres) were obtained from the report “Estimate Unit Costs And Develop Total Life-Cycle Cost Model - Tasks 5 & 6” (Wood Environment & Infrastructure Solutions, Inc., 2019), which was developed by Wood Environment & Infrastructure Solutions, Inc. (WEIS) for Sarasota County, Florida (Wood Environment & Infrastructure Solutions, Inc., 2019). Costs for maintenance for SMCs are based on the design team's experience monitoring and adaptively managing more than 20 CWA Section 404 stream and wetland mitigation banks and other stream and wetland restoration projects.

The O&M costs for wetland and stream restoration (SMC) projects are much higher in years 3–10 of the period of analysis because of the greater likelihood of significant adaptive management requirements during this time. These may include structural modifications, re-vegetation, and invasive species control associated with the first eight years of ecological restoration, reflecting the complexity of interactions among earthworks, structures, sediment and water flows, and vegetative development. The implementation phase (design, permitting, and construction) occurs during years 1–2 of the period of analysis and is not part of the project life. By approximately year 8 (year 10 of the period of analysis), most adaptive management issues are typically resolved, as the full community of native vegetation (grasses, forbs, shrubs, and trees) reaches synergistic maturity and begins providing sustained structural and functional support to the ecological system through bioengineering stability, bio-filtration and sediment modulation, shading for temperature and invasive species control, and sustainable aquatic and terrestrial habitat.

The O&M costs for riprap lined flood control channel was obtained from an online copy of the NRCS’s 2014 Typical Installation and Maintenance Costs for Michigan (U.S. Department of Agriculture Natural Resources Conservation Service, 2014). O&M large, street crossing culverts and small bridges are assumed to be the same and were taken from the County Judges’

Association of Arkansas (CJAA) 2017 County Needs Report (Black, 2017). The O&M costs for roadside ditches and their included small culverts were obtained through a phone query to engineering staff at the Louisiana Department of Transportation and Development's (LADOTD) District 5 offices in Monroe, Louisiana. Their standard cost estimating methods for roadside ditch maintenance includes maintenance of the small culverts in the ditches for driveways.

To develop the average annual O&M costs used in the economic analysis, unit O&M costs were applied over the full 50-year evaluated life of the project (Years 3–52). For each Project site, the annual stream of O&M costs was discounted to present value and then converted into a uniform annual equivalent using the Equivalent Annual Cost (EAC) method prescribed in OMB Circular A-94. The EAC formula applies the 3.25 percent real discount rate (consistent with the current USACE memorandum for federal water resources projects) over the 50-year project life. This method ensures that O&M costs are expressed as a single average annual value that is directly comparable to average annual benefits in the benefit-cost analysis. These average annual O&M costs are carried forward into Section 3 (Economics) for use in the benefit-cost calculations.

3.4.2 NBS-Focused Alternatives Costs

The Total Installation Cost for the six NBS-focused alternatives are presented in Table D-5, which includes all costs for full installation/implementation of the Works of Improvement for each of the five Project Sites individually (Alternatives 1A, 2A, 3A, 4A, and 5A) and the combined NBS-focused alternative (Alternative 6A) Project. These costs include design and permitting, ROW/easement acquisitions and property buyouts and any other real property rights necessary for Project implementation, construction, NRCS technical assistance, permitting, and administrative costs of both the NRCS and SLO. The Works of Improvement Total Cost includes real property rights and construction) and a 10 percent contingency. Engineering Costs and Other Costs of Installation for each of the NBS-focused alternatives is also provided in Table D-5. Table D-6 presents a detailed cost breakdown of the O&M costs for each of the six NBS-focused alternatives. The evaluated life (project life) of the Project is 50 years, consistent with NRCS policy (390 NWPM §501.12(C)), and begins after construction is complete. The implementation phase (design, permitting, and construction) is not included in the Project life but is included in the period of analysis, which totals 52 years (2 years implementation + 50 years Project life). For the purposes of this analysis, O&M costs are applied during Years 3-52 (the full 50-year evaluated life).

3.4.3 Traditional-Focused Alternatives Costs

The Total Installation Cost for the six traditional-focused alternatives are presented in Table D-7, which includes all costs for full installation/implementation of the Works of Improvement for each Project Site individually (Alternatives 1B, 2B, 3B, 4B, and 5B) and the combined traditional-focused alternative (Alternative 6B), as described above. These costs include design and permitting, ROW/easement acquisitions and property buyouts and any other real property rights necessary for Project implementation, construction, NRCS technical assistance, permitting, and administrative costs of both the NRCS and SLO. Table D-8 presents a detailed cost breakdown of the O&M costs for each of the six Traditional-focused alternatives. The evaluated life (project life) of the Project is 50 years, consistent with NRCS policy (390 NWPM §501.12(C)), and begins after construction is complete. The implementation phase (design, permitting, and construction) is not included in the Project life but is included in the period of analysis, which totals 52 years (2 years implementation + 50 years Project life). For the purposes of this analysis, O&M costs are applied during Years 3–52 (the full 50-year evaluated life).

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Table D-5. Engineers' Opinion of Probable Costs for the NBS-Focused Drainage Improvements Alternatives

Item Description	Estimated Quantity	Unit	Unit Cost	Alt 1A (Site 1)		Alt 2A (Site 2)		Alt 3A (Site 3)		Alt 4A (Site 4)		Alt 5A (Site 5)		Alt 6A (Combined All Sites NBS-Focused)	
				Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension
Works of Improvement Costs															
Real Property Rights[2]															
Drainage Right-Of-Way Or Easement Acquisition (Residential Land)[3]	11.3	Acres	$14,291.00	4.7	$67,712	4.3	$61,408	0.2	$3,297	0.0	$0	2.1	$29,577	11.3	$161,994
Drainage Right-Of-Way Or Easement Acquisition (Ag Land)[3]	25.7	Acres	$3,684.00	17.5	$64,526	0.0	$0	0.5	$1,778	3.1	$11,465	4.6	$16,837	25.7	$94,606
Wetland/Floodplain Conservation Easement Acquisition[3]	0.0	Acres	$5,000.00	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0
LOD Buyout (Residential Properties) (10 properties w/structures)[3]	10	Lump Sum	Varies by Site	8	$560,846	0	$0	0	$0	0	$0	2	$242,784	10	$803,630
Relocation[4]	10	Each	$41,000.00	8	$328,000	0	$0	0	$0	0	$0	2	$82,000	10	$410,000
Utility Changes/Relocations[5]	1	Lump Sum		1	$120,238	1	$23,217	1	$3,854	1	$16,815	1	$35,877	1	$200,000
Road Decommission for Reuse (cold milling)[6]	0.3	Acres	$19,989.00	0.1	$1,218	0.0	$0	0.0	$0	0.3	$5,579	0.0	$0	0.3	$6,797
Install Alternative Access Roads/Driveways (ARDOT "Other Roads")[6]	0.64	Lane Miles	$870,000.00	0.00	$0	0.00	$0	0.00	$0	0.12	$104,400	0.52	$452,400	0.64	$556,800
Minor/Collection Drainage: Small Culvert Replacement (incl. R&D of existing pipe culvert, 20' of 24"Class 4 RCP culvert, 2 RCP FES)[6]	223	Each	$10,423.01	86	$896,379	37	$385,651	10	$104,230	2	$20,846	88	$917,225	223	$2,324,331
Major/Conveyance Drainage: Large Culverts (incl. R&D of existing pipe culvert, 2x50' of 24"Class 4 RCP culvert, 50' of 48" Class 4 RCP culvert, 200' Type A Guardrail, 4 Type 1 Guardrail Terminal, 4 Type 1 Terminal Anchor Posts)[6]	35	Each	$69,330.63	19	$1,317,282	7	$485,314	0	$0	1	$69,331	8	$554,645	35	$2,426,572
Major/Conveyance Drainage: Bridges[7]	0	Each	$500,000.00	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Construction[2]															
Mobilization[5]	1	Lump Sum		1	$20,000	1	$5,000	1	$5,000	1	$10,000	1	$20,000	1	$60,000
Construction Access Points[5]	1	Lump Sum		1	$13,333	1	$3,333	1	$3,333	1	$6,667	1	$13,333	1	$40,000
Staging And Stockpile Areas[5]	1	Lump Sum		1	$10,000	1	$2,500	1	$2,500	1	$5,000	1	$10,000	1	$30,000
Silt Fence[6]	8,091	Linear Feet	$3.10	7,501	$23,253	0	$0	0	$0	0	$0	590	$1,829	8,091	$25,082
Remove & Dispose Buyout Structures[5]	9	Each	$10,000.00	8	$80,000	0	$0	0	$0	0	$0	2	$20,000	10	$100,000
Major/Conveyance Drainage: Stream Management Corridor (SMC)															
Clearing & Grubbing[6]	37.0	Acres	$14,804.21	22.3	$329,443	4.3	$63,613	0.7	$10,559	3.1	$46,071	6.6	$98,301	37.0	$547,987
On-Site Grading Cut/Fill Balance (max haul on site = 3,000 ft)[6]	234,575	Cubic Feet	$10.10	219,845	$2,220,435	0	$0	0	$0	0	$0	14,730	$148,773	234,575	$2,369,208

Item Description	Estimated Quantity	Unit	Unit Cost	Alt 1A (Site 1)		Alt 2A (Site 2)		Alt 3A (Site 3)		Alt 4A (Site 4)		Alt 5A (Site 5)		Alt 6A (Combined All Sites NBS-Focused)	
				Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension
Boulder Constructed Riffle[6]5	7	Each	$18,500.00	4	$74,000	0	$0	0	$0	0	$0	3	$55,500	7	$129,500
Toewood With Sod Lifts[5]	4,938	Linear Feet	$125.00	4,561	$570,125	0	$0	0	$0	0	$0	377	$47,125	4,938	$617,250
Augmented Riffle[5]	24,396	Square Feet	$2.50	23,673	$59,183	0	$0	0	$0	0	$0	723	$1,808	24,396	$60,990
Cascade Riffle[5]	0	Each	$14,500.00	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Log Drop[5]	0	Each	$9,000.00	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Vegetated Swale and Geomorphic Floodplain[5]	13,089	Linear Feet	$125.00	4,766	$595,750	2,975	$371,875	776	$97,000	1,084	$135,500	3,488	$436,000	13,089	$1,636,125
Shrub & Tree Plantings[5]	37.0	Acres	$3,500.00	22.3	$77,887	4.3	$15,039	0.7	$2,496	3.1	$10,892	6.6	$23,240	37.0	$129,555
Mulch & Seeding[6]	37.0	Acres	$2,317.71	22.3	$51,577	4.3	$9,959	0.7	$1,653	3.1	$7,213	6.6	$15,390	37.0	$85,791
Onsite NBS Stormwater Detention/Retention BMPs(<5 Acres)[8]	2.4	Acres	$142,500.00	0.6	$85,500	0.3	$42,750	0.2	$28,500	0.0	$0	1.3	$185,250	2.4	$342,000
Stormwater Wetlands (5 - 25 Acres)[5]	0	Acres	$14,000.00	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0
Minor/Collection Drainage: Ditches															
Reconstruct/Upgrade (incl. shaping ditch, solid sodding (2.0 sqyd/lf))[6]	17,459	Linear Feet	$19.34	13,003	$251,478	1,021	$19,746	897	$17,348	750	$14,505	1,788	$34,580	17,459	$337,657
Reconstruct/Upgrade & Reprofiling (incl. excavation (1.5 cuyd/lf), shaping ditch, solid sodding (2.0 sqyd/lf))[6]	17,491	Linear Feet	$35.02	6,928	$242,619	3,553	$124,426	1,247	$43,670	0	$0	5,763	$201,820	17,491	$612,535
Reconstruct/Upgrade, Reprofiling & Realignment (incl. excavation (2.5 cuyd/lf), shaping ditch, solid sodding (2.0 sqyd/lf))[6]	1,400	Linear Feet	$45.47	1,400	$63,658	0	$0	0	$0	0	$0	0	$0	1,400	$63,658
FEMA FIRM CLOMR & LOMR[5]	1	Lump Sum		1	$99,000	1	$0	1	$0	1	$16,500	1	$49,500	1	$165,000
	Works of Improvement Subtotal[10,11]				**$8,223,000**		**$1,614,000**		**$325,000**		**$481,000**		**$3,694,000**		**$14,337,000**
Works of Improvement Cost Contingency	1	Lump Sum	10.00%	1	$822,300	1	$161,400	1	$32,500	1	$48,100	1	$369,000	1	$1,433,700
	Works of Improvement Total[10,11]				**$9,045,000**		**$1,775,000**		**$358,000**		**$529,000**		**$4,063,000**		**$15,771,000**
Engineering Costs															
Engineering - Final Design (% of Works of Improvement Subtotal)	1	Lump Sum	15.00%	1	$1,233,450	1	$242,100	1	$48,750	1	$72,150	1	$554,100	1	$2,150,550
Construction Oversight & Quality Control (% of Works of Improvement Subtotal)	1	Lump Sum	8.50%	1	$698,955	1	$137,190	1	$27,625	1	$40,885	1	$319,990	1	$1,218,645
	Engineering Total[10,11]				**$1,932,000**		**$379,000**		**$76,000**		**$113,000**		**$868,000**		**$3,369,000**
Other Costs of Installation															
Technical Assistance (NRCS - % of Works of Improvement Subtotal)	1	Lump Sum	0.05%	1	$4,112	1	$807	1	$163	1	$241	1	$1,847	1	$7,169
Permitting[9]	1	Lump Sum		1	$41,250	1	$3,750	1	$3,750	1	$3,750	1	$22,500	1	$75,000

Item Description	Estimated Quantity	Unit	Unit Cost	Alt 1A (Site 1)		Alt 2A (Site 2)		Alt 3A (Site 3)		Alt 4A (Site 4)		Alt 5A (Site 5)		Alt 6A (Combined All Sites NBS-Focused)	
				Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension
Project Administration (NRCS - % of Works of Improvement Subtotal)	1	Lump Sum	1.00%	1	$82,230	1	$16,140	1	$3,250	1	$4,810	1	$36,940	1	$143,370
Project Administration (Sponsor - % of Works of Improvement Subtotal)	1	Lump Sum	0.50%	1	$41,115	1	$8,070	1	$1,625	1	$2,405	1	$18,470	1	$71,685
Other Costs of Installation Total[10,11]					**$169,000**		**$29,000**		**$9,000**		**$11,000**		**$80,000**		**$297,000**
Total Installation Cost[10,11]					**$11,146,000**		**$2,183,000**		**$443,000**		**$653,000**		**$55,011,000**		**$19,437,000**

Price base: 2023. All non-2023 prices were converted to 2023 prices using the U.S. Bureau of Labor Statistics online CPI Inflation Calculator (BLS, n.d.).

[1] Installation costs include three categories: 1) Works of Improvement – construction, real property rights, relocation, plus contingency; 2) Engineering – final design and construction oversight; and 3) Other Costs of Installation – Technical Assistance (installation phase), Project Administration, and Permitting. All three categories are part of the total installation cost base consistent with NRCS NWPM Fig 505D-1.

[2] Costs of Real Property Rights and Construction for Works of Improvement are defined by Sections 501.80.A.2. and 501.80.A.14, respectively of 390 M 501 Subpart F (5th edition, amended June 2024).

[3] Bare land costs for easements/ROWs and property (whole parcel/lot and structures) buyout cost estimation methods are presented under "Costs for Land for Easements/ROW and Buyouts" in Section 3.4.1.

[4] Residential relocation and replacement of publicly owned facilities costs were estimated in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (49 CFR Part 24) and NRCS NWPM § 501.80A.14.g. For planning-level purposes, a maximum standard residential relocation cost of $41,000 per dwelling was applied, consistent with 49 CFR § 24.401. Functional replacement of the City's vehicle maintenance facility was estimated separately in accordance with 49 CFR § 24.108 and includes allowances for demolition, site preparation, design and permits, and contingency.

[5] Unit prices were not identified through extensive online data searches and were obtained from recent EOPCs developed by design engineering team for similar projects within the last five years and adjusted to 2023 prices.

[6] Costs taken from ARDOT Program Management Division 2023 "Weighted Average Unit Prices" (Arkansas Department of Transportation, 2023a) and "Estimated Costs Per Mile" (Arkansas Department of Transportation, 2023b).

[7] Construction costs for new and replacement small bridges were obtained from the County Judges' Association of Arkansas (CJAA) 2017 County Needs Report (Black, 2017) as described in "Construction Costs" in Section 3.4.1.

[8] Unit costs for construction of small (less than 5 acres) onsite NBS stormwater detention/retention were obtained from the USEPA's online Stormwater Best Management Practice – Bioretention (Rain Garden) Fact Sheet (U.S. Environmental Protection Agency, 2021).

[9] Assumes a CWA Section 404 Nationwide Permit will be required. Costs are based on design engineering team experience on similar projects.

[10] Works of Improvement in this table include construction (all physical works, mobilization, and contingency), Real Property Rights (drainage right-of-way/easements, wetland/floodplain easements, and buyouts), and relocation costs, consistent with NRCS policy (NWPM §501.80A.14). Engineering Costs (Final Design and Construction Oversight) and Other Costs of Installation (Technical Assistance, Permitting, and NRCS/Sponsor Project Administration) are shown separately. Total Installation Cost is the sum of all three categories.

[11] Line item costs in this table are reported unrounded to preserve traceability to published sources and underlying engineering estimates for audit purposes. The final Total Installation Cost is rounded to the nearest $1,000, in accordance with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance requiring values be reported at a practical level of significance. Because Economic Table 1 rounds values at each line item rather than only at the final total, a small difference between the two tables' totals may result from the order in which rounding is applied, rather than from any difference in the underlying cost estimate.

Table D-6. Operations and Maintenance Costs for the NBS-Focused Drainage Improvements Alternatives[1,8]

Item Description	Estimated Quantity	Unit	Unit Cost	Years	Alt 1A (Site 1)		Alt 2A (Site 2)		Alt 3A (Site 3)		Alt 4A (Site 4)		Alt 5A (Site 5)		Alt 6A (Site 6) (Combined All Sites NBS-Focused)	
					Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension
Measures to be Installed																
Onsite NBS Stormwater Detention/Retention BMPs(<5 Acres)[1]	104,544	Square Feet	$0.41	48	26,136	$514,356	13,068	$257,178	8,712	$171,452	0	$0	56,628	$1,114,439	104,544	$2,057,426
Stormwater Wetlands (5 - 25 Acres) (Years 3-10)[2]	0.0	Acres	$1,700.00	8	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Stormwater Wetlands (5 - 25 Acres) (Years 11-50)[2]	0.0	Acres	$850.00	40	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Stream Management Corridor (Years 3-10)[3]	3.77	Miles	$5,241.00	8	2.12	$88,891	0.56	$23,624	0.15	$6,162	0.21	$8,608	0.74	$30,970	3.77	$158,254
Stream Management Corridor (Years 11-50)[3]	3.77	Miles	$524.00	40	2.12	$44,437	0.56	$11,810	0.15	$3,080	0.21	$4,303	0.74	$15,482	3.77	$79,112
Major/Conveyance Drainage: Large Culverts[4]	35	Each	$365.12	48	19	$332,989	7	$122,680	0	$0	1	$17,526	8	$140,206	35.00	$613,402
Major/Conveyance Drainage: Bridges[4]	0	Each	$365.12	48	0	$0	0	$0	0	$0	0	$0	0	$0	0.00	$0
Minor/Collection Drainage: Ditches & Small Culverts[5]	6.88	Miles	$960.00	48	4.04	$186,161	0.87	$39,919	0.41	$18,711	0.14	$6,545	1.43	$65,900	6.88	$317,236
Roadways[4]	0.64	Lane Miles	$2,564.35	48	0.00	$0	0.00	$0	0.00	$0	0.12	$14,771	0.52	$64,006	0.64	$78,777
Operation & Maintenance Total (50 Years)[6,8]:						**$1,167,000**		**$455,000**		**$199,000**		**$52,000**		**$1,431,000**		**$3,304,000**
Average Annual Operation & Maintenance (AAEO&M) Costs[7,8]:						**$24,000**		**$9,000**		**$4,000**		**$1,000**		**$28,000**		**$66,000**

Price base: 2023.

[1] Unit O&M costs were obtained from the online Green Values Calculator (Center for Neighborhood Technology, n.d.), as described in "Operation and Maintenance Costs" in Section 3.4.1.

[2] Unit O&M costs obtained from the report " Estimate Unit Costs And Develop Total Life-Cycle Cost Model - Tasks 5 & 6" (Wood Environment & Infrastructure Solutions, Inc., 2019), as described in "Operation and Maintenance Costs" in Section 3.4.1, which provides the basis for applying different costs in Years 3–10 versus Years 11–52.

[3] Stream Management Corridor (SMC) unit O&M costs are based on the design team's experience managing monitoring and adaptive management for more than 20 CWA Section 404 stream restoration projects, as described in Section 3.3.1. This experience supports higher costs in Years 3–10 (adaptive management period) and lower recurring costs in Years 11–52.

[4] Unit O&M costs obtained from the County Judges' Association of Arkansas (CJAA) 2017 County Needs Report (Black, 2017), as described in "Operation and Maintenance Costs" in Section 3.4.1.

[5] Unit O&M costs were obtained in a phone conversation with engineering staff at the Louisiana Department of Transportation and Development's (LADOTD) District 5 offices in Monroe, Louisiana, as described in "Operation and Maintenance Costs" in Section 3.4.1.

[6] O&M is applied during Years 3–52 (full 50-year evaluated life after construction). Installation occurs during Years 1–2 and is not part of project life.

[7] Average Annual O&M (AAO&M) costs were calculated using the Equivalent Annual Cost (EAC) method in accordance with OMB Circular A-94 §8(a) and NRCS NWPM §501.12(C). For each project site, the stream of year-specific O&M costs (Years 3–52), reflecting higher maintenance in Years 3–10 and reduced maintenance in Years 11–50, was discounted to present value using a 3.0 percent rate and converted to a uniform annual value using: EAC = (PV × r) / [1 – (1 + r)^–n], where r = 0.03 and n = 50. This ensures full accounting of variable O&M effort over the evaluated life on an annualized basis consistent with NRCS policy.

[8] Rounding: Row-level unit costs and extended costs are shown to the full dollar for transparency. Total and Average Annual O&M Costs for each project site are rounded to the nearest $1,000, consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

Table D-7. Engineers' Opinion of Probable Costs for the Traditional-Focused Drainage Improvements Alternatives[1,11]

Item Description	Estimated Quantity	Unit	Unit Cost	Alt 1B (Site 1)		Alt 2B (Site 2)		Alt 3B (Site 3)		Alt 4B (Site 4)		Alt 5B (Site 5)		Alt 6B (Combined All Sites NBS-Focused)	
				Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension
Works of Improvement Costs															
Real Property Rights[2]															
Drainage Right-Of-Way Or Easement Acquisition (Residential Land)[3]	11.3	Acres	$14,291.00	4.7	$67,712	4.3	$61,408	0.2	$3,297	0.0	$0	2.1	$29,577	11.3	$161,994
Drainage Right-Of-Way Or Easement Acquisition (Ag Land)[3]	25.7	Acres	$3,684.00	17.5	$64,526	0.0	$0	0.5	$1,778	3.1	$11,465	4.6	$16,837	25.7	$94,606
Wetland/Floodplain Conservation Easement Acquisition[3]	0.0	Acres	$5,000.00	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0
LOD Buyout (Residential Properties) (10 properties w/structures)[3]	10	Lump Sum	Varies by Site	8	$560,846	0	$0	0	$0	0	$0	2	$242,784	10	$803,630
Relocation[4]	10	Each	$41,000.00	8	$328,000	0	$0	0	$0	0	$0	2	$82,000	10	$410,000
Utility Changes/Relocations[5]	1.0	Lump Sum		1	$120,238	1	$23,217	1	$3,854	1	$16,815	1	$35,877	5.0	$200,000
Road Decommission for Reuse (cold milling)[6]	0.3	Acres	$19,989.00	0.1	$1,218	0.0	$0	0.0	$0	0.3	$5,579	0.0	$0	0.3	$6,797
Install Alternative Access Roads/Driveways (ARDOT "Other Roads")[6]	0.6	Lane Miles	$870,000.00	0.00	$0	0.00	$0	0.00	$0	0.12	$104,400	0.52	$452,400	0.6	$556,800
Minor/Collection Drainage: Small Culvert Replacement (incl. R&D of existing pipe culvert, 20' of 24"Class 4 RCP culvert, 2 RCP FES)[6]	223.0	Each	$10,423.01	86	$896,379	37	$385,651	10	$104,230	2	$20,846	88	$917,225	223.0	$2,324,331
Major/Conveyance Drainage: Large Culverts (incl. R&D of existing pipe culvert, 2x50' of 24"Class 4 RCP culvert, 50' of 48" Class 4 RCP culvert, 200' Type A Guardrail, 4 Type 1 Guardrail Terminal, 4 Type 1 Terminal Anchor Posts)[6]	35.0	Each	$69,330.63	19	$1,317,282	7	$485,314	0	$0	1	$69,331	8	$554,645	35.0	$2,426,572
Major/Conveyance Drainage: Bridges[7]	0.0	Each	$500,000.00	0	$0	0	$0	0	$0	0	$0	0	$0	0.0	$0
Construction[2]															
Mobilization[5]	1	Lump Sum	$60,000.00	1	$20,000	1	$5,000	1	$5,000	1	$10,000	1	$20,000	5	$60,000
Construction Access Points[5]	1	Lump Sum	$40,000.00	1	$13,333	1	$3,333	1	$3,333	1	$6,667	1	$13,333	5	$40,000
Staging And Stockpile Areas[5]	1	Lump Sum	$30,000.00	1	$10,000	1	$2,500	1	$2,500	1	$5,000	1	$10,000	5	$30,000
Silt Fence[6]	8,091	Linear Feet	$3.10	7,501	$23,253	0	$0	0	$0	0	$0	590	$1,829	8,091	$25,082
Remove & Dispose Buyout Structures[5]	10	Each	$10,000.00	8	$80,000	0	$0	0	$0	0	$0	2	$20,000	10	$100,000
Major/Conveyance Drainage: Riprap-Lined Flood Control Channel															
Clearing & Grubbing[6]	37.0	Acres	$14,804.21	22.3	$329,443	4.3	$63,613	0.7	$10,559	3.1	$46,071	6.6	$98,301	37.0	$547,987
On-Site Grading Cut/Fill Balance (max haul on site = 3,000 ft)[6]	234,575	Cubic Feet	$10.44	219,845	$2,295,182	0	$0	0	$0	0	$0	14,730	$153,781	234,575	$2,448,963
Riprap Channel[5]	6,840	Linear Feet	$686.62	6,428	$4,413,593	0	$0	0	$0	0	$0	412	$282,887	6,840	$4,696,481

Item Description	Estimated Quantity	Unit	Unit Cost	Alt 1B (Site 1)		Alt 2B (Site 2)		Alt 3B (Site 3)		Alt 4B (Site 4)		Alt 5B (Site 5)		Alt 6B (Combined All Sites NBS-Focused)	
				Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension
Mulch & Seeding[6]	37.0	Acres	$2,317.71	22.3	$51,577	4.3	$9,959	0.7	$1,653	3.1	$7,213	6.6	$15,390	37.0	$85,791
Onsite NBS Stormwater Detention/Retention BMPs(<5 Acres)[8]	2.4	Acres	$143,500.00	0.6	$86,100	0.3	$43,050	0.2	$28,700	0.0	$0	1.3	$186,550	2.4	$344,400
Stormwater Wetlands (5 - 25 Acres)[5]	0.0	Acres	$14,000.00	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0
Minor/Collection Drainage: Ditches															
Reconstruct/Upgrade (incl. shaping ditch, solid sodding (2.0 sqyd/lf))[6]	17,459	Linear Feet	$19.34	13,003	$251,478	1,021	$19,746	897	$17,348	750	$14,505	1,788	$34,580	17,459	$337,657
Reconstruct/Upgrade & Reprofiling (incl. excavation (1.5 cuyd/lf), shaping ditch, solid sodding (2.0 sqyd/lf))[6]	17,491	Linear Feet	$35.02	6,928	$242,619	3,553	$124,426	1,247	$43,670	0	$0	5,763	$201,820	17,491	$612,535
Reconstruct/Upgrade, Reprofiling & Realignment (incl. excavation (2.5 cuyd/lf), shaping ditch, solid sodding (2.0 sqyd/lf))[6]	1,400	Linear Feet	$45.47	1,400	$63,658	0	$0	0	$0	0	$0	0	$0	1,400	$63,658
FEMA FIRM CLOMR & LOMR[5]	1	Lump Sum	$165,000.00	1	$99,000	0	$0	0	$0	1	$16,500	1	$49,500	1	$165,000
Works of Improvement Subtotal[10,11]					**$11,335,000**		**$1,227,000**		**$226,000**		**$334,000**		**$3,419,000**		**$16,542,000**
Works of Improvement Cost Contingency	1	Lump Sum	10.00%	1	$1,133,500	1	$122,700	1	$22,600	1	$33,400	1	$341,900	1	$1,654,200
Works of Improvement Total[10,11]					**$12,469,000**		**$1,350,000**		**$249,000**		**$367,000**		**$3,761,000**		**$18,196,000**
Engineering Costs (% of Works of Improvement Subtotal)															
Engineering - Final Design (% of Works of Improvement Subtotal)	1	Lump Sum	15.00%	1	$1,700,250	1	$184,050	1	$33,900	1	$50,100	1	$512,850	1	$2,481,300
Construction Oversight & Quality Control (% of Works of Improvement Subtotal)	1	Lump Sum	8.50%	1	$963,475	1	$104,295	1	$19,210	1	$28,390	1	$290,615	1	$1,406,070
Engineering Total[10,11]					**$2,664,000**		**$288,000**		**$53,000**		**$78,000**		**$803,000**		**$3,887,000**
Other Costs of Installation															
Technical Assistance (NRCS - % of Works of Improvement Subtotal)	1	Lump Sum	0.05%	1	$5,668	1	$614	1	$113	1	$167	1	$1,710	1	$8,271
Permitting[9]	1	Lump Sum	$0	1	$41,250	1	$3,750	1	$3,750	1	$3,750	1	$22,500	1	$75,000
Project Administration (NRCS - % of Works of Improvement Subtotal)	1	Lump Sum	1.00%	1	$113,350	1	$12,270	1	$2,260	1	$3,340	1	$34,190	1	$165,420
Project Administration (Sponsor - % of Works of Improvement Subtotal)	1	Lump Sum	0.50%	1	$56,675	1	$6,135	1	$1,130	1	$1,670	1	$17,095	1	$82,710
Other Costs of Installation Total[10,11]					**$217,000**		**$23,000**		**$7,000**		**$9,000**		**$75,000**		**$331,000**
Total Installation Cost[10,11]					**$15,350,000**		**$1,661,000**		**$309,000**		**$454,000**		**$4,639,000**		**$22,414,000**

Price base: 2023. All non-2023 prices were converted to 2023 prices using the U.S. Bureau of Labor Statistics online CPI Inflation Calculator (BLS, n.d.).
[1] Installation costs include three categories: 1) Works of Improvement – construction, real property rights, relocation, plus contingency; 2) Engineering – final design and construction oversight; and 3) Other Costs of Installation – Technical Assistance (installation phase), Project Administration, and Permitting. All three categories are part of the total installation cost base consistent with NRCS NWPM Fig 505D-1.
[2] Costs of Real Property Rights and Construction for Works of Improvement are defined by Sections 501.80.A.2. and 501.80.A.14, respectively of 390 M 501 Subpart F (5th edition, amended June 2024).
[3] Bare land costs for easements/ROWs and property (whole parcel/lot and structures) buyout cost estimation methods are presented under "Costs for Land for Easements/ROW and Buyouts" in Section 3.4.1.

[4] Residential relocation and replacement of publicly owned facilities costs were estimated in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (49 CFR Part 24) and NRCS NWPM § 501.80A.14.g. For planning-level purposes, a maximum standard residential relocation cost of $41,000 per dwelling was applied, consistent with 49 CFR § 24.401. Functional replacement of the City's vehicle maintenance facility was estimated separately under 49 CFR § 24.108 and includes allowances for demolition, site preparation, design and permits, and contingency.
[5] Unit prices were not identified through extensive online data searches and were obtained from recent EOPCs developed by design engineering team for similar projects within the last five years and adjusted to 2023 prices.
[6] Costs taken from ARDOT Program Management Division 2023 "Weighted Average Unit Prices" (Arkansas Department of Transportation, 2023a) and "Estimated Costs Per Mile" (Arkansas Department of Transportation, 2023b).
[7] Construction costs for new and replacement small bridges were obtained from the County Judges' Association of Arkansas (CJAA) 2017 County Needs Report (Black, 2017) as described in "Construction Costs" in Section 3.4.1.
[8] Unit costs for construction of small (less than 5 acres) onsite NBS stormwater detention/retention were obtained from the USEPA's online Stormwater Best Management Practice – Bioretention (Rain Garden) Fact Sheet (U.S. Environmental Protection Agency, 2021).
[9] Assumes a CWA Section 404 Nationwide Permit will be required. Costs are based on design engineering team experience on similar projects.
[10] Works of Improvement in this table include construction (all physical works, mobilization, and contingency), Real Property Rights (drainage right-of-way/easements, wetland/floodplain easements, and buyouts), and relocation costs, consistent with NRCS policy (NWPM §501.80A.14). Engineering Costs (Final Design and Construction Oversight) and Other Costs of Installation (Technical Assistance, Permitting, and NRCS/Sponsor Project Administration) are shown separately. Total Installation Cost is the sum of all three categories.
[11] Line item costs are reported to the nearest dollar for traceability to published sources and engineering estimates. Subtotals and totals are rounded to the nearest $100 (or $1,000 where appropriate) in accordance with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance requiring values be reported at a practical level of significance.

Table D-8. Operations and Maintenance Costs for Alternative 6B (Traditional-Focused Drainage Improvements)[1,8]

Item Description	Estimated Quantity	Unit	Unit Cost	Years	Alt 1B (Site 1)		Alt 2B (Site 2)		Alt 3B (Site 3)		Alt 4B (Site 4)		Alt 5B (Site 5)		Alt 6B (Combined All Sites)	
					Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension	Est Qty.	Extension
Measures to be Installed																
Onsite NBS Stormwater Detention/Retention BMPs(<5 Acres)[1]	104,544	Square Feet	$0.41	48	26,136	$514,356	13,068	$257,178	8,712	$171,452	0	$0	56,628	$1,114,439	104,544	$2,057,426
Stormwater Wetlands (5 - 25 Acres) (Years 3-10)[2]	0.0	Acres	$1,700.00	8	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0
Stormwater Wetlands (5 - 25 Acres) (Years 11-50)[2]	0.0	Acres	$850.00	40	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0	0.0	$0
Riprap-Lined Flood Control Channel[3]	1.30	Miles	$20,909.00	48	1.22	$1,221,846	0.00	$0	0.00	$0	0.00	$0	0.08	$78,314	1.30	$1,300,160
Major/Conveyance Drainage: Large Culverts[4]	35	Each	$365.12	48	19	$332,989	7	$122,680	0	$0	1	$17,526	8	$140,206	35	$613,402
Major/Conveyance Drainage: Bridges[4]	0	Each	$365.12	48	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Minor/Collection Drainage: Ditches & Small Culverts[5]	6.88	Miles	$960.00	48	4.04	$186,161	0.87	$39,919	0.41	$18,711	0.14	$6,545	1.43	$65,900	6.88	$317,236
Roadways[4]	0.64	Lane Miles	$2,564.35	48	0.00	$0	0.00	$0	0.00	$0	0.12	$14,771	0.52	$64,006	0.64	$78,777
Operation & Maintenance Total (50 Years)[6,8]:						**$2,255,000**		**$420,000**		**$190,000**		**$39,000**		**$1,463,000**		**$4,367,000**
Average Annual Operation & Maintenance (AAEO&M) Costs[7,8]:						**$43,000**		**$8,000**		**$4,000**		**$1,000**		**$28,000**		**$84,000**

Price base: 2023.

[1] Unit O&M costs were obtained from the online Green Values Calculator (Center for Neighborhood Technology, n.d.), as described in "Operation and Maintenance Costs" in Section 3.4.1.
[2] Unit O&M costs obtained from the report " Estimate Unit Costs And Develop Total Life-Cycle Cost Model - Tasks 5 & 6" (Wood Environment & Infrastructure Solutions, Inc., 2019), as described in "Operation and Maintenance Costs" in Section 3.4.1, which provides the basis for applying different costs in Years 3–10 versus Years 11–52.
[3] Stream Management Corridor (SMC) unit O&M costs are based on the design team's experience managing monitoring and adaptive management for more than 20 CWA Section 404 stream restoration projects, as described in Section 3.3.1. This experience supports higher costs in Years 3–10 (adaptive management period) and lower recurring costs in Years 11–52.
[4] Unit O&M costs obtained from the County Judges' Association of Arkansas (CJAA) 2017 County Needs Report (Black, 2017), as described in "Operation and Maintenance Costs" in Section 3.4.1.
[5] Unit O&M costs were obtained in a phone conversation with engineering staff at the Louisiana Department of Transportation and Development's (LADOTD) District 5 offices in Monroe, Louisiana, as described in "Operation and Maintenance Costs" in Section 3.4.1.
[6] O&M is applied during Years 3–52 (full 50-year evaluated life after construction). Installation occurs during Years 1–2 and is not part of project life.
[7] Average Annual O&M (AAO&M) costs were calculated using the Equivalent Annual Cost (EAC) method in accordance with OMB Circular A-94 §8(a) and NRCS NWPM §501.12(C). For each project site, the stream of year-specific O&M costs (Years 3–52), reflecting higher maintenance in Years 3–10 and reduced maintenance in Years 11–50, was discounted to present value using a 3.0 percent rate and converted to a uniform annual value using: EAC = (PV × r) / [1 – (1 + r)^–n], where r = 0.03 and n = 50. This ensures full accounting of variable O&M effort over the evaluated life on an annualized basis consistent with NRCS policy.
[8] Rounding: Row-level unit costs and extended costs are shown to the full dollar for transparency. Total and Average Annual O&M Costs for each project site are rounded to the nearest $1,000, consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

4 Economics

4.1 Introduction and Assumptions and Methodology Overview

This section presents the economic analysis of the proposed alternatives in accordance with NRCS policy (390 NWPM §500.4(E)), PR&G, Chapter 1 § 2, DM 9500-13 § 9, Part 611 National Water Resources Handbook for Economics, and federal guidance under OMB Circulars A-94 and A-4. The purpose of this section is to evaluate the cost-efficiency of each alternative by comparing the expected costs with the monetized benefits of flood damage reduction and environmental services. The analysis is structured to:

- Document baseline flood damages without project (Section 4.2),
- Identify project costs, including installation and O&M (Section 4.3),
- Estimate flood damage reduction and environmental services benefits (Section 4.4),
- Present results using the NRCS annualization method (Section 4.5),
- Identify the final array of alternatives (Section 4.6),
- Discuss the risk and uncertainty associated with the economic analysis (Section 4.7), and
- Summarize the economic findings (Section 4.8).

The economic evaluation follows NRCS requirements for watershed projects. EAD were developed as the primary basis for quantifying flood damage reduction benefits across the No Action/FWOFI Alternative and all Action Alternatives. EAD represents the average annualized value of flood damages across a range of event probabilities and provides a consistent metric for comparing long term flood related economic risk among Alternatives. As documented in Section 4.2, EAD estimates were derived using FEMA Hazus flood loss estimation methods applied to HEC RAS modeled flood depths and a consistent structure inventory. The resulting EAD differences among Alternatives are used to calculate avoided damages and support the benefit-cost evaluation presented in later sections.

The Project life (evaluated life) is defined as 50 years after construction is complete, consistent with NRCS NWPM §501.12(C). The implementation phase (design, permitting, and construction) occurs over 2 years and is not part of Project life. Together, these phases define a 52-year period of analysis (2 years implementation + 50 years Project life).

A discount rate of 3.25% is applied to all costs and benefits, consistent with the direction of the NRCS Arkansas State Office (USACE Memorandum for Planning Community of Practice, October 9, 2024; see Appendix D, Attachment C). Installation costs are annualized over the 50-year Project life, and O&M costs are applied during Years 3–52, ensuring a full accounting of costs across the evaluated life.

All monetary and numerical values presented in this report have been rounded to a practical level of significance consistent with NRCS and OMB guidance. NRCS NWPM §501.44A(11)(a) directs that economic and structural data be rounded to a practical level of significance, while NWPH §601.30(B)and OMB Circular A-94 §8 emphasize reporting results consistent with the precision of available data. Accordingly, detailed cost tables (Table D-5 through Table D-8)

retain unrounded line-item detail for transparency, but subtotals and totals are rounded to the nearest $100. Site-level and summary economic tables (e.g., Tables D-15 through D-20) are rounded to the nearest $1,000. BCRs are rounded to two decimal places. This approach provides consistency across the Plan-EA, Appendix D, and the OMB Fact Sheet and avoids the appearance of false precision in large-scale economic results.

Monetized benefits are limited to flood damage reduction (expected annual damages avoided) and ecosystem services benefits. Social and aesthetic benefits are excluded from the monetized economic evaluation. Social and aesthetic outcomes are instead described qualitatively in the Plan-EA (Section 5).

4.2 Flood Damages

Flood conditions were modeled for existing and with-Project conditions using HEC-RAS for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year flood events in the five Project Sites (subwatersheds) that comprise the Study Area, as described in Section 3.1. Flood damages were assessed using EAD, which represents the average annualized value of flood-related damages over a range of flood event probabilities and provides a consistent basis for comparing relative economic effects among Alternatives. When considered alongside engineering feasibility and environmental and cultural resource effects, the EAD results provide a comparative measure of how each Alternative influences long-term flood-related economic risk within the Study Area.

EAD estimates were developed using FEMA's Hazus flood loss estimation methodology. Hazus integrates flood depth grids with structure inventory data and standardized depth-damage functions to estimate direct economic losses associated with flooding. For this analysis, Hazus was applied consistently across the No Action/FWOFI Alternative and all Action Alternatives to ensure comparability of results.

The analysis focuses on direct structural damages to residential and non-residential buildings, structure contents, and vehicle damages. Indirect economic effects, such as broader regional economic impacts, social costs, and long-term market responses, were not quantified due to the planning-level nature of the analysis and data limitations. As a result, estimated damages should be interpreted as conservative indicators of relative economic risk.

Key assumptions underlying the analysis include:

- Flood modeling inputs and depth grids used in Hazus are representative of existing and projected flood conditions under each Alternative.
- Under the FWOFI/No Action Alternative, flood conditions are assumed to be a continuation of the No Action Alternative, as described in Section 2.
- Structure inventories, occupancy classifications, and replacement cost values are based on available data and standard Hazus defaults where site-specific information was not available.
- Depth-damage functions from Hazus are applicable to the structure types present in the Study Area.
- All Alternatives were evaluated using the same modeling framework, assumptions, and data sources to maintain internal consistency.

Hazus outputs are subject to uncertainty related to model assumptions, input data quality, and generalized damage functions. However, Hazus is a nationally recognized tool developed by FEMA for flood loss estimation, and its use is appropriate for planning-level economic evaluations. EAD provides a consistent and widely accepted metric for comparing project

alternatives by accounting for both the likelihood and severity of flood events and the resulting damages to exposed structures. Differences in EAD among the Alternatives are therefore considered a reasonable basis for comparing relative long-term economic effects.

The results of the economic analysis are presented in subsequent sections and are intended to be considered alongside engineering, environmental, and cultural resource evaluations when assessing the overall merits of each Alternative.

4.2.1 Affected Properties and Roadways Inventory

As described in Section 3.1, flood conditions were modeled for existing and with-Project conditions using HEC-RAS for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year flood events in the five Project Sites (Subwatersheds) that comprise the Study Area. Figure D-1 through Figure D-4 show the five Project Sites for the Cities of Wilmot and Parkdale, the FEMA 100-year and 500-year floodplain (from either FEMA BLE or FIRM data), and the Flood Problem Areas identified in the scoping process.

To identify affected properties within the Study Area, structure data were obtained from the USACE NSI database (U.S. Army Corps of Engineers, 2022). This data was compared to the water surface elevation for each modeled flood event to identify structures that would be impacted. The NSI data provided values in 2021 dollars, so structure, content, and vehicle values were converted to 2023 dollars.

For each structure and flood event, inundation depth was calculated relative to the first finished floor elevation (FFE**)**. FFE was computed as the sum of ground elevation and foundation height. Flood depth above FFE was calculated as:

$$d = \text{WSE}_{event} - \text{FFE}$$

where:

- d = inundation depth
- WSE_{event} = Water Surface Elevation for each modeled storm event
- FFE = first finished floor elevation

Only positive depths above FFE were considered damaging; events producing no inundation above FFE resulted in zero flood damage for that structure and its contents. Figure D-25 through Figure D-31 in Section 3.1.1 depict inundation levels for each modeled storm event under the No Action Alternative and Figure D-32 through Figure D-38 show inundation levels for the Action Alternatives. Table D-1 in Section 3.1.1 summarizes the acres of inundation under the No Action Alternative, and Table D-2 summarizes the acres of inundation for the Action Alternatives and the net reduction in acres of inundation relative to the No Action Alternative. Table D-9 summarizes the number of impacted structures for the 100-year storm event and the reduction in the number of inundated structures for the Action Alternatives. Only the results for the 100-year flood event are provided in this table as an example, and this event was selected from the seven modeled storm events because the intended design of the stormwater improvements is for the 100-year event.

Table D-9. Reduction of Inundated Structures Under the Action Alternatives for the 100-year Storm Event[1, 2, 3]

Site Name	Alternatives 1A and 1B (Site 1)	Alternatives 2A and 2B (Site 2)	Alternatives 3A and 3B (Site 3)	Alternatives 4A and 4B (Site 4)	Alternatives 5A and 5B (Site 5)	Alternative 6A and 6B (Full Study Area)
No Action Alternative						
Residential	20	2	1	1	5	29
Commercial	0	0	0	0	0	0
Other	0	0	0	0	1	1
Action Alternatives						
Residential	2	0	0	1	0	3
Commercial	0	0	0	0	0	0
Other	0	0	0	0	0	0
Reduction in Inundated Structures under the Action Alternatives[4]						
Residential	18	2	1	0	5	26
Commercial	0	0	0	0	0	0
Other	0	0	0	0	1	1

[1] Structure inundation determined by spatial overlap of modeled flood extents with structure footprint data.

[2] Results are based on hydraulic modeling and do not account for future development or changes in land use.

[3] Structure counts reflect modeled inundation and do not indicate flood damage or depth of inundation.

[4] Reduction represents the difference between the No Action Alternative and proposed conditions under the Action Alternatives modeled for the 1-percent annual chance (100-year) flood event.

4.2.2 Flood Damage Calculation Methodology

Depth-Damage Functions

After affected properties were identified for each modeled flood event, event-based flood damages were estimated using occupancy-specific depth–damage functions from the FEMA Hazus Flood Model. Hazus depth–damage relationships provide nationally consistent estimates of the percentage of structure and contents damage as a function of flood depth above the first finished floor and are widely used in federal flood risk assessments.

For each structure and event, the appropriate Hazus depth–damage curve for structure and content damages was selected based on occupancy type and building characteristics (e.g., residential, one story, no basement). Where event depths fell between tabulated depth points, damage percentages were obtained through linear interpolation.

Vehicle damage resulting from flooding was evaluated using a simplified depth-damage approach based on typical passenger vehicle construction and commonly accepted loss thresholds. Vehicles exposed to flood depths of 6 to 12 inches were assigned 25 percent

damage, reflecting partial impacts to undercarriage components, braking systems, and increased corrosion risk without assumed interior inundation. Vehicles exposed to flood depths of 12 inches or greater were assigned 100 percent damage (total loss). Flooding at or above this depth is likely to reach the door sill of most passenger vehicles, creating a high probability of water intrusion into the cabin and damage to interior materials and electronic systems. Such conditions are widely treated as constructive total loss due to safety, reliability, and remediation concerns.

Potential roadway impacts and associated costs were initially evaluated as a part of the economic analysis. However, the estimated costs were considered too insignificant to include in the broader economic analysis, and therefore road damages are not included further in this evaluation. Despite this, roadway effects should not be fully ignored. Impacts of damaged and flooded roadways can give rise to important non-monetized considerations. These include public safety issues such as increased travel time, traffic delays, and the potential for delayed emergency response times.

Event Damage Calculation

For each structure and flood event, dollar damages were calculated as:

$$D_{event,structure} = f_s(d) \cdot V_s + f_c(d) \cdot V_c + f_v(d) \cdot V_v$$

where:

- $f_s(d)$= Hazus structure damage percentage at depth d
- $f_c(d)$= Hazus contents damage percentage at depth d
- $f_v(d)$= Vehicle damage percentage at depth d
- V_s= structure replacement value
- V_c= contents replacement value
- V_v= vehicles replacement value

Event damages were summed across all structures, contents, and vehicles to produce a total event damage for each modeled flood frequency for the FWOFI/No Action Alternative and each Action Alternative.

Expected Annual Damage (EAD)

EAD was calculated by integrating discrete event damages over the annual exceedance probability (AEP) curve using trapezoidal approximation. Event probabilities were defined as the inverse of return period ($p = 1/T$). An anchor point of zero damage at an annual exceedance probability of 1.0 was assumed.

EAD was computed as:

$$\text{EAD} \approx \sum_{i=0}^{n-1} \left(\frac{D_i + D_{i+1}}{2}\right) (p_i - p_{i+1})$$

where:

- $D_i$and $D_{i+1}$are damages for consecutive events, and
- $p_i$and $p_{i+1}$are their corresponding AEPs.

This calculation was performed separately for the FWOFI/No Action Alternative and each Action Alternative.

Flood Damage Reduction Benefits

Average Annual Flood Damage Reduction Benefits (AAFDRB) were calculated as:

$$\text{AAFDRB} = \text{EAD}_{Without\ Project} - \text{EAD}_{With\ Project}$$

AAFDRB represents the average annual reduction in flood damages attributable to each Action Alternative and constitutes the flood-risk-reduction component of total annual benefits used in the economic comparison of Alternatives. The AAFDRB values represent constant-dollar, undiscounted annual damage estimates. AAFDRB is assumed to begin upon completion of construction. Accordingly, the annual damage reduction benefit stream was modeled to occur over 50 operating years (Years 3–52) and was discounted using a 3.25 percent real discount rate, with a two-year implementation lag applied to reflect the construction period. The resulting annualized discounted benefits are summarized in Table D-14 as the Annual Equivalent AAFDRB.

4.2.3 Estimated EAD Results

Estimated EAD values vary among Alternatives based on differences in flood depth, areal extent of inundation, and the number and type of exposed structures. The FWOFI/No Action Alternative reflects existing flood risk conditions and serves as the baseline for comparison. Action Alternatives generally result in changes to EAD by altering flood exposure, reducing vulnerability of affected structures, or modifying flood behavior within the Study Area.

Alternatives that result in lower EAD values indicate reduced long-term flood-related economic risk and represent economic benefits in the form of avoided flood damages. Conversely, Alternatives associated with higher EAD values reflect increased long-term exposure to flood-related damages relative to the FWOFI/No Action Alternative.

The EAD results for each Alternative are summarized in Table D-10. Differences among Alternatives are interpreted as planning-level indicators of relative economic performance rather than precise predictions of future flood losses. The EAD values represent constant-dollar, undiscounted annual damage estimates. The discounted Annual Equivalent EAD over the 50-year project life at 3.00 percent for each Alternative is summarized in economic Table 5 (Table D-19) in Section 4.8.

Table D-10, Summary of Expected Annual Damages (EAD) for Each Alternative[1, 2, 3]

Alternative	EAD Before Mitigation (No Action Alternative) ($)	EAD After Mitigation (With Project) ($)
Alternative 1A	$526,000	$7,000
Alternative 2A	$26,000	$1,000
Alternative 3A	$61,000	$3,000
Alternative 4A	$2,000	$1,000
Alternative 5A	$64,000	$3,000
Alternative 6A[4]	$679,000	$15,000

Alternative	EAD Before Mitigation (No Action Alternative) ($)	EAD After Mitigation (With Project) ($)
Alternative 1B	$526,000	$7,000
Alternative 2B	$26,000	$1,000
Alternative 3B	$61,000	$3,000
Alternative 4B	$2,000	$1,000
Alternative 5B	$64,000	$3,000
Alternative 6B[5]	$679,000	$15,000

[1] Price base: 2023. NSI data provided values in 2021 dollars, so structure, content, and vehicle values were converted to constant 2023 dollars using the U.S. Bureau of Labor Statistics CPI (2021 to 2023 factor = 1.1246).

[2] Rounding: Values are rounded to the nearest $1,000, consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

[3] EAD estimates represent modeled potential losses and do not reflect actual or historical flood damages.

[4] Alternative 6A (NBS-focused combined) equals the summation of the values from Alternatives 1A through 5A.

[5] Alternative 6B (Traditional-focused combined) equals the summation of the values from Alternatives 1B through 5B.

4.2.4 Impacts of Regional Disparities in Housing Costs on Damage Reduction Benefits Used in Benefit-Cost Analysis

Consideration should be given to the flood damage reduction benefit values in BCA in areas with less expensive housing because these ratios tend to be lower compared to similar projects in areas with more expensive housing. This discrepancy arises because the economic benefits derived from projects in higher-cost areas are often greater, leading to higher BCRs. Therefore, it's important to account for these differences to ensure fair and effective allocation of resources across various regions. It should be noted that property values in the Cities of Wilmot and Parkdale are significantly lower than the national average. According to niche.com (Niche.com, n.d.), the median home value in Wilmot and Parkdale are $61,500 and $37,500, respectively, while in Little Rock, Arkansas, a nearby and relatively prosperous city, the median home value is $239,000 according to realtor.com (Realtor.com, n.d.-c). However, the design, permitting, and construction costs for the installation of the Works of Improvement in Wilmot and Parkdale would be expected to be very similar to those for a project in Little Rock. As such, in the development of the BCR for the Project, the value of the benefits for flood risk reduction is expected to be much less in Wilmot and Parkdale than if the same project were constructed in a larger city with a stronger economy, like Little Rock, because the values of the properties and their associated structures are much lower. This will result in a corresponding decrease in the BCR for the same project in Wilmot and Parkdale compared to Little Rock, which should be taken into consideration when qualitatively assessing the ability of the Project to achieve a BCR of 1.0 or higher.

4.3 Costs of Flood Damage Mitigation

4.3.1 Costing Methodology

The EOPCs and O&M costs were developed for all 12 Action Alternatives, as detailed in Section 3.3, and are shown in Table D-5 and Table D-6, respectively, for the NBS-focused alternatives

and Table D-7 and Table D-8, respectively, for the traditional-focused alternatives. As described in Section 3.4.1, GIS and CADD analysis of the data geospatial and engineering datasets were used to develop the quantities and units of the various components in the EOPCs. Multiple sources were required to estimate unit prices for the EOPCs and are described in Section 3.4.1 and identified for every line item cost in both the EOPCs and O&M Costs shown for each Alternative in Table D-5 through Table D-8, as described at the beginning of this paragraph. The unit costs utilized were obtained from online sources wherever available or, where not, from EOPCs developed by the design engineering team for multiple similar projects in similar settings. Wherever necessary, prices were converted to 2023 prices using the BLS online Consumer Price Index (CPI) Inflation Calculator (U.S. Bureau of Labor Statistics, n.d.).

In accordance with NRCS policy (390 NWPM §501.12(C)), the Project life (evaluated life) is 50 years after construction is complete. Installation costs (design, permitting, real property rights, construction, and associated administrative/technical assistance) occur during the 2-year implementation period and are annualized over the 50-year project life at 3.00 percent, as instructed by the NRCS Arkansas State Offices and promulgated in the USACE October 9, 2024, Memorandum for Planning Community of Practice (Attachment C). O&M costs are applied during Years 3–52 (full 50-year evaluated life) and are discounted and annualized using the same rate. The official NRCS evaluation follows OMB Circular A-4, with undiscounted constant-dollar cash flows presented in Appendix D, Tables 1 through 12.

4.4 Benefits

The benefits evaluated for this project are limited to two categories:

- **Average Annual Flood Damage Reduction Benefits (AAFDRB):** monetized as avoided damages to structures, contents, and vehicles based on the EAD calculated from an incremental analysis of storm events ranging from 2 to 500-year storms, utilizing depth-damage percents as determined by Hazus. Flood damages and resulting EAD values are described in Section 4.2.
- **Annual Ecosystem Services Benefits (AESB):** monetized using ecosystem service values from FEMA's *Ecosystem Service Value Updates* technical manual. These values represent federally standardized, peer-reviewed coefficients for the annual per-acre economic value of ecological functions associated with riparian areas and inland wetlands.

The following subsections describe these benefit categories in detail.

4.4.1 Standard Flood Mitigation Benefits

The AAFDRB were calculated as the difference between the EAD of the No Action/FWOFI Alternative and each Action Alternative. EAD values represent the long-term average annual flood damages expected across the full range of modeled flood frequencies and associated AEPs. For each Alternative, event-level flood damages were integrated using trapezoidal probability-weighting to produce an annualized damage estimate. The resulting AAFDRB values quantify the average annual flood damages avoided due to implementation of the Project for each Alternative compared to the No Action/FWOFI Alternative and represent the primary monetized flood-risk-reduction benefit used in the economic evaluation. These benefits reflect avoided damages to structures, contents, and vehicles and are reported in constant dollars consistent with the Project price base. The AAFDRB for each Alternative is summarized in Table D-11.

The AAFDRB values represent constant-dollar, undiscounted annual damage estimates. AAFDRB is assumed to begin upon completion of construction. Accordingly, the annual damage reduction benefit stream was modeled to occur over 50 operating years (Years 3–52) and was discounted using a 3.25 percent real discount rate**,** with a two-year implementation lag applied to reflect the construction period. The resulting annualized discounted benefits are summarized in Table D-14 as the Annual Equivalent AAFDRB.

Table D-11. Average Annual Flood Damage Reduction Benefits (AAFDRB) for Each Alternative

Alternative[1]	EAD Before Mitigation (No Action Alternative) ($)[2, 3]	EAD After Mitigation (With Project) ($)[2, 3,]	AAFDRB ($)[2, 3, 4, 5]
Alternative 1A	$526,000	$7,000	$519,000
Alternative 2A	$26,000	$1,000	$25,000
Alternative 3A	$61,000	$3,000	$58,000
Alternative 4A	$2,000	$1,000	$1,000
Alternative 5A	$64,000	$3,000	$61,000
Alternative 6A[6]	$679,000	$15,000	$664,000
Alternative 1B	$526,000	$7,000	$519,000
Alternative 2B	$26,000	$1,000	$25,000
Alternative 3B	$61,000	$3,000	$58,000
Alternative 4B	$2,000	$1,000	$1,000
Alternative 5B	$64,000	$3,000	$61,000
Alternative 6B[7]	$679,000	$15,000	$664,000

[1] Refer to Sections 3.2 and 3.3 for a complete description of the Alternatives.

[2] Price base: 2023. NSI data provided values in 2021 dollars, so structure, content, and vehicle values were converted to constant 2023 dollars using the U.S. Bureau of Labor Statistics CPI (2021 to 2023 factor = 1.1246).

[3] Rounding: Values are rounded to the nearest $1,000, consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

[4] Benefits represent modeled reductions in potential flood damages and do not reflect actual or historical flood losses.

[5] Values represent constant-dollar, undiscounted annual benefit estimates. The annualized discounted benefits are summarized in Table D-14 as the Annual Equivalent AAFDRB.

[6] Alternative 6A (NBS-focused combined) equals the summation of the values from Alternatives 1A through 5A.

[7] Alternative 6B (Traditional-focused combined) equals the summation of the values from Alternatives 1B through 5B.

4.4.2 Ecosystem Services Benefits

Ecosystem-service benefits were monetized using FEMA's *Ecosystem Service Value Updates* technical manual (2022), which provides standardized, peer-reviewed, federally recognized per-acre annual valuation coefficients for ecological land-cover types. The FEMA technical reference was used solely as a source of published valuation coefficients. FEMA's Benefit–Cost Analysis (BCA) Toolkit software was not used in this analysis. Instead, the documented per-acre annual values from the technical reference were applied directly to the net increase in qualifying ecological acreage associated with each Alternative.

FEMA's *Ecosystem Service Value Updates* (2022) was developed in coordination with federal economists, the Office of Management and Budget (OMB), and the USACE to support consistent valuation of non-market environmental benefits in hazard-mitigation and watershed-planning analyses. The coefficients provide nationally applicable estimates for ecological land-cover types, including Riparian Areas. The coefficients represent the monetized annual value of ecological functions such as water filtration, erosion control, nutrient cycling, carbon storage, and habitat provision. These values are additive to, and do not overlap with, the structural flood-damage-reduction benefits quantified separately in Section 4.4.1. They represent the most current values authorized for use in federal analyses of environmental benefits associated with nature-based solutions.

Consistent with NRCS OMB Circulars A-4 and A-94, ecosystem-service values were expressed in constant 2023 dollars using the project's established price base. To maintain consistency with the Project price base, FEMA's published ecosystem-service coefficients were adjusted to constant 2023 dollars prior to application in the economic analysis. All benefits and costs presented in this evaluation are therefore expressed in 2023 dollars to ensure internal consistency.

One ecosystem-service land-use category from FEMA's technical manual are relevant to this Project. AESB were applied only to the ecological portions of the Project's NBS features associated with the following category:

- **Riparian Areas**, valued at $37,199 per acre per year in FEMA's technical reference prior to price-base adjustment. New riparian acreage is created through:
    - SMCs, including restored riparian vegetation, benches, and naturalized channels within earthen conveyance corridors; and
    - Bioretention cells and vegetated best management practices (BMPs) located upstream of SMCs.

The hydraulic conveyance capacity of these features, the component responsible for structural flood-damage reduction, is evaluated separately in Section 4.4.1. Ecosystem-service values were applied only to vegetated and soil-based ecological zones to ensure that ecological benefits remain distinct from flood-risk-reduction benefits. Accordingly, two separate monetized benefit streams were maintained:

1. **Flood-Damage-Reduction Benefits**—avoided damages to structures, contents, vehicles, and roads (Section 4.4.1); and
2. **Ecosystem-Service Benefits**—ecological functions provided by restored riparian and wetland areas (this section).

The ecosystem-service coefficients explicitly exclude hazard risk reduction to prevent overlap with flood-damage-reduction benefits. As documented in Section 5 of FEMA's *Ecosystem Service Value Updates* (2022), these values represent ecological co-benefits that are separate from, and additional to, hazard-mitigation benefits quantified elsewhere. This ensures that no double-counting or triple-counting of benefits occurs. FEMA's Ecosystem Service Value Updates (2022) supersede the underlying Rein (1999) study previously embedded in FEMA BCA Toolkit outputs, which combined flood-control and erosion-control values; the FEMA (2022) coefficients applied here were structured to remove hazard-mitigation components. FEMA's technical reference does not provide a sub-component breakdown sufficient to separately quantify and remove any residual flood-hazard-reduction element referenced in FEMA (2022) Section 5.1's description of composite riparian values. Ecosystem-service values were applied only to the vegetated and soil-based ecological zones of the Project's NBS features, excluding the engineered conveyance components responsible for structural flood-damage reduction, and

were applied to the net increase in qualifying riparian and wetland acreage under each Action Alternative relative to No Action.

For each Alternative, the net increase in qualifying riparian acreage was calculated, and the resulting annual AESB values were carried forward into the economic evaluation. The riparian forest acreages used in the AESB calculations incorporate the net increase in riparian forest cover, where already existing riparian forest cover or riparian forest loss is removed from the total acreage, avoiding double counting of benefits for already existing forested areas and accounting for the cost of lost riparian forest cover. For Alternative 4B and, by extension, Alternative 6B, the net change in qualifying Riparian acreage in Project Site 4 is negative. Unlike the NBS-Focused Alternatives, the Traditional-Focused design for Project Site 4 relies on rip-rap channel armoring rather than restored riparian vegetation, resulting in the removal of approximately 1.2 acres of existing riparian forest immediately adjacent to the channel, yielding a net decrease of 1.2 acres of qualifying Riparian acreage relative to No Action. Consistent with the methodology applied throughout this analysis, FEMA's Ecosystem Service Value Updates (2022) Riparian Areas coefficient was applied to this net change using the same before-and-after acreage accounting used to calculate net increases elsewhere in this table; because the net change here is negative, the resulting AESB for Alternative 4B is likewise negative, representing a loss of ecosystem-service value rather than a gain. This negative value carries forward into Alternative 6B's combined total and into the AAB and NMB calculations for both alternatives in Table D-14, consistent with the requirement to identify and measure both costs and benefits under OMB Circular A-4 §7(a–b).

These annual benefits, adjusted to constant 2023 dollars from 2021 dollars using the U.S. Bureau of Labor Statistics Consumer Price Index (factor = 1.1246), were incorporated directly into the Average Annual Benefits (AAB) calculations presented in subsequent tables. The adjusted values—$41,834 per acre for Riparian Areas and $9,189 per acre for Inland Wetlands—were applied to the net restored or constructed ecological acreage under each Alternative. This approach satisfies NRCS requirements for monetary valuation of environmental benefits while maintaining compliance with OMB Circular A-4 §§ 7(a–b) regarding transparency and avoidance of double counting. Table D-12 summarizes the AESB for each Action Alternative.

No additional social or qualitative co-benefits were monetized beyond those embedded in the standardized coefficients. The methodology complies with OMB Circulars A-4 and A-94 and NRCS DM 9500-013 § 7.b.iv, which authorize ecosystem-service valuation for nature-based solutions where ecological functions are distinct from primary flood-risk-reduction purposes.

Table D-12. Expected Annual Ecosystem Services Benefits for Each Alternative[1]

Alternative[2]	Total Project Site Acreage (Acres)	Ecosystem Service Land Use Category[3] — Riparian Areas		Expected Annual Ecosystem Services Benefits[1,5,8] ($)
		Net Increase[4] (acres)	% of Project Site(s) (%)	
Alternative 1A	317.7	22.2	6.99%	**$929,000**
Alternative 2A	163.8	4.2	2.56%	**$176,000**
Alternative 3A	9.3	0.7	7.53%	**$29,000**
Alternative 4A	115.4	0.8	0.70%	**$34,000**

Alternative[2]	Total Project Site Acreage (Acres)	Ecosystem Service Land Use Category[3] Riparian Areas		Expected Annual Ecosystem Services Benefits[1,5,8] ($)
		Net Increase[4] (acres)	% of Project Site(s) (%)	
Alternative 5A	53.2	5.0	9.47%	**$211,000**
Alternative 6A[6]	659.4	33.0	5.00%	**$1,379,000**
Alternative 1B	317.7	0.6	0.19%	**$25,000**
Alternative 2B	163.8	0.3	0.18%	**$13,000**
Alternative 3B	9.3	0.2	2.15%	**$8,000**
Alternative 4B	115.4	-1.2	-1.04%	**($-50,000)**
Alternative 5B	53.2	1.0	1.80%	**$40,000**
Alternative 6B[7]	659.4	0.9	0.13%	**$36,000**

[1] Expected AESB are calculated based on values from FEMA's Ecosystem Service Value Updates technical manual (2022), which supersede the underlying Rein (1999) study previously embedded in FEMA BCA Toolkit outputs, and represent monetized provisioning, regulating, supporting, and cultural services provided by ecosystem functions. Flood-hazard-risk-reduction is excluded from these coefficients to avoid duplication with structural flood-damage-reduction benefits; the published technical reference does not provide a sub-component breakdown sufficient to separately quantify and remove the flood hazard reduction element referenced in FEMA (2022) Section 5.1's description of composite riparian values. AESB values are reported as constant-dollar annual benefits, applied to the net increase in qualifying acreage relative to No Action, and are independent of the project evaluation period. Only the annualized AESB values are carried forward into Attachment D and Table D-14.

[2] Refer to Sections 3.2 and 3.3 for a complete description of the Alternatives.

[3] Price base: 2023. AESB values were converted from 2021 dollars to constant 2023 dollars using the U.S. Bureau of Labor Statistics CPI (2021 to 2023 factor = 1.1246).

[4] Negative values indicate a net decrease in qualifying Riparian acreage relative to No Action, reflecting a loss of ecosystem-service value rather than a benefit. The resulting net decrease is valued using the same FEMA (2022) Riparian Areas coefficient applied elsewhere in this table, consistent with OMB Circular A-4 §7(a–b) requirements to identify and measure both costs and benefits of each Alternative.

[5] Rounding: Values are rounded to the nearest $1,000, consistent with NRCS NWPH §601.30(B), NWPM §501.44A11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

[6] Alternative 6A (NBS-focused combined) equals the summation of the values from Alternatives 1A through 5A.

[7] Alternative 6B (Traditional-focused combined) equals the summation of the values from Alternatives 1B through 5B.

[8] Due to rounding to the nearest $1,000, minor adjustments were made to resulting AESB for the combined Alternatives (6A and 6B) to ensure that the displayed AESB values for the combined Alternatives equaled the sum of the combined benefits from Sites 1-5.

4.4.3 Miscellaneous Non-Monetized Benefits

This section has been intentionally deleted. Miscellaneous non-monetized benefits (such as aesthetic, social, or health-related outcomes) are not included in this economic evaluation, consistent with current NRCS guidance and OMB Circular A-94.

4.5 Economic Evaluation Results

4.5.1 BCR Methodology

The BCR was calculated using a discounted cash-flow approach consistent with NRCS watershed planning requirements and OMB benefit–cost analysis guidance. The analysis evaluates the relationship between the present value of monetized project benefits and the present value of project costs over a 52-year period of analysis, consisting of a two-year construction period followed by 50 years of O&M. This method provides consistent comparison of up-front and recurring costs over time.

4.5.2 Benefits

Average Annual Constant Dollar Benefits (AACDB) include AAFDRB and AESB. As discussed in Section 4.4.1, AAFDRB was derived as the difference between EAD under the FWOFI/No Action Alternative and future with-project for each Action Alternative, where EAD values were developed by integrating event-level flood damages across annual exceedance probabilities using trapezoidal probability weighting. As described in Section 4.4.2, AESB represents the monetized annual value of ecosystem services associated with restored riparian and wetland areas, based on federally approved per-acre coefficients. These AESB values represent ecological functions (habitat, water filtration, nutrient cycling, and aesthetic services) distinct from the structural flood-damage-reduction benefits quantified in Section 4.4.1. Accordingly, the two benefit streams are treated independently in all economic tables to avoid double-counting and to ensure consistency with NRCS DM 9500-013 §8(c), and OMB Circulars A-4 and A-94. Social and qualitative ecosystem benefits were not included, consistent with NRCSPR&G guidance.

Initial AAFDRB and AESB values represent constant-dollar, undiscounted annual benefit estimates. Both AAFDRB and AESB were assumed to begin upon completion of construction. Accordingly, the combined annual benefit stream was modeled to occur over 50 operating years (Years 3–52) and was discounted using a 3.25 percent real discount rate, with a two-year implementation lag applied to reflect the construction period. The resulting annualized discounted benefits are summarized in Table D-14 as the Annual Equivalent AAFDRB, Annual Equivalent AESB, and the combined Annual Equivalent Benefits (AEB). Constant-dollar, undiscounted cash-flow tables including annual benefits for each of the twelve Action Alternatives are provided in Tables 1 through 12 in Attachment D.

4.5.3 Costs

Costs considered include installation (construction, real property acquisition, relocation/replacement, engineering, technical assistance, permitting, and project administration) during the two-year implementation phase and O&M during the 50-year evaluated life (Years 3–52). Capital costs were treated as occurring during the construction period and discounted to present value. O&M costs in Table D-6 are provided in Annual Equivalent form, reflecting an equivalent uniform annual cost derived using the same discount rate and analysis period assumptions. To ensure benefits and costs were evaluated on a consistent present value basis, the annual equivalent O&M cost was converted to present value using the appropriate present-worth factor for a uniform annual series over the 50-year operating period, with a two-year implementation lag applied to reflect that O&M begins in Year 3. This conversion prevents double-counting of discounting effects and ensures that the present

value of costs reflects the correct timing of operations. Total annualized discounted costs are summarized in Table D-14 as the combined Annual Equivalent Costs (AEC). Constant-dollar, undiscounted cash-flow tables including annual costs for each of the twelve Action Alternatives are provided in Tables 1 through 12 in Attachment D.

4.5.4 BCR Calculation

The BCR was calculated using the Annual Equivalent method, where the BCR is the ratio of the Annual Equivalent of total benefits to the Annual Equivalent of total costs:

$$BCR = \frac{AE(\text{Benefits})}{AE(\text{Costs})}$$

As discussed in Sections 4.5.2 and 4.5.3, the benefits and costs were calculated with a 52-year period of analysis, consisting of a two-year construction period and 50 years of operation and maintenance (years 3 through 52). A real discount rate of 3.25 percent was applied to the benefits and costs to determine the AEB and AEC used in the BCR calculation, as summarized in Table D-14. Constant-dollar, undiscounted cash-flow tables including annual benefits and costs for each of the twelve Action Alternatives are provided in Tables 1 through 12 in Attachment D. AEB and AEC for each Project site and combined alternative are summarized in Economic Tables 5 and 6 (Tables D-19 and D-20, presented in Section 4.84.8). These tables provide the official results used to determine Net Monetized Benefits and BCRs. Minor differences between component-level and total-Project annualized values result from timing and rounding conventions per NWPM §501.12(C). All displayed values are rounded to the nearest $1,000 per NRCS NWPH §601.30(B) and NWPM §501.44A.11.a.

4.5.5 Maximum Net Monetized Benefits Alternative Identification

In accordance with NRCS planning policy under DM 9500-01 §6(b)(4)(c), alternatives containing multiple independent components should be evaluated individually and in combination when those components can function independently. This approach enables identification of the Maximum Net Monetized Benefits (MNMB) Alternative, representing the most economically efficient combination of measures. The MNMB requirement also derives from the 1983 Economic and Environmental Principles and Guidelines (P&G) (U.S. Water Resources Council, 1983), which remain the governing standard for economic efficiency in NRCS watershed planning. While the 2013 PR&G (Council of Environmental Quality, 2013) and its Interagency Guidelines (Council of Environmental Quality, 2014) expanded consideration of social and environmental objectives, NRCS policy (DM 9500-013) clarifies that the 1983 P&G continue to govern benefit–cost evaluations.

The MNMB Alternative was identified by evaluating the net economic benefits of individual Project sites and all practical combinations of Project sites. The analysis recognizes that the Project consists of five independent Project sites that may be implemented individually or in combination because each of the five Project sites (1 through 5) functions as a distinct subwatershed with no system-wide hydraulic dependencies. Therefore, consistent with federal policy, the MNMB Alternative was identified to benchmark economic efficiency for transparent comparison with the Preferred Alternative. Because the Project sites function independently and exhibit additive costs and benefits, site-level monetized benefits and costs were calculated individually and then aggregated to evaluate combined Alternatives.

Benefits and costs for each Project site were evaluated, as described in Sections 4.2 through 4.4. After determining the benefits and costs for each Project site, all feasible combinations of sites were then evaluated by summing site-level present values of benefits and costs for the

sites included in each combination. For each combination, Net Monetized Benefits (NMB) were calculated as the difference between total Annual Equivalent benefits and total Annual Equivalent costs. The Alternative with the highest positive net monetized benefits was identified as the MNMB Alternative, subject to meeting Project feasibility and planning constraints. The NMB analysis of all practical potential site combinations identified Alternative 6A (NBS-focused for the full Study Area) as the MNMB Alternative. Table D-13 presents the top five combinations ranked by total NMB.

Table D-13. Summary of Results to Identify Maximized Net Monetized Benefits Alternative[1]

Scenario/Combination of Alternatives[1]					Total Average Annual Costs (AAC) ($)[2,6]	Total Average Annual Benefits (AAB) ($)[3,5]	Incremental Net Benefits ($)[4,6]	Net Monetized Benefits (NMB) ($)[5,6]	Rank
1A	2A	3A	4A	5A	$1,915,000	$858,000	$1,057,000	$1,057,000	1
1A	2A	3A		5A	$1,882,000	$830,000	(-$5,000)	$1,052,000	2
1A	2A	3A	4A		$1,660,000	$626,000	(-$18,000)	$1,034,000	3
1A	2A	3A			$1,627,000	$598,000	(-$5,000)	$1,029,000	4
1A	2A		4A	5A	$1,833,000	$836,000	(-$32,000)	$997,000	5

[1] Includes only the six NBS-focused alternatives (1A through 6A), which were analyzed in all possible combinations to identify the Maximum Net Monetized Benefits (MNMB) Alternative. Refer to Sections 3.2 and 3.3 for complete descriptions of the individual alternatives.

[2] Average Annual Costs (AAC) represent annualized installation and O&M costs, calculated using a 3.25 percent discount rate over the 50-year evaluated life (Years 3–52), consistent with NRCS NWPM §501.12(C) and OMB Circular A-94.

[3] Average Annual Benefits (AAB) include two components: (a) flood damage reduction benefits (expected annual damages avoided) and (b) annual ecosystem services benefits (AESB) taken from Table D-14 and Table D-20.

[4] Incremental Net Benefits represents the change in NMB relative to the next higher combination.

[5] Net Monetized Benefits (NMB) equal AAB minus AAC.

[6] Rounding: All cost and benefit values are rounded to the nearest $1000, which is consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

4.5.6 Summary of Results

Table D-14 provides a summary of the economic evaluation results for the 12 Action Alternatives, including average annual costs, benefits, net benefits, and BCRs. Table D-14 provides both the undiscounted benefits (AAFDRB, AESB, and AACDB) and their discounted annual equivalents (Annual Equivalent AAFDRB, Annual Equivalent AESB, and AEB).

Table D-14. Summary of Economic Evaluation Results: Average Annual Costs, Benefits, Net Benefits, and BCRs[1, 2]

Alternative[3]	AAFDFE (Construction Dollar)[4]	AEE (Construction Dollar)[4]	ACDE[4]	Annual Equivalent AFDFE[4]	Annual Equivalent AEE[4]	Annual Equivalent AEC)[5]	Annual Equivalent NNE[6]	ECF[7]
No Action Alternative[9]	$0	$0	$0	$0	$0	$0	$0	$0	N/A
Alternative 1A	$5,129,000	$9,129,444	$14,258,444	$287,135	$511,078	$798,213	$1,471,787	1.84

	000	000	8,000	000	000	7,000	,000	,000	
Alternative 2A	$25,000	$176,000	$201,000	$23,000	$165,000	$188,000	$98,000	$90,000	1.92
Alternative 3A	$58,000	$29,000	$87,000	$55,000	$27,000	$82,000	$22,000	$60,000	3.73
Alternative 4A	$1,000	$34,000	$35,000	$1,000	$32,000	$33,000	$28,000	$5,000	1.18
Alternative 5A	$61,000	$211,000	$272,000	$57,000	$198,000	$255,000	$232,0	$23,000	1.10

							00		
Alternative 6A[8]	$664,000	$1,379,000	$2,043,000	$620,000	$1,293,000	$1,915,000	$858,000	$1,057,000	2.23
Alternative 1B	$519,000	$25,000	$544,000	$486,000	$24,000	$510,000	$668,000	(-$158,000)	0.76
Alternative 2B	$25,000	$13,000	$38,000	$23,000	$12,000	$35,000	$76,000	(-$41,00	0.46

								0)	
Alternative 3B	$58,000	$8,000	$66,000	$55,000	$8,000	$63,000	$17,000	$46,000	3.71
Alternative 4B	$1,000	(-$50,000)	(-$49,000)	$1,000	(-$47,000)	(-$46,000)	$19,000	(-$65,000)	-2.42
Alternative 5B	$61,000	$40,000	$101,000	$57,000	$38,000	$95,000	$217,000	(-$122,000)	0.44
Alternative 6B[8]	$66	$36	$70	$66	$35	$65	$9	(-	0.

	4,000	,000	0,000	2,000	,000	7,000	97,000	$340,000)	66

[1] Price base: 2023. All non-2023 values were converted from their original 2021 values to constant 2023 dollars using the U.S. Bureau of Labor Statistics Consumer Price Index (CPI) (2021 to 2023 factor = 1.1246).

[2] Rounding: Values are rounded to the nearest $1,000, consistent with NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

[3] Refer to Sections 3.2 and 3.3 for a complete description of the Alternatives.

[4] AAFDRB and AESB represent constant-dollar, undiscounted annual benefit estimates. AACDB are the sum of AAFDRB and AESB. These annual values differ from the AEB used in the NMB and BCR calculations due to application of a 3.25 percent real discount rate and a two-year implementation lag reflecting the construction period. As a result, AEB are lower than the undiscounted annual benefit values (AACDB).

[5] AEC were derived from the discounted present-value of total costs (capital and O&M) to support comparison with annualized benefit measures.

[6] NMB represent the difference between annual equivalent benefits (AEB) and the annual equivalent costs (AEC).

[7] The BCR represents the ratio of annual equivalent benefits (AEB) to annual equivalent costs (AEC).

[8] Due to rounding to the nearest $1,000, minor adjustments were made to some values for the combined Alternatives (6A and 6B) to ensure that the displayed values for the combined Alternatives equaled the sum of the combined values from Project sites 1-5 where applicable.

[9] Neither the City of Wilmot nor the City of Parkdale maintains a dedicated annual operations and maintenance budget for the existing stormwater drainage infrastructure addressed by this Project; deteriorated or failed components are instead addressed on an as needed, unplanned basis through grant funded repair or replacement rather than a planned, budgeted maintenance program. Accordingly, AAFDRB, AESB, AACDB, AEB, and AEC are each $0 for the No Action Alternative, and the BCR is not applicable.

4.6 Identification of the Final Array of Alternatives and the Preferred Alternative

Economic analyses conducted for all site-specific and combined alternatives (1A, 2A, 3A, 4A, 5A, 6A, 1B, 2B, 3B, 4B, 5B, and 6B) demonstrated that the NBS-focused designs consistently produced higher AAB and greater NMB than their Traditional-focused counterparts, as shown in Table D-14. These comparative results are documented in the detailed cash-flow tables in Attachment D, which include year-by-year costs and benefits for each of these 12 Alternatives. The summary economic tables presented in Section 4.8 (Economic Tables 1 through 6) provide the official results for the Preferred Alternative. In accordance with OMB Circular A-94 §5(a), economic justification is based on net monetized benefits (NMB = benefits − costs); BCRs are reported for documentation and transparency but are not used in isolation as the decision criterion.

For each Project site and for the combined Project (Alternative 6A versus 6B), total implementation costs for the NBS-focused alternatives were lower, and NMB were higher. The corresponding BCRs, derived from the same analytical method described in Section 4.5.4, are presented for informational purposes. Based on the superior net monetized benefits of the NBS-focused designs, the Traditional-focused site alternatives (1B through 5B) were eliminated from further consideration.

The Cities of Wilmot and Parkdale (Project Sponsors) strongly supported addressing all five flood-impacted areas in the community. During public meetings and sponsor coordination, stakeholders expressed clear opposition to mitigating some flood areas while leaving others unaddressed. Based on this input, all five individual NBS-focused site alternatives (1A through 5A) were not carried forward individually. Instead, the two combined alternatives, Alternative 6A (NBS-focused) and Alternative 6B (Traditional-focused), were carried forward as the principal Action Alternatives for detailed evaluation.

Alternative 6A (Combined NBS-Focused) is identified as the Preferred Alternative because it addresses all five flood-impacted areas using optimized NBS measures where practicable, while maintaining economic and engineering feasibility. Alternative 6B (Combined Traditional-Focused) is economically inefficient but was retained in the Final Array of Alternatives at the request of the Sponsors for comparative purposes.

In addition, and consistent with DM 9500-01 requirements, an incremental analysis of the five NBS-focused site alternatives was performed to identify the MNMB Alternative. As presented in Section 4.5.5, the NMB analysis of all practical potential site combinations identified Alternative 6A (NBS-focused for the full Study Area) as the MNMB Alternative.

Based on these findings, the Final Array of Alternatives carried forward for detailed analysis in the Plan-EA includes:

- **No Action (Future Without Federal Investment) Alternative**, as the required baseline.
- **Alternative 6A / MNMB Alternative**: Combined NBS-Focused Alternative (Preferred Alternative and MNMB Alternative). Works of improvement are detailed in Sections 3.2 and 3.3 and summarized in Table D-3.
- **Alternative 6B**: Combined Traditional-Focused Alternative. Works of improvement are detailed in Sections 3.2 and 3.3 and summarized in Table D-3.

4.7 Risk and Uncertainty

Risk and uncertainty are inherent in water resources planning and were considered throughout the hydrologic, hydraulic, economic, and ecosystem services evaluations conducted for this Project. Risk refers to outcomes that can be described using reasonably well-defined probability distributions, such as the annual exceedance probability (AEP) of flood events. Uncertainty refers to factors that cannot be described with known probability distributions, including future land use changes, economic variability, infrastructure maintenance conditions, or longer-term climatic trends. Both unavoidable in watershed-scale planning and are addressed through conservative assumptions, consistent analytical methods, and transparent documentation.

Hydrologic and Hydraulic Risk

Flood risk was evaluated using HEC-RAS hydraulic modeling for multiple storm events representing a range of annual exceedance probabilities (2-, 5-, 10-, 25-, 50-, 100-, and 500-year events). These discrete events provide a probability-based representation of flood behavior across low-, moderate-, and high-frequency storm conditions. Hydrologic and hydraulic modeling is subject to uncertainty arising from:

- Terrain data resolution and vertical accuracy,
- Assumptions regarding roughness coefficients and land cover,
- Representation of culverts, bridges, and localized drainage features,
- Spatial variability in rainfall distribution,
- Potential debris blockage and maintenance conditions.

To address these sources of uncertainty, a consistent modeling framework, parameter set, and boundary conditions were applied to existing and with-project scenarios. Because all alternatives were evaluated using the same hydrologic inputs and hydraulic modeling approach, uncertainty in flood elevations and extents affects each alternative consistently. As a result, relative differences in modeled flood risk reduction are considered appropriate for planning-level comparison of alternatives.

Uncertainty in Future Conditions

Future precipitation intensity, land-use conditions, and drainage area response may differ from historical patterns. NOAA Atlas 14 precipitation frequency data were used to represent current best-available rainfall estimates. Although localized projections of future climate conditions remain uncertain, regional observations indicate increasing rainfall intensity trends in portions of Arkansas.

To reduce sensitivity to these uncertainties, the evaluation considered multiple event probabilities and assessed flood risk reduction across the full range of modeled storms. This probability-based approach is more robust than reliance on a single design event and is consistent with NRCS planning policy requiring evaluation of EAD under PL 83-566.

Uncertainty in Economic Evaluation

Flood damages were estimated using an EAD methodology based on HEC-RAS modeled water-surface elevations and GIS-identified structures and transportation infrastructure within each storm event footprint. For each modeled event:

- Water-surface elevations were compared to structure ground and foundation elevations to determine flood depth.

- Occupancy-specific depth-damage relationships derived from nationally recognized federal sources (e.g., HAZUS and USACE methodologies) were applied to estimate structure and content damages.

Discrete event damages were then integrated across the evaluated annual exceedance probabilities using trapezoidal approximation to calculate EAD. AAFDRB was determined as the difference between the No Action Alternative EAD and with-project EAD for each alternative. Uncertainty in the economic evaluation arises from:

- Generalized depth-damage relationships that may not capture parcel-specific construction details,
- Structure inventory accuracy,
- Replacement value assumptions,
- Hydraulic model sensitivity to terrain and boundary conditions.

However, the same structure inventory, valuation data, depth-damage functions, and hydraulic modeling framework were applied consistently to all alternatives. Therefore, uncertainty affects each alternative uniformly, and relative differences in NMB are considered robust for planning-level decision making in accordance with OMB Circular A-94.

Residual Risk

Residual flood risk will remain for storm events that exceed the modeled or design capacity of the proposed improvements. Even with implementation of the Preferred Alternative, extreme events may result in overtopping, localized flooding, or infrastructure impacts. The economic analysis accounts for this residual risk by evaluating damages across the range of modeled flood frequencies up to and including the 500-year event, rather than assuming complete elimination of flood impacts.

Adaptive Management

Because future hydrologic and drainage area conditions cannot be predicted with certainty, long-term Project performance will rely on effective O&M. O&M agreements between NRCS and the SLO will include inspection, monitoring, and maintenance requirements. These provisions support adaptive management and ensure that the Works of Improvement continue to function as intended under changing environmental and infrastructure conditions.

4.8 Economic Summary for Preferred Alternative

This section compiles and summarizes all key economic results for the Preferred Alternative (6A – Combined NBS-Focused) and presents them in the tabular formats required for inclusion in the Plan-EA. The tables reflect the full economic life-cycle analysis for all five Project sites and were developed in accordance with the NRCS National Watershed Program Manual (NWPM, Title 390, Part 500, 5th Edition, amended June 2024) and related federal guidance, including OMB Circulars A-94 and A-4.

The following tables summarize the economic results for the Preferred Alternative:

Table D-15 (Economic Table 1): Estimated Installation Costs by Project Site. Presents the up-front capital costs of installation for all five Project sites, organized by Project site and funding source. Costs include Works of Improvement, Engineering, and Other Costs of Installation, consistent with Section 3.4 and Table D-5.

Table D-16 (Economic Table 2): Installation Costs by Major Category and Funding Source. Provides a detailed breakdown of installation costs by cost category (construction, real property rights, relocation payments, engineering, permitting, and project administration), organized by project site and funding responsibility (PL 83-566 versus other funds). This table documents cost eligibility and demonstrates compliance with NRCS cost-sharing policies.

Table D-17 (Economic Table 3): Structural and Hydraulic Data for Channel Improvements. Summarizes design parameters for channel improvements under Alternative 6A, including channel type, design discharges, flow velocities, and structural details. These data verify technical feasibility and document the physical characteristics of the proposed works of improvement.

Table D-18 (Economic Table 4): Average Annual Costs by Project Site. Presents the total Average Annual Costs (AAC) for each project site under the Preferred Alternative. AAC values are composed of two components: (a) annualized installation costs and (b) annualized O&M costs. Installation costs were annualized using a capital recovery factor at a 3.25 percent discount rate over the 50-year evaluated life. O&M costs were developed by discounting the future stream of expected expenditures over the 50-year life and converting the net present value into an equivalent annualized cost, consistent with NRCS NWPM §501.12(C) and OMB Circular A-94. All values are expressed in 2023 dollars.

Table D-19 (Economic Table 5): Average Annual Food Damage Reduction Benefits by Project Site. Provides the Annual Equivalent AAFDRB based on estimated from Annual Equivalent EAD to structures, contents, and vehicles.

Table D-20 (Economic Table 6): Summary of Average Annual Benefits and BCRs. Presents the overall economic results for the Preferred Alternative, including AAC, AAB (flood + AESB), and BCRs. These results were calculated using the NRCS annualization method with a 3.25 percent discount rate over the 50-year evaluated life.

To provide full transparency, constant-dollar, undiscounted cash flow tables for each of the 12 Action Alternatives (1A, 2A, 3A, 4A, 5A, 6A, 1B, 2B, 3B, 4B, 5B, and 6B) are presented in Attachment D, Tables 1 through 12, in accordance with OMB Circular A-4 (§7a/b). These tables present year-by-year cash flows for installation, O&M, and benefits across the full 52-year period of analysis (2 years of implementation + 50 years of evaluated life). This disclosure allows reviewers to track timing, assumptions, and discounting directly, while ensuring that all NRCS-required annualized economic tables are developed in the proper format for evaluation and comparison in the Plan-EA.

Table D-15. Economic Table 1: Estimated Installation Cost, City of Wilmot Area, Arkansas, Dollars[1,2,3,4,5]

Works of Improvement	Number				Estimated Costs (Dollars)						
					Public Law 83-566 Funds			Other Funds			Total ($)
	Units	Federal Land	Non-Federal Land	Total	Federal Land	Non-Federal Land	Total	Federal Land	Non-Federal Land	Total	
Project Site 1 - City of Wilmot Southside Stream Corridor											
Works of Improvement											
Construction	Acres	0	26.0	26.0	$0	$7,202,000	$7,202,000	$0	$0	$0	$7,202,000
Real Property Rights	Acres	0	22.3	22.3	$0	$693,000	$693,000	$0	$0	$0	$693,000
Relocation	Each	0	8	8	$0	$328,000	$328,000	$0	$0	$0	$328,000
Contingency (10%)	Percent	N/A	N/A	N/A	$0	$822,000	$822,000	$0	$0	$0	$822,000
SUBTOTAL WORKS OF IMPROVEMENT:					**$0**	**$9,045,000**	**$9,045,000**	**$0**	**$0**	**$0**	**$9,045,000**
Engineering	Percent	N/A	N/A	N/A	$0	$1,932,000	$1,932,000	$0	$0	$0	$1,932,000
Other Costs of Installation											
Technical Assistance	Percent	N/A	N/A	N/A	$0	$4,000	$4,000	$0	$0	$0	$4,000
Permitting	Lump Sum	N/A	N/A	N/A	$0	$0	$0	$0	$41,000	$41,000	$41,000
Project Administration (NRCS + Sponsor)	Percent	N/A	N/A	N/A	$0	$82,000	$82,000	$0	$41,000	$41,000	$123,000
TOTAL INSTALLATION COST (Site 1):					**$0**	**$11,063,000**	**$11,063,000**	**$0**	**$82,000**	**$82,000**	**$11,145,000**
Project Site 2 - City of Wilmot Central Drainage Area											
Works of Improvement											
Construction	Acres	0	4.5	4.5	$0	$1,553,000	$1,553,000	$0	$0	$0	$1,553,000
Real Property Rights	Acres	0	4.3	4.3	$0	$61,000	$61,000	$0	$0	$0	$61,000
Relocation	Each	0	0	0	$0	$0	$0	$0	$0	$0	$0
Contingency (10%)	Percent	N/A	N/A	N/A	$0	$161,000	$161,000	$0	$0	$0	$161,000
SUBTOTAL WORKS OF IMPROVEMENT:					**$0**	**$1,775,000**	**$1,775,000**	**$0**	**$0**	**$0**	**$1,775,000**
Engineering	Percent	N/A	N/A	N/A	$0	$379,000	$379,000	$0	$0	$0	$379,000
Other Costs of Installation											
Technical Assistance	Percent	N/A	N/A	N/A	$0	$1,000	$1,000	$0	$0	$0	$1,000
Permitting	Lump Sum	N/A	N/A	N/A	$0	$0	$0	$0	$4,000	$4,000	$4,000
Project Administration (NRCS + Sponsor)	Percent	N/A	N/A	N/A	$0	$16,000	$16,000	$0	$8,000	$8,000	$24,000
TOTAL INSTALLATION COST (Site 2):					**$0**	**$2,171,000**	**$2,171,000**	**$0**	**$12,000**	**$12,000**	**$2,183,000**
Project Site 3 - City of Wilmot Northside Drainage Area											
Works of Improvement											

Works of Improvement	Number				Estimated Costs (Dollars)						
					Public Law 83-566 Funds			Other Funds			Total ($)
	Units	Federal Land	Non-Federal Land	Total	Federal Land	Non-Federal Land	Total	Federal Land	Non-Federal Land	Total	
Construction	Acres	0	1.3	1.3	$0	$320,000	$320,000	$0	$0	$0	$320,000
Real Property Rights	Acres	0	0.7	0.7	$0	$5,000	$5,000	$0	$0	$0	$5,000
Relocation	Each	0	0	0	$0	$0	$0	$0	$0	$0	$0
Contingency (10%)	Percent	N/A	N/A	N/A	$0	$33,000	$33,000	$0	$0	$0	$33,000
SUBTOTAL WORKS OF IMPROVEMENT:					**$0**	**$358,000**	**$358,000**	**$0**	**$0**	**$0**	**$358,000**
Engineering	Percent	N/A	N/A	N/A	$0	$76,000	$76,000	$0	$0	$0	$76,000
Other Costs of Installation											
Technical Assistance	Percent	N/A	N/A	N/A	$0	$0	$0	$0	$0	$0	$0
Permitting	Lump Sum	N/A	N/A	N/A	$0	$0	$0	$0	$4,000	$4,000	$4,000
Project Administration (NRCS + Sponsor)	Percent	N/A	N/A	N/A	$0	$3,000	$3,000	$0	$2,000	$2,000	$5,000
TOTAL INSTALLATION COST (Site 3):					**$0**	**$437,000**	**$437,000**	**$0**	**$6,000**	**$6,000**	**$443,000**
Project Site 4 - City of Wilmot Northwest Drainage Area											
Works of Improvement											
Construction	Acres	0	3.1	3.1	$0	$470,000	$470,000	$0	$0	$0	$470,000
Real Property Rights	Acres	0	3.1	3.1	$0	$11,000	$11,000	$0	$0	$0	$11,000
Relocation	Each	0	0	0	$0	$0	$0	$0	$0	$0	$0
Contingency (10%)	Percent	N/A	N/A	N/A	$0	$48,000	$48,000	$0	$0	$0	$48,000
SUBTOTAL WORKS OF IMPROVEMENT:					**$0**	**$529,000**	**$529,000**	**$0**	**$0**	**$0**	**$529,000**
Engineering	Percent	N/A	N/A	N/A	$0	$113,000	$113,000	$0	$0	$0	$113,000
Other Costs of Installation											
Technical Assistance	Percent	N/A	N/A	N/A	$0	$0	$0	$0	$0	$0	$0
Permitting	Lump Sum	N/A	N/A	N/A	$0	$0	$0	$0	$4,000	$4,000	$4,000
Project Administration (NRCS + Sponsor)	Percent	N/A	N/A	N/A	$0	$5,000	$5,000	$0	$2,000	$2,000	$7,000
TOTAL INSTALLATION COST (Site 4):					**$0**	**$647,000**	**$647,000**	**$0**	**$6,000**	**$6,000**	**$653,000**
Project Site 5 -City of Parkdale Project Site											

Works of Improvement	Number				Estimated Costs (Dollars)						
					Public Law 83-566 Funds			Other Funds			Total ($)
	Units	Federal Land	Non-Federal Land	Total	Federal Land	Non-Federal Land	Total	Federal Land	Non-Federal Land	Total	
Works of Improvement											
Construction	Acres	0	8.2	8.2	$0	$3,323,000	$3,323,000	$0	$0	$0	$3,323,000
Real Property Rights	Acres	0	6.6	6.6	$0	$289,000	$289,000	$0	$0	$0	$289,000
Relocation	Each	0	2	2	$0	$82,000	$82,000	$0	$0	$0	$82,000
Contingency (10%)	Percent	N/A	N/A	N/A	$0	$369,000	$369,000	$0	$0	$0	$369,000
SUBTOTAL WORKS OF IMPROVEMENT:					**$0**	**$4,063,000**	**$4,063,000**	**$0**	**$0**	**$0**	**$4,063,000**
Engineering	Percent	N/A	N/A	N/A	$0	$868,000	$868,000	$0	$0	$0	$868,000
Other Costs of Installation											
Technical Assistance	Percent	N/A	N/A	N/A	$0	$2,000	$2,000	$0	$0	$0	$2,000
Permitting	Lump Sum	N/A	N/A	N/A	$0	$0	$0	$0	$22,000	$22,000	$22,000
Project Administration (NRCS + Sponsor)	Percent	N/A	N/A	N/A	$0	$37,000	$37,000	$0	$18,000	$18,000	$55,000
TOTAL INSTALLATION COST (Site 5):					**$0**	**$4,970,000**	**$4,970,000**	**$0**	**$40,000**	**$40,000**	**$5,010,000**
Project Total					**$0**	**$19,288,000**	**$19,288,000**	**$0**	**$146,000**	**$146,000**	**$19,434,000**

Prepared: August 2026

[1] Price base: 2023. All totals are rounded to the nearest $1,000 per NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance. Due to rounding, discrepancies may occur between summed line items and reported totals. Totals have been adjusted in some places for consistency throughout all cost tables throughout this report and Appendix D; however, underlying unrounded values may differ.

[2] Table format consistent with 2024 NWPM Figure 501D-8 (NWPM §501.45A).

[3] Relocation costs are shown separately, consistent with NWPM §501.80A.14.g and the Cost-Share Table in the Watershed Agreement.

[4] Costs of Installation (Technical Assistance, Permitting, NRCS and Sponsor Administration) are reported here for total installation cost accounting.

[5] Figures reconcile with Appendix D (Tables D-5 and D-7), the Plan-EA, and the OMB Fact Sheet to ensure consistency across all project documentation.

Table D-16. Economic Table 2: Estimated Cost Distribution—Water Resource Project Measures, City of Wilmot Area, Arkansas, Dollars[1]

Works of Improvement	Installation PL 83-566 Funds Construction	Installation PL 83-566 Funds Engineering[2]	Installation PL 83-566 Funds Real Property Rights[3]	Installation PL 83-566 Funds Relocation Payments	Installation PL 83-566 Funds Project Admin	Total PL 83-566	Other Funds Construction[2]	Other Funds Engineering[3]	Other Funds Real Property Rights[4,5]	Other Funds Relocation Payments[6]	Other Funds Project Admin	Total Other	Installation Costs Total
Project Site 1 - City of Wilmot Southside Stream Corridor	$8,024,000	$1,932,000	$693,000	$328,000	$86,000	$11,063,000	$0	$0	$0	$0	$82,000	$82,000	$11,145,000
Project Site 2 - City of Wilmot Central Drainage Area	$1,714,000	$379,000	$61,000	$0	$17,000	$2,171,000	$0	$0	$0	$0	$12,000	$12,000	$2,183,000
Project Site 3 - City of Wilmot Northside Drainage Area	$353,000	$76,000	$5,000	$0	$3,000	$437,000	$0	$0	$0	$0	$5,000	$5,000	$442,000
Project Site 4 - City of Wilmot Northwest Drainage Area	$518,000	$113,000	$11,000	$0	$5,000	$647,000	$0	$0	$0	$0	$6,000	$6,000	$653,000
Project Site 5 -City of Parkdale Project Site	$3,692,000	$868,000	$289,000	$82,000	$39,000	$4,970,000	$0	$0	$0	$0	$41,000	$41,000	$5,011,000
Total Installation Cost	**$14,301,000**	**$3,368,000**	**$1,059,000**	**$410,000**	**$150,000**	**$19,288,000**	**$0**	**$0**	**$0**	**$0**	**$146,000**	**$146,000**	**$19,434,000**

Prepared: August 2026

[1] Price base: 2023 dollars. All totals are rounded to the nearest $1,000 per NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance. Intermediate computations are maintained to the nearest $1,000 for audit traceability. Due to rounding, discrepancies may occur between summed line items and reported totals. Totals have been adjusted in some places for consistency throughout all cost tables throughout this report and Appendix D; however, underlying unrounded values may differ.

[2] Includes $__0__ of Public Law 83-566 funds and $__0__ of other funds for cultural resource protection and mitigation measures. No costs are anticipated because no cultural resource protection or mitigation measures are expected to be required.

[3] Engineering services contract cost to be borne: $_3,368,000_ by Public Law 83-566 funds and $__0__ by other funds. Engineering services contract costs are included in the PL 83-566 Engineering line item; no additional Other Funds are anticipated.

[4] Includes $__0__ of real property cost for mitigation. No costs are anticipated because the NBS-focused project measures are not expected to require Clean Water Act Section 404 or Endangered Species Act mitigation.

[5] Includes $__0___ for surveys, legal fees, and other costs. No additional costs were allocated specifically for surveys, legal fees, or other incidental costs. These are assumed to be included within the lump-sum real property rights acquisition estimates shown.

[6] includes $__0__ for relocation assistance advisory service. No separate allocation for relocation assistance advisory services has been included. These services will be provided by the sponsor and/or NRCS as part of project administration responsibilities.

Table D-17. Economic Table 3b: Structural Data—Channel Work, City of Wilmot Area, Arkansas

Channel name (reach)[2]	Station	Drainage area (mi^2)	100-Year frequency design discharge (cfs)	Water surface elevation feet (NAVD88)	Hydraulic Gradient (ft/ft)	Channel Dimensions[3] Gradient (ft/ft)	Channel Dimensions[3] Bottom width (ft)	Channel Dimensions[3] Elevation (NAVD88	Channel Dimensions[3] Side slope	*n* Value Aged	*n* Value As-built	Velocities (ft/s) Aged	Velocities (ft/s) As-built	Excavation volume (yd^3)	Type of work[4]	Existing channel type[5]	Present Flow cond.[6]
Wilmot Creek Reach 2	5+88	0.09	160	387.60	0.0036	0.0036	28	386.00	2:1	0.06	0.035	2.04	3.49	5827	II	M (1925)	I
Wilmot Creek Reach 3	8+91	0.16	240	386.10	0.0024	0.0024	45	384.28	2:1	0.06	0.035	1.80	3.09	18410	II	M (1925)	I
Wilmot Creek Reach 4	12+02	0.25	340	377.04	0.0028	0.0028	55	375.22	2:1	0.06	0.035	1.94	3.33	102628	II	M (1925)	I
Wilmot Creek Reach 5	40+21	0.38	460	370.54	0.0027	0.0027	75	368.66	2:1	0.06	0.035	1.98	3.40	92980	II	M (1950)	I
UT1 Parkdale Creek Reach 1	1+23	0.15	220	398.89	0.0095	0.0095	50	397.83	2:1	0.06	0.035	2.52	4.28	8100	II	M (1975)	I

[1] Prepared: November 2024
[2] Three-dimensional designs were not developed for vegetated swales, small roadside and drainage ditches, or NBS stormwater BMPs (bioretention) in this conceptual/planning design phase and, as such, no structural details for these measures are included. Only SMC reaches with NCD channels were developed as three-dimensional designs in this conceptual/planning design phase. Refer to 10% Desing Plan Set in Attachment B of Appendix D for plan, profiles, and cross-sections of SMC reaches with NCD channels.
[3] Where excavation is not planned, show cross-sectional area and wetted perimeter below hydraulic grade lines.
[4] I Establishment of new channel including necessary stabilization measures.
II Enlargement or realignment of existing channel or stream.
III Cleaning out natural or manmade channel (including bar removal and major clearing and snagging operations).
IV Clearing and removal of loose debris within channel section.
V Stabilization as primary purpose (by continuous treatment or localized problem areas—present capacity adequate).
[5] N An unmodified, well-defined natural channel or stream.
M Manmade ditch or previously modified channel or stream (show approximate date of original construction in parenthesis).
O None or practically no defined channel.
[6] Pr Perennial—Flows at all times except during extreme drought.
I Intermittent—Continuous flow through some seasons of the year.
E Ephemeral—Flows only during periods of surface runoff, otherwise dry.
S Ponded water with no noticeable flow—Caused by lack of outlet or high groundwater

Table D-18. Economic Table 4: Estimated Average Preferred Alternative Annual Costs, City of Wilmot Area, Arkansas, Dollars[1, 5, 6]

Works of Improvement	Average Annual Installation Cost[2]	Average Annual Operation & Maintenance Cost[3]	Other Direct Costs	Total[4]
Project Site 1 - City of Wilmot Southside Stream Corridor	$454,000	$24,000	$0	**$478,000**
Project Site 2 - City of Wilmot Central Drainage Area	$89,000	$9,000	$0	**$98,000**
Project Site 3 - City of Wilmot Northside Drainage Area	$18,000	$4,000	$0	**$22,000**
Project Site 4 - City of Wilmot Northwest Drainage Area	$27,000	$1,000	$0	**$28,000**
Project Site 5 -City of Parkdale Project Site	$204,000	$28,000	$0	**$232,000**
Total	**$792,000**	**$66,000**	**$0**	**$858,000**

Prepared: August 2026

[1] Price base: 2023. All non-2023 costs were converted to 2023 dollars using the U.S. Bureau of Labor Statistics CPI Inflation Calculator (BLS, n.d.). Costs were discounted and annualized using NRCS-approved methods over the 50-year evaluated life at a 3.0 percent real discount rate. All monetary values are rounded to the nearest $1,000 per NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance; intermediate computations are maintained to the nearest $100 for audit traceability.

[2] Average Annual Installation Cost (AAIC): Represents the annualized equivalent of all installation expenditures (including Works of Improvement, Engineering, and Other Costs of Installation). Installation costs were discounted to present value (Years 1–2) and converted to annual costs using the capital-recovery-factor method per OMB A-94 §8(a) and NWPM §501.12(C).

[3] Average Annual O&M Cost (AAO&M): Calculated using the Equivalent Annual Cost (EAC) method over the 50-year evaluated life (Years 3–52) at a 3.25 percent discount rate. Reflects higher O&M intensity during Years 3–10 and lower intensity during Years 11–50.

[4] Total Average Annual Cost (AAC): Equal to AAIC + AAO&M. These values form the cost base used for BCR calculations in Table D-20 (Economic Table 6).

[5] Project life: The 2-year implementation period is not included in the evaluated 50-year project life but is included in the 52-year period of analysis. Benefits begin in Year 3 and extend through Year 52.

[6] Methodology: All costs and benefits were developed consistent with NRCS watershed planning requirements (NWPM Part 501) and federal economic evaluation standards. Discounting, annualization, and price-base conventions were applied consistently across all Appendix D economic tables in accordance with OMB Circular A-94, with benefit definition and presentation consistent with OMB Circular A-4.

Table D-19. Economic Table 5. Estimated Average Annual Flood Damage Reduction Benefits, City of Wilmot Area, Arkansas, Dollars[1,2]

Site	Item	Agriculture Related Estimated Average Annual Damage Without Project[2]	Non-Agriculture Related Estimated Average Annual Damage Without Project	Agriculture Related Estimated Average Annual Damage With Project[3]	Non-Agriculture Related Estimated Average Annual Damage With Project	Agriculture Related Damage Reduction Benefit[3]	Non-Agriculture Related Damage Reduction Benefit
Project Site 1 - Northwest Stream Corridor	Structures	$218,000	$0	$5,000	$0	$213,000	$0
	Contents	$143,000	$0	$1,000	$0	$142,000	$0
	Vehicles	$165,000	$0	$1,000	$0	$164,000	$0
	Site Subtotal	*$526,000*	*$0*	*$7,000*	*$0*	*$519,000*	*$0*
Project Site 2 - Central-South Stream Corridor	Structures	$13,000	$0	$600	$0	$12,400	$0
	Contents	$5,000	$0	$100	$0	$4,900	$0
	Vehicles	$8,000	$0	$300	$0	$7,700	$0
	Site Subtotal	*$26,000*	*$0*	*$1,000*	*$0*	*$25,000*	*$0*
Project Site 3 - Southwest Drainage Area	Structures	$28,000	$0	$1,400	$0	$26,600	$0
	Contents	$22,000	$0	$1,100	$0	$20,900	$0
	Vehicles	$11,000	$0	$500	$0	$10,500	$0
	Site Subtotal	*$61,000*	*$0*	*$3,000*	*$0*	*$58,000*	*$0*
Project Site 4 - Roosevelt/Pine/Peebles Streets	Structures	$1,000	$0	$500	$0	$500	$0
	Contents	$0	$0	$0	$0	$0	$0
	Vehicles	$1,000	$0	$500	$0	$500	$0
	Site Subtotal	*$2,000*	*$0*	*$1,000*	*$0*	*$1,000*	*$0*
Project Site 5 - U.S. Highway 65	Structures	$22,000	$0	$1,000	$0	$21,000	$0
	Contents	$10,000	$0	$500	$0	$9,500	$0
	Vehicles	$32,000	$0	$1,500	$0	$30,500	$0
	Site Subtotal	*$64,000*	*$0*	*$3,000*	*$0*	*$61,000*	*$0*
Combined Total		**$679,000**	**$0**	**$15,000**	**$0**	**$664,000**	**$0**

Prepared: August 2026

[1] Price base: 2023. All non-2023 values were converted from their 2021 dollar value to constant 2023 dollars using the U.S. Bureau of Labor Statistics Consumer Price Index (CPI) (2021 to 2023 factor = 1.1246). Estimated Average Annual Damages (EAAD) and Estimated Average Annual Flood-Damage-Reduction Benefits shown in this table represent annual equivalent values derived from expected annual damages (EAD) and were discounted and annualized over the 50-year evaluated life at a 3.25 percent real discount rate, consistent with OMB Circulars A-94 and A-4.

[2] Rounding: Values for each item are rounded to the nearest $1,000, consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

[3] Agriculture-related damages include losses to rural communities and infrastructure in agricultural settings.

Table D-20. Economic Table 6: Comparison of Preferred Alternative Benefits and Costs, City of Wilmot Area, Arkansas, Dollars[1, 2]

Works of Improvement	Project Benefits				Average Annual Costs[6]	Benefit-Cost Ratio[7]
	Average Annual Agricultural-Related Flood Damage Reduction[3]	Average Annual Non-agricultural Damage Reduction	Average Annual Ecosystem Services Benefits[4]	Total Average Annual Benefits[5]		
Project Site 1 - City of Wilmot Southside Stream Corridor	$486,000	$0	$871,000	$1,357,000	$478,000	2.84
Project Site 2 - City of Wilmot Central Drainage Area	$23,000	$0	$165,000	$188,000	$98,000	1.92
Project Site 3 - City of Wilmot Northside Drainage Area	$55,000	$0	$27,000	$82,000	$22,000	3.73
Project Site 4 - City of Wilmot Northwest Drainage Area	$1,000	$0	$32,000	$33,000	$28,000	1.18
Project Site 5 -City of Parkdale Project Site	$57,000	$0	$198,000	$255,000	$232,000	1.10
Total	**$662,000**	**$0**	**$1,293,000**	**$1,915,000**	**$858,000**	**2.23**

Prepared: August 2026

[1] Price base: 2023. All non-2023 values were converted to constant 2023 dollars using the U.S. Bureau of Labor Statistics online CPI Inflation Calculator (BLS, n.d.) or appropriate CPI factor to convert to constant 2023 dollars. Annual benefit and cost streams were discounted and annualized over the 50-year evaluated life at a 3.25 percent real discount rate using the NRCS annualization method. Values represent annual equivalent benefits and costs.

[2] Rounding: Values for each item are rounded to the nearest $1,000, consistent with NRCS NWPH §601.30(B), NWPM §501.44A.11.a, and OMB Fact Sheet guidance on reporting at a practical level of significance.

[3] Flood-damage-reduction benefits: From Table D-19 (Economic Table 5). Includes discounted damages avoided to structures, contents, and vehicles in rural and developed areas.

[4] Ecosystem Services Benefits (AESB): Derived from FEMA (2022) ecosystem-service valuation coefficients for riparian and inland-wetland acreage created by project features. Values represent annual ecosystem-service benefits for provisioning, regulating, supporting, and cultural services. Annual benefit streams were discounted and annualized in accordance with OMB Circular A-94. Benefit definition and presentation are consistent with federal economic evaluation standards under OMB Circular A-4.

[5] Total AAB: Sum of discounted flood-damage-reduction and ecosystem-services benefits. Benefits begin in Year 3 and extend through Year 52 (2-year implementation + 50-year evaluation).

[6] AAC: From Table D-18 (Economic Table 4). Includes discounted annualized installation and O&M costs for all six project sites under the Preferred Alternative.

[7] BCR: Calculated as Total AAB divided by AAC. All totals and ratios in Tables D-18 through D-20 are fully reconciled with one another and with the OMB Summary Sheet.

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Attachment A.
NRCS Waivers

USDA

United States Department of Agriculture

SUBJECT: Waiver Request of Real Property Right Restriction Related to Bipartisan Infrastructure Law (BIL) Projects in Arkansas

April 16, 2024

TO: Michael E. Sullivan
State Conservationist, Arkansas

This memo is in response to your letter dated March 18, 2024, in which you requested a waiver to the National Watershed Program Manual (NWPM) as it relates to the definition and cost-share policy associated with real property as it relates to storm sewer modifications on nineteen BIL projects.

The following NWPM policy sections are requested to be waived:

- NWPM 500.11 (10) states, "*New storm and sanitary sewers, or relocations and changes to existing sewer facilities, in urban or built-up areas are the sole responsibility of the SLO.*"
- NWPM 500.42, D.3 states in part, "*Watershed Program cost-share for land treatment is not available for implementation of a practice or measure that is cost-shared under another Federal program, or for real property rights*".
- NWPM 506.50, K (12) (iv) defines real property rights as "*Changes of existing telephone, power, gas, water, and sewer lines or other utilities. made necessary by the works of improvement. This does not include changes to existing irrigation or drainage facilities.* "

Based on discussion with you and your staff, the Watershed Branch understands the primary purpose for the nineteen projects is Flood Prevention. It is anticipated that to effectively address flooding issues in these rural communities, stormwater systems will need to be upgraded. It is also noted that these projects are in historically underserved (HU) areas.

Your request to allow storm sewer modifications on the nineteen identified BIL projects is approved if the following conditions apply:

- Any real property included in the watershed project plan has a direct and justifiable impact to the flood prevention program purpose. This nexus will be verified by hydrologic and hydraulic floodplain mapping for the amount of flood protection selected during the planning process. Areas outside of the flood boundary are not eligible for real property assistance, unless a specific determination is made demonstrating that such real property has a direct impact to the flood prevention program purpose.
- Authorized measures are limited to changes in stormwater systems and modifications to roads, bridges, and culverts to alleviate flooding as associated with the project.
- NRCS will not reimburse for any road surface beyond gravel (i.e. no pavement).

- The sponsor agrees to the operation, maintenance, and replacement (OM&R) of any works of improvement and associated real property rights.
- All appropriate National Engineering Manual requirements and applicable NRCS standards and specifications will be followed for any works of improvements designed or constructed.

This waiver is granted for the following projects:

- City of Turrell
- Cities of Hughes and Jennette
- Cities of Forrest City-Haynes-Marianna
- City of Cotton Plant
- City of Altheimer
- City of Camden
- City of Wilmot
- Cities of Lewisville and Stamps
- City of Dumas
- City of Blytheville
- City of El Dorado
- City of Eudora
- City of Pine Bluff
- Lick Creek-Big Creek/Helena-Lake View-Marvell
- Long Lake- Little Bee Bayou/Helena
- Cities of Fulton and McNab
- City of Fountain Hill
- City of Menifee
- City of Madison

Cost share rates for the waived real property items will be subject to the flood prevention rate as noted in the NWPM. If you have additional questions, please contact Sonya Keith, National Watershed Operations Program Coordinator at sonya.keith@usda.gov.

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Ralph Smith
Acting Branch Chief Watershed Programs

cc:
James Tillman, Regional Conservationist, Southeast, NRCS, Washington, D.C.
Karen Woodrich, Deputy Chief for Programs, Washington, D.C.
Emily Fife, Acting Division Director, CPTAD, Washington, D.C.
Kevin L. Farmer, Director, Conservation Engineering Division, NRCS, Washington, D.C
Gary Bennett, Acting Director, National Water Management Center, NRCS, Little Rock, AR
Sonya Keith, National Watershed Operations Program Coordinator, Washington, D.C.
Randy Childress, ASTC-Water Resources, NRCS, Little Rock, AR

From: Karen McCurdy
To: Lee Forbes; Natalie Bue; Shanna Kistler
Subject: [External Sender] Pavement waiver
Date: Wednesday, September 4, 2024 5:45:19 PM
Attachments: image002.png
image003.png
image004.png
image005.png
image006.png

External sender - Think before you click

Hi,
I'm resending this in a shorter string to highlight the pavement waiver for incorporation into your plans, if needed.
Thanks,
Karen

Karen McCurdy, P.E., CFM
Senior Vice President | Environmental

Crafton Tull

Office: 479-636-4838 | Direct: 479-878-2441
901 N. 47th Street, Suite 400
Rogers, AR 72756
www.craftontull.com

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From: Smith, Ralph - FPAC-NRCS, TN <ralph.smith@usda.gov>
Sent: Thursday, August 22, 2024 11:19 AM
To: Smart, Bronson - FPAC-NRCS, UT <bronson.smart@usda.gov>
Subject: Arkansas BIL funded projects

Hello Bronson –

Based on my delegated authority to approve waivers, and given the Chiefs request to expedite the planning process associated with these Arkansas projects:

For PL 83-566 related work tied to the project objective of flood prevention and/or associated with restoring drainage ways, the replacement or repair of existing pavement damaged by

installation of works of improvements or new pavement treatments required due to street/road relocations is permitted. Curbs, gutters, and driveway surfaces destroyed during culvert replacement or other flood prevention measures identified may also be replaced as a part of this project. Pavement measures shall not exceed the dimensions of the existing surfaces being replaced. Utility relocations associated with road relocations and surfacing measures shall also be considered as project costs.

Ralph Smith
Acting Branch Chief
USDA NRCS Watershed
Programs Branch

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Cell: (202) 819-6587
Email: Ralph.Smith@usda.gov

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Attachment B.
10% (Conceptual/Planning-Level) Design Plan Set - Nature-Based Solutions (NBS) Focused Drainage Improvements

Please see attached PDF of Appendix B. 10% (Conceptual/Planning-Level) Design Plan Set - Nature-Based Solutions (NBS) Focused Drainage Improvements.

Attachment C.
USACE Memo - Discount Rate FY 2026

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET, NW
WASHINGTON, DC 20314-1000

REPLY TO
ATTENTION OF

CECW-P

30 October 2025

MEMORANDUM FOR PLANNING COMMUNITY OF PRACTICE

SUBJECT: Economic Guidance Memorandum, 26-01, Federal Interest Rates for Corps of Engineers Projects for Fiscal Year 2026

1. The enclosed information is provided for immediate use. Please note that the interest rate to prioritize for budget development is discussed in the annual Program Development Guidance issued by the Programs Integration Division, not this Economic Guidance Memorandum.

2. Questions related to this memorandum should be addressed to Mr. Nicholas Applegate, CECW-PC, at Nicholas.J.Applegate@usace.army.mil or by telephone at (202) 336-3042.

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for ERIC L. BUSH
Chief, Planning and Policy Division
Directorate of Civil Works

5 Encls
1. Federal Discount Rate
2. Deferred Payment Interest Rates
3. Water Supply Interest Rates
4. Hydropower Interest Rates
5. Delinquent Payment Collection Rate

Printed on Recycled Paper

Federal Discount Rate for Fiscal Year 2026

Project Evaluation and Formulation Rate (Discount Rate): FY 2026 – 3.25%

The Principles and Guidelines states: "Discounting is to be used to convert future monetary values to present values. Calculate present values using the discount rate established annually for the formulation and economic evaluation of plans for water and related land resources." (Section 1.4.11)

The interest rate for discounting, that is, converting benefits and costs to a common time basis, is set each fiscal year in accordance with Section 80 of Public Law 93-251. HQUSACE obtains the discount rate from U.S. Department of the Treasury, which computes it as the average market yields on interest-bearing marketable securities of the United States that have 15 or more years remaining to maturity. The computed rate is effective as of 1 October of each year. It is based on yield data for the entire previous fiscal year, and thus the discount rate for the fiscal year above is based on average yields during the previous fiscal year. According to law the rate may not be raised or lowered more than one quarter of one percentage point in any year.

The table below shows the discount rate historical series going back to 1957. Column headings identify the source of authority for the rates, and not necessarily the organization that actually computed the rates.

Federal Discount Rate for Fiscal Year 2026

FEDERAL DISCOUNT RATES FOR PROJECT FORMULATION AND EVALUATION					
Fiscal Year	Bureau of the Budget (now OMB) Circular A-47	Senate Document No. 97 (1962)	Water Resources Council (WRC) (1968)	Principles & Standards (WRC 1973)	Section 80 WRDA 1974 (Public Law 93-251)
1957-60	2.500%				
1961	2.625%				
1962	2.625%	2.625%			
1963		2.875%			
1964		3.000%			
1965-67		3.125%			
1968		3.250%			
1969		3.250%	4.625%		
1970			4.875%		
1971			5.125%		
1972			5.375%		
1973			5.500%		
1974			5.625%	6.875%	5.625%
1975					5.875%
1976					6.125%
1977					6.375%
1978					6.625%
1979					6.875%
1980					7.125%
1981					7.375%
1982					7.625%
1983					7.875%
1984					8.125%
1985					8.375%
1986					8.625%
1987					8.875%
1988					8.625%
1989					8.875%
1990					8.875%
1991					8.750%
1992					8.500%
1993					8.250%
1994					8.000%
1995					7.750%
1996					7.625%
1997					7.375%
1998					7.125%
1999					6.875%
2000					6.625%
2001					6.375%
2002					6.125%
2003					5.875%
2004					5.625%
2005					5.375%
2006					5.125%
2007					4.875%
2008					4.875%
2009					4.625%
2010					4.375%
2011					4.125%
2012					4.000%
2013					3.750%
2014					3.500%
2015					3.375%
2016					3.125%
2017					2.875%
2018					2.750%

Federal Discount Rate for Fiscal Year 2026

FEDERAL DISCOUNT RATES FOR PROJECT FORMULATION AND EVALUATION					
Fiscal Year	Bureau of the Budget (now OMB) Circular A-47	Senate Document No. 97 (1962)	Water Resources Council (WRC) (1968)	Principles & Standards (WRC 1973)	Section 80 WRDA 1974 (Public Law 93-251)
2019					2.875%
2020					2.750%
2021					2.500%
2022					2.250%
2023					2.500%
2024					2.750%
2025					3.000%
2026					**3.250%**

Deferred Payment Interest Rates and Payment Calculations for Fiscal Year 2026

Normally a non-Federal sponsor is expected to provide its cost share as the funds are needed, that is, as construction proceeds. Under some conditions, a sponsor may seek to defer payment until after construction completion. When payments are deferred, they are made with interest. This enclosure provides interest rates to use in determining the deferred payments, and instructions for computing them.

The necessary conditions for formally seeking deferred payments are verifiable sponsor need and prior concurrence by the Assistant Secretary of the Army (Civil Works) (ASA (CW)). In principle, deferred payments are available for all project authorities (purposes). In practice, because of Corps budget constraints that preclude it from making what are, in effect, loans to sponsors, the Corps finds it difficult to participate in many projects with deferred payments.

There is some flexibility to accommodate limited deferred payments for harbor improvement projects; deferred payments are limited to the 'additional' ten percent sponsor obligation for General Navigation Features (GNF) costs. This 'additional' ten percent GNF cost share is typically a minor portion of a sponsor's total project cost share.

Authority for sponsor-deferred payments is PL 99-662 (WRDA 1986). Provision for deferred payments for flood control and most other project purposes are in Section 103, paragraphs (a)(4), (b), and (k). Authority for deferral of 'additional' ten percent GNF costs is in Section 101, paragraph (a)(2).

In the table below, "Interest Rates for Computing Non-Federal Repayments", the interest rates are based on Section 106 of WRDA 1986, which says that the interest rate applicable to deferred payments will be the yield on Treasury securities having a remaining period to maturity the same as the repayment period selected (and agreed to by ASA (CW)). Thus, if the agreed upon repayment period is twelve years the repayment interest rate will be the yield on securities with twelve years left until maturity.

A detailed discussion of deferred payments and cost sharing is in ER 1165-2-131, Local Cooperation Agreements for New Start Construction Projects. This ER implements the cost sharing provisions of WRDA 1986, and the instructions below, which are continued from previous editions of this EGM, presume knowledge of the ER.

Deferred Payment Interest Rates Fiscal Year 2026

I. **Interest on Deferred Payments**

A. **Deferred payment reimbursed during the construction period**. Interest will be charged on each Federal expenditure made in lieu of non-Federal contributions for the period between the expenditure and the reimbursement, except as noted in paragraph E. below.

B. **Deferred payments reimbursed over a period of time following completion of construction** (reference Sections 103(a)(4), 103(b), and 103(k) of P.L.99-662). Interest will be charged for each Federal expenditure (first costs) made in lieu of non-Federal contributions for the period between the expenditure and the end of construction. The first costs plus this interest will then be amortized over the selected repayment period.

C. **Repayment under section 101(a)(2) of P.L.99-662**. Repayment of up to 10 percent required under this section will not include any interest for the construction period only.

D. **Interest Computation**. Expenditures each month will be totaled and interest computed as though all the expenditures were made at the mid-point of the month. Interest will be compounded annually on the anniversary of the expenditure. Periods of less than one year will be converted to a fraction of a year (interest charge = principal at beginning of period x interest rate x fraction of a year).

E. **Delay of initial payment under sections 101(d) and 103(l) of P.L.99-662**. Delayed initial payments for up to one year approved by the ASA (CW) shall be assessed interest for one-half the period of delay.

II. **Rate of interest to be applied to deferred payments**

A. **Reimbursements during the construction period**. The interest rate will be determined by using the formula specified in section 106 of P.L.99-662. The maturity period shall be equal to length of time between the Federal expenditure and the reimbursement.

B. **Reimbursement after completion of construction**. The rate of interest to be used in computing interest for the construction period and to amortize the total obligation at the start of the repayment period (first cost plus interest) will be the rate determined using the formula in section 106 of P.L.99-662. For example, when the repayment period is 30 years, the interest rate shall be determined by the Secretary of the Treasury, taking into consideration the average market yields on outstanding marketable obligations of the United States with remaining periods of maturity of 30 years during the month preceding the fiscal year in which costs for the construction of the project are first incurred **plus a premium of one-eighth of one percentage point for transaction costs.**

III. **Payment Schedule**. The payments, where reimbursement is made after completion of construction, shall be in equal consecutive annual installments, the first of which shall be due and payable within 30 days after the non-Federal interest is notified by the District Commander that the project or project modification is completed and operational for the purpose(s) for which repayment is being made. Annual installments thereafter will be due and payable on the anniversary date of the date of notification. Except for the first payment, which will be applied solely to the retirement of principal, all installments shall include accrued interest on the unpaid balance at the rate provided above. The last installment shall be adjusted upward or downward when due to assure repayment of all of the indebtedness.

IV. **Five-Year Recalculation of the Interest Rate Applicable to Deferred Payments**. The formula used to determine the interest rate under paragraph II.B above will be used for each recalculation. For example, if the original maturity period is 30 years, then the interest rate for each recalculation will use the current Fiscal Year interest rate for 30 years. Annual payments, however, will be based on the remaining repayment period.

V. **Expenditures between Feasibility Studies and Construction**. Federal expenditures not covered by the FCSA for feasibility studies and made prior to the PCA for construction (PED) will be treated as first year construction costs subject to interest charges based on the preceding paragraphs as though the expenditures were made at the beginning of the first year of construction.

VI. **Projects Authorized for Planning, Engineering, and Design**. Planning and engineering will be cost shared 50-50 in accordance with Section 105(b) of P.L.99-662. Expenditures for design will be treated in accordance with paragraph V. above.

Interest Rates for Computing Non-Federal Repayments
Fiscal Year 2026
(Section 106 of P.L. 99-662)

From and Including	Up To But Not Including	Rate
0 years - 3 months	0 years - 5 months	4-1/8%
0 years - 5 months	0 years - 6 months	4%
0 years - 6 months	0 years - 9 months	3-7/8%
0 years - 9 months	1 years - 3 months	3-3/4%
1 years - 3 months	2 years - 8 months	3-5/8%
2 years - 8 months	3 years - 3 months	3-1/2%
3 years - 3 months	5 years - 3 months	3-5/8%
5 years - 3 months	6 years - 5 months	3-3/4%
6 years - 5 months	7 years - 8 months	3-7/8%
7 years - 8 months	8 years - 11 months	4%
8 years - 11 months	10 years - 5 months	4-1/8%
10 years - 5 months	11 years - 10 months	4-1/4%
11 years - 10 months	13 years - 3 months	4-3/8%
13 years - 3 months	15 years - 0 months	4-1/2%
15 years – 0 months	17 years – 7 months	4-5/8%
17 years - 7 months	30 years – 1 day	4-3/4%

Note: The above interest rates do not include the one-eighth (1/8%) of one-percentage point for transaction costs required by Section 106 of P.L.99-662.

Water Supply Interest Rates for Fiscal Year 2026

The Water Supply Act of 1958 (PL 85-500) established that the Federal government may cooperate with non-Federal interests in their water supply development efforts. This Act established a repayment period of 50 years and a repayment interest rate equal to the nominal interest rate of outstanding Treasury securities of suitable periods to maturity. Section 932 of the Water Resources Development Act of 1986 (PL 99-662) amended the repayment period to 30 years and the interest rate to the yield rate, plus a premium of one-eighth of one percentage point for transactions costs.

I. Water Supply Interest Rates based on PL 99-662 – 4.875% (4.750% + 1/8%)

This interest is relevant for a 30-year repayment period as established in Section 932 of PL 99-662. This rate is used for agreements for storage not "grandfathered" (see following section III), for new storage reallocated to M&I water supply, for surplus water agreements, and for new projects. Repayment amounts must be readjusted every five years using the then current interest rate. For repayment periods other than 30-years see Section II, which follows below.

Water Supply Interest Rates for Fiscal Year 2026

The following table shows an historical series since 1986 for this interest rate.

FISCAL YEAR	INTEREST RATE
1987	7.625%
1988	10.000%
1989	9.250%
1990	8.250%
1991	9.125%
1992	8.125%
1993	7.500%
1994	6.125%
1995	7.750%
1996	6.750%
1997	7.125%
1998	6.750%
1999	5.375%
2000	6.125%
2001	5.875%
2002	5.625%
2003	5.125%
2004	5.500%
2005	5.125%
2006	4.625%
2007	4.875%
2008	4.875%
2009	4.625%
2010	4.125%
2011	4.250%
2012	4.125%
2013	2.875%
2014	3.125%
2015	3.500%
2016	2.750%
2017	2.500%
2018	2.875%
2019	3.000%

Water Supply Interest Rates for Fiscal Year 2026

FISCAL YEAR	INTEREST RATE
2020	2.875%
2021	1.750%
2022	2.000%
2023	2.875%
2024	4.125%
2025	4.625%
2026	**4.875%**

Note: The authorized one-eighth of one percentage point for transactions costs is included in the rates in the values shown in this table.

II. Water Supply Interest Rates – for Repayment Periods other than 30 Years

For repayment periods less than 30 years interest rates are the same as specified under Section 106 of PL 99-662, and shown in the table on page 4 of Enclosure 2. The rate is used for agreements for storage not "grandfathered" (see following Section III), for new storage reallocated to M & I water supply, for surplus water agreements, and for new projects. Repayment amounts must be readjusted every five years using the then current interest rate.

III. Water Supply Interest Rate based on PL 85-500 – 3.196%

These interest rates are determined by the Department of the Treasury in accordance with provisions of the Water Supply Act of 1958, Section 301 (b). They are based on the nominal interest rate – as opposed to the yield – of Treasury securities with 15 or more years to redemption. Although the Water Supply Act was amended for Corps projects by PL 99-662, this interest rate remains relevant for the Bureau of Reclamation projects and some "grandfathered" Corps projects, and thus Treasury continues to report it.

Authorized water supply storage space in projects completed or under construction prior to enactment of PL 99-662 (17 November 1986) are to utilize the rate as established in the 1958 Water Supply Act and are thus "grandfathered." This rate is set at the time construction of the project was initiated. For FY 26 this rate is **3.196%**. While this "grandfathered" rate has no applicability for Corps projects after 1986, the following table shows the historic series.

FISCAL YEAR	INTEREST RATE	FISCAL YEAR	INTEREST RATE	FISCAL YEAR	INTEREST RATE
1959	2.670%	1982	9.352%	2005	8.077%
1960	2.699%	1983	10.051%	2006	7.892%
1961	2.632%	1984	10.403%	2007	7.652%
1962	2.742%	1985	10.898%	2008	7.457%
1963	2.936%	1986	11.070%	2009	7.095%
1964	3.046%	1987	10.693%	2010	6.568%
1965	3.137%	1988	10.371%	2011	6.081%
1966	3.222%	1989	10.250%	2012	5.769%
1967	3.225%	1990	10.075%	2013	5.357%
1968	3.253%	1991	9.920%	2014	5.101%
1969	3.256%	1992	9.737%	2015	4.934%
1970	3.342%	1993	9.503%	2016	4.673%
1971	3.463%	1994	9.319%	2017	4.429%
1972	3.502%	1995	9.226%	2018	4.208%
1973	3.649%	1996	9.134%	2019	4.090%
1974	4.012%	1997	9.012%	2020	3.892%
1975	4.371%	1998	8.874%	2021	3.490%
1976	5.116%	1999	8.703%	2022	3.124%
1977	5.683%	2000	8.542%	2023	3.001%
1978	6.063%	2001	8.469%	2024	3.051%
1979	6.595%	2002	8.315%	2025	3.196%
1980	7.250%	2003	8.270%	**2026**	**3.196%**
1981	8.605%	2004	8.209%		

Hydropower Interest Rate for Fiscal Year 2026

Rate applicable to interest during construction, investment cost repayment, and capitalized O&M costs – 4.750%

This rate is determined by the Department of the Treasury under Secretarial Order RA 6120.2 Paragraph 11 (b) of the Secretary of Energy and Departmental Manual 730 DM 3, superseding Secretarial Order 2929 of the Secretary of the Interior. This rate shown has been adjusted to the nearest 1/8 of 1%.

The table below contains a historical series for the hydropower interest rate.

FISCAL YEAR	INTEREST RATE	FISCAL YEAR	INTEREST RATE
1973	5.500%	2000	5.750%
1974	6.625%	2001	6.250%
1975	6.125%	2002	5.625%
1976	6.625%	2003	5.500%
1977	7.000%	2004	4.875%
1978	7.000%	2005	5.125%
1979	7.500%	2006	4.625%
1980	8.000%	2007	4.875%
1981	8.500%	2008	4.875%
1982	9.000%	2009	4.500%
1983	9.500%	2010	4.000%
1984	10.750%	2011	4.125%
1985	12.375%	2012	4.000%
1986	11.375%	2013	2.750%
1987	8.875%	2014	3.000%
1988	8.500%	2015	3.375%
1989	9.250%	2016	2.625%
1990	8.875%	2017	2.375%
1991	8.750%	2018	2.750%
1992	8.500%	2019	2.875%
1993	7.875%	2020	2.750%
1994	7.125%	2021	1.625%
1995	7.125%	2022	1.875%
1996	7.625%	2023	2.750%
1997	6.875%	2024	4.000%
1998	6.875%	2025	4.500%
1999	6.000%	**2026**	**4.750%**

Delinquent Payment Collection Rate
Article XVI, ER 1165-2-131

Background - Paragraph a, Article XVI of ER 1165-2-131 explains the procedures used to calculate the interest rate for delinquent payment collection, per the Water Resources Development Act of 1986, Section 912 (b) [42 USC 1962d5b note]. Review of this article indicated that the explanation of paragraph a, is not adequately clear for consistent determination of the rate. In addition, the paragraph suggests that the Secretary of the Treasury should determine the interest rate. After reviewing the article, the Department of Treasury has developed the following procedure for the calculation of interest rates.

Procedure - The interest rate used in the collection of delinquent payment under this Article will be equal to the equivalent coupon-issue yield for 13-week Treasury bills in the month immediately preceding the date that the payment became delinquent or auctioned immediately prior to the beginning of each additional three-month period if the delinquency exceeds three months. District offices may obtain the equivalent coupon-issue yield by the Office of Public Debt Accounting, Bureau of the Public Debt at (304) 480-5151. The rate obtained from this office will then be multiplied by 1.5 to determine the interest rate used for repayment of the delinquency. Questions concerning this procedure can be addressed to CECW-PC staff as identified in the cover memo.

Encl 5

Attachment D. Constant-Dollar Undiscounted Cash Flow Tables for Alternatives 1A, 2A, 3A, 4A, 5A, 6A, 1B, 2B, 3B, 4B, 5B, and 6B

Note: Attachment D presents twelve constant-dollar, undiscounted cash-flow tables—one for each of the twelve Action Alternatives (1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B, 5A, 5B, 6A, and 6B). Each table displays year-by-year project cash flows across the full 52-year period of analysis (2 years of implementation + 50 years of evaluated project life). Reported categories include Design/Permitting, Construction, Land Use Conversion, O&M, AAFDRB, and AESB. Annual totals and net benefits are calculated for each year. For simplicity, all Other Costs of Installation (Technical Assistance, Permitting, and NRCS/Sponsor Project Administration) are included within the Year 2 Construction entry. For purposes of economic evaluation, all installation costs—Works of Improvement (construction + real property acquisition + relocation + contingency), Engineering, and Other Costs of Installation—are annualized together in accordance with NRCS NWPM §501.12(C) and OMB Circular A-94. Engineering and Other Costs of Installation are included in total installation cost. Flood-Damage-Reduction Benefits represent avoided damages to structures, contents, vehicles, and roads. AESB values are taken directly from the FEMA *Ecosystem Service Value Updates* (2022) technical manual and then adjusted for inflation for riparian areas ($41,834 per acre per year) and represent non-overlapping ecological functions such as water filtration, erosion control, habitat provision, carbon storage, and cultural services. Hazard-risk-reduction benefits are excluded from AESB to prevent double-counting with flood-damage-reduction benefits. These constant-dollar cash-flow tables are provided in accordance with OMB Circular A-4 §7 (a–b), which requires disclosure of undiscounted streams of costs and benefits. They allow reviewers to see the timing and distribution of costs and benefits across the life of the project. The formal NRCS economic evaluation is based on annualized costs and benefits derived from these cash flows, with results summarized in Economic Tables 5 and 6 (Tables D-19 and D-20) in Section 4.8 of Appendix D, consistent with the methods described in Section 4.5 (Economic Evaluation Results). NMB and BCR by alternative are presented in Table D-14 (Section 4.5.6).

Attachment D - Table 1. Constant-Dollar Undiscounted Cash Flows – Alternative 1A

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$1,932,000	$0	$132,238	$0	$0	$0	$0	$2,064,238	-$2,064,238
2	$0	$9,081,762	$0	$0	$0	$0	$0	$9,081,762	-$9,081,762
3	$0	$0	$0	$32,643	$518,478	$928,715	$1,447,193	$32,643	$1,414,550
4	$0	$0	$0	$32,643	$518,478	$928,715	$1,447,193	$32,643	$1,414,550
5	$0	$0	$0	$32,643	$518,478	$928,715	$1,447,193	$32,643	$1,414,550
6	$0	$0	$0	$32,643	$518,478	$928,715	$1,447,193	$32,643	$1,414,550
7	$0	$0	$0	$32,643	$518,478	$928,715	$1,447,193	$32,643	$1,414,550
8	$0	$0	$0	$32,643	$518,478	$928,715	$1,447,193	$32,643	$1,414,550
9	$0	$0	$0	$32,643	$518,478	$928,715	$1,447,193	$32,643	$1,414,550
10	$0	$0	$0	$32,643	$518,478	$928,715	$1,447,193	$32,643	$1,414,550
11	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
12	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
13	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
14	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
15	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
16	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
17	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
18	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
19	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
20	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
21	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
22	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
23	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
24	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
25	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
26	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
27	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
28	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
29	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
30	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
31	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
32	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
33	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
34	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
35	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
36	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
37	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
38	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
39	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
40	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
41	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
42	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
43	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
44	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
45	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
46	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
47	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
48	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
49	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
50	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
51	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550
52	$0	$0	$0	$22,642	$518,478	$928,715	$1,447,193	$22,642	$1,424,550

Attachment D - Table 2. Constant-Dollar Undiscounted Cash Flows – Alternative 2A

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$379,000	$0	$61,408	$0	$0	$0	$0	$440,408	-$440,408
2	$0	$1,742,592	$0	$0	$0	$0	$0	$1,742,592	-$1,742,592
3	$0	$0	$0	$11,698	$24,920	$175,703	$200,622	$11,698	$188,924
4	$0	$0	$0	$11,698	$24,920	$175,703	$200,622	$11,698	$188,924
5	$0	$0	$0	$11,698	$24,920	$175,703	$200,622	$11,698	$188,924
6	$0	$0	$0	$11,698	$24,920	$175,703	$200,622	$11,698	$188,924
7	$0	$0	$0	$11,698	$24,920	$175,703	$200,622	$11,698	$188,924
8	$0	$0	$0	$11,698	$24,920	$175,703	$200,622	$11,698	$188,924
9	$0	$0	$0	$11,698	$24,920	$175,703	$200,622	$11,698	$188,924
10	$0	$0	$0	$11,698	$24,920	$175,703	$200,622	$11,698	$188,924
11	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
12	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
13	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
14	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
15	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
16	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
17	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
18	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
19	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
20	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
21	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
22	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
23	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
24	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
25	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
26	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
27	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
28	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
29	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
30	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
31	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
32	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
33	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
34	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
35	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
36	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
37	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
38	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
39	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
40	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
41	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
42	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
43	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
44	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
45	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
46	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
47	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
48	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
49	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
50	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
51	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582
52	$0	$0	$0	$9,041	$24,920	$175,703	$200,622	$9,041	$191,582

Attachment D - Table 3. Constant-Dollar Undiscounted Cash Flows – Alternative 3A

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$76,000	$0	$5,075	$0	$0	$0	$0	$81,075	-$81,075
2	$0	$361,925	$0	$0	$0	$0	$0	$361,925	-$361,925
3	$0	$0	$0	$4,732	$58,270	$29,284	$87,554	$4,732	$82,822
4	$0	$0	$0	$4,732	$58,270	$29,284	$87,554	$4,732	$82,822
5	$0	$0	$0	$4,732	$58,270	$29,284	$87,554	$4,732	$82,822
6	$0	$0	$0	$4,732	$58,270	$29,284	$87,554	$4,732	$82,822
7	$0	$0	$0	$4,732	$58,270	$29,284	$87,554	$4,732	$82,822
8	$0	$0	$0	$4,732	$58,270	$29,284	$87,554	$4,732	$82,822
9	$0	$0	$0	$4,732	$58,270	$29,284	$87,554	$4,732	$82,822
10	$0	$0	$0	$4,732	$58,270	$29,284	$87,554	$4,732	$82,822
11	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
12	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
13	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
14	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
15	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
16	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
17	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
18	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
19	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
20	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
21	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
22	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
23	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
24	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
25	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
26	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
27	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
28	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
29	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
30	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
31	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
32	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
33	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
34	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
35	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
36	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
37	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
38	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
39	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
40	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
41	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
42	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
43	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
44	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
45	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
46	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
47	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
48	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
49	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
50	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
51	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515
52	$0	$0	$0	$4,039	$58,270	$29,284	$87,554	$4,039	$83,515

Attachment D - Table 4. Constant-Dollar Undiscounted Cash Flows – Alternative 4A

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$113,000	$0	$11,465	$0	$0	$0	$0	$124,465	-$124,465
2	$0	$528,535	$0	$0	$0	$0	$0	$528,535	-$528,535
3	$0	$0	$0	$1,885	$1,108	$33,886	$34,994	$1,885	$33,109
4	$0	$0	$0	$1,885	$1,108	$33,886	$34,994	$1,885	$33,109
5	$0	$0	$0	$1,885	$1,108	$33,886	$34,994	$1,885	$33,109
6	$0	$0	$0	$1,885	$1,108	$33,886	$34,994	$1,885	$33,109
7	$0	$0	$0	$1,885	$1,108	$33,886	$34,994	$1,885	$33,109
8	$0	$0	$0	$1,885	$1,108	$33,886	$34,994	$1,885	$33,109
9	$0	$0	$0	$1,885	$1,108	$33,886	$34,994	$1,885	$33,109
10	$0	$0	$0	$1,885	$1,108	$33,886	$34,994	$1,885	$33,109
11	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
12	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
13	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
14	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
15	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
16	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
17	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
18	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
19	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
20	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
21	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
22	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
23	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
24	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
25	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
26	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
27	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
28	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
29	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
30	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
31	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
32	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
33	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
34	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
35	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
36	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
37	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
38	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
39	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
40	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
41	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
42	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
43	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
44	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
45	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
46	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
47	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
48	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
49	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
50	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
51	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077
52	$0	$0	$0	$917	$1,108	$33,886	$34,994	$917	$34,077

Attachment D - Table 5. Constant-Dollar Undiscounted Cash Flows – Alternative 5A

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$868,000	$0	$46,414	$0	$0	$0	$0	$914,414	-$914,414
2	$0	$4,096,586	$0	$0	$0	$0	$0	$4,096,586	-$4,096,586
3	$0	$0	$0	$32,716	$61,110	$210,843	$271,953	$32,716	$239,237
4	$0	$0	$0	$32,716	$61,110	$210,843	$271,953	$32,716	$239,237
5	$0	$0	$0	$32,716	$61,110	$210,843	$271,953	$32,716	$239,237
6	$0	$0	$0	$32,716	$61,110	$210,843	$271,953	$32,716	$239,237
7	$0	$0	$0	$32,716	$61,110	$210,843	$271,953	$32,716	$239,237
8	$0	$0	$0	$32,716	$61,110	$210,843	$271,953	$32,716	$239,237
9	$0	$0	$0	$32,716	$61,110	$210,843	$271,953	$32,716	$239,237
10	$0	$0	$0	$32,716	$61,110	$210,843	$271,953	$32,716	$239,237
11	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
12	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
13	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
14	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
15	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
16	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
17	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
18	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
19	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
20	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
21	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
22	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
23	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
24	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
25	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
26	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
27	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
28	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
29	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
30	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
31	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
32	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
33	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
34	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
35	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
36	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
37	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
38	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
39	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
40	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
41	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
42	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
43	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
44	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
45	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
46	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
47	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
48	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
49	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
50	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
51	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721
52	$0	$0	$0	$29,232	$61,110	$210,843	$271,953	$29,232	$242,721

Attachment D - Table 6. Constant-Dollar Undiscounted Cash Flows – Alternative 6A

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$3,369,000	$0	$256,600	$0	$0	$0	$0	$3,625,600	-$3,625,600
2	$0	$15,811,400	$0	$0	$0	$0	$0	$15,811,400	-$15,811,400
3	$0	$0	$0	$83,674	$671,480	$1,378,430	$2,049,911	$83,674	$1,966,236
4	$0	$0	$0	$83,674	$671,480	$1,378,430	$2,049,911	$83,674	$1,966,236
5	$0	$0	$0	$83,674	$671,480	$1,378,430	$2,049,911	$83,674	$1,966,236
6	$0	$0	$0	$83,674	$671,480	$1,378,430	$2,049,911	$83,674	$1,966,236
7	$0	$0	$0	$83,674	$671,480	$1,378,430	$2,049,911	$83,674	$1,966,236
8	$0	$0	$0	$83,674	$671,480	$1,378,430	$2,049,911	$83,674	$1,966,236
9	$0	$0	$0	$83,674	$671,480	$1,378,430	$2,049,911	$83,674	$1,966,236
10	$0	$0	$0	$83,674	$671,480	$1,378,430	$2,049,911	$83,674	$1,966,236
11	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
12	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
13	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
14	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
15	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
16	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
17	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
18	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
19	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
20	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
21	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
22	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
23	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
24	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
25	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
26	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
27	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
28	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
29	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
30	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
31	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
32	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
33	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
34	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
35	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
36	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
37	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
38	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
39	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
40	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
41	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
42	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
43	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
44	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
45	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
46	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
47	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
48	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
49	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
50	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
51	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040
52	$0	$0	$0	$65,870	$671,480	$1,378,430	$2,049,911	$65,870	$1,984,040

Attachment D - Table 7. Constant-Dollar Undiscounted Cash Flows – Alternative 1B

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$41,250	$0	$132,238	$0	$0	$0	$0	$173,488	-$173,488
2	$0	$15,176,512	$0	$0	$0	$0	$0	$15,176,512	-$15,176,512
3	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
4	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
5	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
6	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
7	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
8	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
9	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
10	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
11	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
12	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
13	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
14	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
15	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
16	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
17	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
18	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
19	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
20	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
21	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
22	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
23	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
24	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
25	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
26	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
27	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
28	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
29	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
30	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
31	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
32	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
33	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
34	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
35	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
36	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
37	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
38	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
39	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
40	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
41	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
42	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
43	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
44	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
45	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
46	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
47	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
48	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
49	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
50	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
51	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592
52	$0	$0	$0	$46,987	$518,478	$25,100	$543,578	$46,987	$496,592

Attachment D - Table 8. Constant-Dollar Undiscounted Cash Flows – Alternative 2B

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$3,750	$0	$61,408	$0	$0	$0	$0	$65,158	-$65,158
2	$0	$1,595,842	$0	$0	$0	$0	$0	$1,595,842	-$1,595,842
3	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
4	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
5	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
6	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
7	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
8	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
9	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
10	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
11	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
12	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
13	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
14	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
15	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
16	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
17	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
18	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
19	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
20	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
21	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
22	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
23	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
24	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
25	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
26	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
27	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
28	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
29	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
30	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
31	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
32	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
33	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
34	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
35	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
36	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
37	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
38	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
39	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
40	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
41	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
42	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
43	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
44	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
45	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
46	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
47	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
48	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
49	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
50	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
51	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725
52	$0	$0	$0	$8,745	$24,920	$12,550	$37,470	$8,745	$28,725

Attachment D - Table 9. Constant-Dollar Undiscounted Cash Flows – Alternative 3B

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$3,750	$0	$5,075	$0	$0	$0	$0	$8,825	-$8,825
2	$0	$300,175	$0	$0	$0	$0	$0	$300,175	-$300,175
3	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
4	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
5	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
6	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
7	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
8	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
9	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
10	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
11	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
12	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
13	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
14	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
15	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
16	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
17	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
18	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
19	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
20	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
21	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
22	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
23	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
24	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
25	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
26	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
27	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
28	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
29	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
30	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
31	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
32	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
33	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
34	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
35	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
36	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
37	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
38	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
39	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
40	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
41	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
42	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
43	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
44	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
45	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
46	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
47	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
48	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
49	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
50	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
51	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675
52	$0	$0	$0	$3,962	$58,270	$8,367	$66,637	$3,962	$62,675

Attachment D - Table 10. Constant-Dollar Undiscounted Cash Flows – Alternative 4B

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$3,750	$0	$11,465	$0	$0	$0	$0	$15,215	-$15,215
2	$0	$438,785	$0	$0	$0	$0	$0	$438,785	-$438,785
3	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
4	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
5	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
6	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
7	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
8	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
9	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
10	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
11	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
12	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
13	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
14	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
15	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
16	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
17	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
18	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
19	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
20	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
21	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
22	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
23	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
24	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
25	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
26	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
27	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
28	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
29	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
30	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
31	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
32	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
33	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
34	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
35	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
36	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
37	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
38	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
39	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
40	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
41	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
42	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
43	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
44	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
45	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
46	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
47	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
48	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
49	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
50	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
51	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902
52	$0	$0	$0	$809	$1,108	-$50,201	-$49,093	$809	-$49,902

Attachment D - Table 11. Constant-Dollar Undiscounted Cash Flows – Alternative 5B

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$22,500	$0	$46,414	$0	$0	$0	$0	$68,914	-$68,914
2	$0	$4,570,086	$0	$0	$0	$0	$0	$4,570,086	-$4,570,086
3	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
4	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
5	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
6	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
7	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
8	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
9	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
10	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
11	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
12	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
13	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
14	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
15	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
16	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
17	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
18	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
19	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
20	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
21	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
22	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
23	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
24	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
25	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
26	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
27	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
28	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
29	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
30	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
31	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
32	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
33	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
34	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
35	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
36	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
37	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
38	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
39	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
40	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
41	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
42	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
43	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
44	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
45	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
46	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
47	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
48	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
49	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
50	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
51	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794
52	$0	$0	$0	$30,476	$61,110	$40,161	$101,270	$30,476	$70,794

Attachment D - Table 12. Constant-Dollar Undiscounted Cash Flows – Alternative 6B

Year	Design/Permitting Costs	Construction (Works of Improvement) Costs & Other Costs of Installation	Land Use Conversion Costs	O&M Costs	Avoided Flood Damages	Annual Ecosystem Services Benefits	Total Benefits	Total Costs	Net Benefits
1	$75,000	$0	$256,600	$0	$0	$0	$0	$331,600	-$331,600
2	$0	$22,082,400	$0	$0	$0	$0	$0	$22,082,400	-$22,082,400
3	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
4	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
5	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
6	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
7	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
8	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
9	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
10	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
11	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
12	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
13	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
14	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
15	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
16	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
17	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
18	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
19	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
20	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
21	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
22	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
23	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
24	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
25	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
26	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
27	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
28	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
29	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
30	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
31	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
32	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
33	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
34	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
35	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
36	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
37	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
38	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
39	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
40	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
41	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
42	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
43	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
44	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
45	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
46	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
47	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
48	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
49	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
50	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
51	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478
52	$0	$0	$0	$90,979	$671,480	$35,977	$707,458	$90,979	$616,478

Appendix E.
Other Supporting Information

E-1. USFWS Information for Planning and Consultation (IPaC) Reports

E-2. Cultural Resources Literature and Records Search Desktop Study Report (Redacted)

E-3. Biological Habitat Assessment Report

E-4. Waivers

E-1.
USFWS Information for Planning and Consultation (IPaC) Reports

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Arkansas and Louisiana



Local offices

Louisiana Ecological Services Field Office

(337) 291-3100
(337) 291-3139

200 Dulles Drive
Lafayette, LA 70506

Arkansas Ecological Services Field Office

(501) 513-4470
(501) 513-4480

110 South Amity Suite 300
Conway, AR 72032-8975

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. 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.

The following species are potentially affected by activities in this location:

Mammals

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

Birds

NAME	STATUS
Eastern Black rail Laterallus jamaicensis jamaicensis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover Charadrius melodus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened

NOT FOR CONSULTATION

Red-cockaded woodpecker Dryobates borealis — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/7614

rufa red knot Calidris canutus rufa — Threatened
Wherever found
There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/1864

Reptiles

NAME	STATUS
Alligator snapping turtle Macrochelys temminckii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

Clams

NAME	STATUS
Pink mucket (pearlymussel) Lampsilis abrupta Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7829	Endangered

Insects

NAME	STATUS
Monarch butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Flowering Plants

NAME	STATUS
Pondberry Lindera melissifolia Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1279	Endangered

NOT FOR CONSULTATION

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management

- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs
The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
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. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

NOT FOR CONSULTATION

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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "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.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

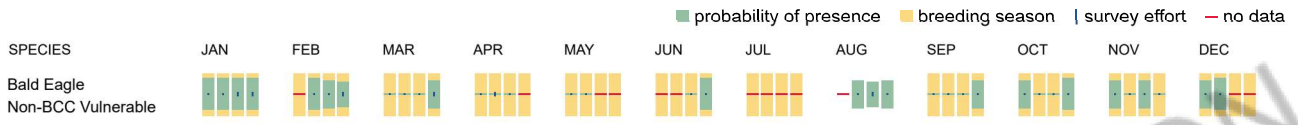
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence 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 an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 line or no data line (red horizontal) 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 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 and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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.

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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.

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

Survey Timeframe

NOT FOR CONSULTATION

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.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs
The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
American Golden-Plover Pluvialis dominica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
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. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Brown-headed Nuthatch Sitta pusilla This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Jul 15
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25

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Chuck-will's-widow Antrostomus carolinensis This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 10 to Jul 10
Henslow's Sparrow Centronyx henslowii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds elsewhere
Le Conte's Sparrow Ammospiza leconteii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
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
Little Blue Heron Egretta caerulea This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 10 to Oct 15
Pectoral Sandpiper Calidris melanotos This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Prothonotary Warbler Protonotaria citrea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
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

NOT FOR CONSULTATION

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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "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.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

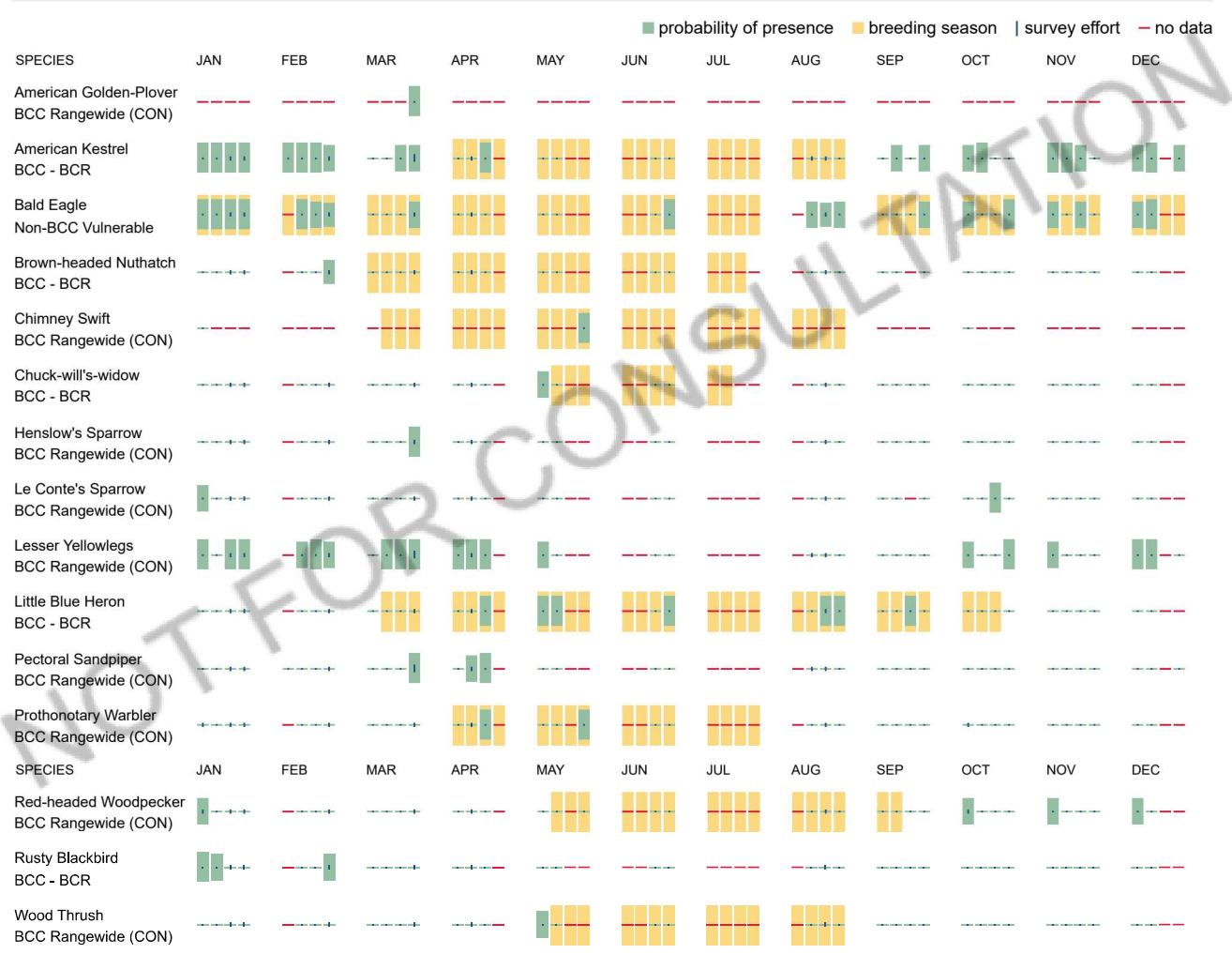
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



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Migratory Bird FAQs

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

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed 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 list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

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) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection 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, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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 to 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, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), 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 Bald and Golden Eagle Protection 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 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 BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

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.

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 look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 does not represent all birds present in your project area. 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 and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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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.

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.

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.

Facilities

National Wildlife Refuge lands

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.

This location overlaps the following National Wildlife Refuge lands:

LAND	ACRES
OVERFLOW NATIONAL WILDLIFE REFUGE	13,566.89 acres

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

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Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480

In Reply Refer To: 07/30/2026 14:27:45 UTC
Project Code: 2026-0123044
Project Name: City of Wilmot Area

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2026-0123044
Project Name: City of Wilmot Area
Project Type: Restoration / Enhancement of Waterbody
Project Description: Install onsite/local stormwater bioretention cells, upgrade stormwater collection/minor drainage components, and replace conveyance/major drainage components with Stream Management Corridors (SMCs) (i.e. restored stream/geomorphic floodplain/riparian buffer inside a flood control channel coupled with geomorphic culverts or bridges) to prevent flood damage in the city for storms up to the 100-year, 24-hour event for the 50-year life of the Project.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.0577485,-91.57140302860205,14z



Counties: Ashley County, Arkansas

ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

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

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
Tricolored bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

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

REPTILES

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

CLAMS

NAME	STATUS
Pink mucket (pearlymussel) *Lampsilis abrupta* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7829	Endangered

INSECTS

NAME	STATUS
Monarch butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Pondberry *Lindera melissifolia*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1279

CRITICAL HABITATS

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

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

IPAC USER CONTACT INFORMATION

Agency: Wilmot city
Name: Cody Vicenik
Address: PO Box 1282
City: Humble
State: TX
Zip: 77347
Email cvicenik@headwayenviro.com
Phone: 7132089096

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Natural Resources Conservation Service

E-2.
Cultural Resources Literature and Records Search Desktop Study Report (Redacted)

CULTURAL RESOURCES LITERATURE AND RECORDS SEARCH FOR THE WILMOT WATERSHED DESKTOP STUDY, ASHLEY COUNTY, ARKANSAS

Prepared for:

Headway Environmental
219 Brown Lane
Houston, Texas 72022

Prepared by:

Andrew Saatkamp, MA, RPA
Commonwealth Heritage Group, LLC d/b/a Chronicle Heritage
91 Tillman Street
Memphis, Tennessee 38111
Project No. 23-PC-00373

DECEMBER 2023

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INTRODUCTION

At the request of Headway Environmental (Headway), Commonwealth Heritage Group, LLC d/b/a Chronicle Heritage (Chronicle) conducted a cultural resources literature and records search (a.k.a., a "desktop" study) for the Wilmot Watershed project area in Ashley County, Arkansas. The goal of a desktop study is to identify all known cultural resources within the study area and to develop a sense of the unknown/unrecorded cultural resources that can be expected to exist within the study area.

A desktop study includes conducting a standard Phase I cultural resources background research; no fieldwork is required. The information provided is intended to assist project managers in planning the proposed undertaking. In the event that a standard Phase I cultural resources field survey becomes necessary, the information from the desktop study may be recycled (assuming there is not a lengthy time of duration between the two studies).

SETTING

The Wilmot Watershed Area of Potential Effect (APE) covers approximately 125,000-ac. in eastern Ashley County, from Montrose south to the Louisiana state line, and from near the Ashley County line west to the Overflow National Wildlife Refuge (Figures 1 and 2). The project area can be identified on the Snyder, Mist, Wilmot NW, Wilmot SW, Wilmot, and Portland, AR 7.5-min. quads. Under the township-range system, the study area is located in portions of Township 15 South, Range 4 West (T15S R4W), T16S R4W, T17S R4W, T18S R4W, T118S R4W, T16S R5W, T17S R5W, T18S R5W, T19S R5W, T17S R6W, T18S R6W, and T19S R6W.

ARKANSAS ARCHEOLOGICAL SURVEY RECORDS

PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

An on-line review of the Automated Management of Archeological Site Data in Arkansas (AMASDA) database managed by the Arkansas Archeological Survey (ARAS) revealed that there are 118 previously recorded archaeological sites mapped within the Wilmot Watershed APE (Figure 3; Table 1). All of the archaeological sites within the project area are of "unknown" NRHP eligibility status.

Table 1. Previously recorded sites in the Wilmot Watershed APE.

Site Number	Site Cultural Affiliation	USGS 7.5-min. quad
3AS0008	48--Mississippi Period	
3AS0010	12--Baytown Period ++ 26--Coles Creek (Period/Culture) ++ 90--Anglo-American ++ 102--(AT) Pioneer Settlmt, Agriculture ++ 134--Plaquemine Period	
3AS0011	72--Prehistoric	
3AS0012	96--Historic Period ++ 142--Unknown Cultural Affiliation	
3AS0014	72--Prehistoric	
3AS0030	72--Prehistoric	
3AS0033	72--Prehistoric	
3AS0042	72--Prehistoric	
3AS0057	72--Prehistoric	
3AS0075	72--Prehistoric	
3AS0078	72--Prehistoric	
3AS0080	72--Prehistoric	
3AS0081	72--Prehistoric	

Site Number	Site Cultural Affiliation	USGS 7.5-min. quad
3AS0084	67--Poverty Point Culture ++ 79--Tchula Period	[redacted]
3AS0085	12--Baytown Period ++ 26--Coles Creek (Period/Culture) ++ 47--Marksville (Period/Culture) ++ 85--Woodland Period ++ 134--Plaquemine Period	
3AS0087	72--Prehistoric	
3AS0089	72--Prehistoric	
3AS0090	72--Prehistoric	
3AS0091	72--Prehistoric	
3AS0093	72--Prehistoric	
3AS0094	72--Prehistoric	
3AS0096	72--Prehistoric	
3AS0097	72--Prehistoric	
3AS0098	72--Prehistoric	
3AS0100	12--Baytown Period ++ 26--Coles Creek (Period/Culture) ++ 90--Anglo-American ++ 100--(AT) Pioneer Settlmt ++ 134--Plaquemine Period ++ 149--(AT) Dev Settl	
3AS0101	72--Prehistoric	
3AS0102	72--Prehistoric	
3AS0103	83--Wilmot Phase ++ 197--Protohistoric, 1400-1650 "hamlets"	
3AS0106	72--Prehistoric	
3AS0107	72--Prehistoric	
3AS0108	72--Prehistoric	
3AS0111	72--Prehistoric	
3AS0112	72--Prehistoric	
3AS0113	72--Prehistoric	
3AS0114	72--Prehistoric	
3AS0115	7--Archaic, Late	
3AS0116	72--Prehistoric	
3AS0117	72--Prehistoric	
3AS0120	7--Archaic, Late	
3AS0121	72--Prehistoric	
3AS0123	72--Prehistoric	
3AS0124	72--Prehistoric	
3AS0125	72--Prehistoric	
3AS0126	72--Prehistoric	
3AS0127	72--Prehistoric	
3AS0128	72--Prehistoric	
3AS0129	7--Archaic, Late	
3AS0130	72--Prehistoric	
3AS0131	72--Prehistoric	
3AS0132	72--Prehistoric	
3AS0133	72--Prehistoric	
3AS0137	72--Prehistoric	
3AS0138	72--Prehistoric	
3AS0139	72--Prehistoric	
3AS0140	83--Wilmot Phase ++ 197--Protohistoric, 1400-1650 "hamlets"	

Site Number	Site Cultural Affiliation	USGS 7.5-min. quad
3AS0141	12--Baytown Period ++ 26--Coles Creek (Period/Culture) ++ 47--Marksville (Period/Culture) ++ 83--Wilmot Phase ++ 134--Plaquemine Period ++ 197--Protohistoric, 1400-1650 "hamlets"	[redacted]
3AS0142	48--Mississippi Period	
3AS0143	72--Prehistoric	
3AS0144	72--Prehistoric	
3AS0145	72--Prehistoric	
3AS0146	72--Prehistoric	
3AS0147	83--Wilmot Phase ++ 197--Protohistoric, 1400-1650 "hamlets"	
3AS0148	72--Prehistoric	
3AS0149	72--Prehistoric	
3AS0150	83--Wilmot Phase ++ 197--Protohistoric, 1400-1650 "hamlets"	
3AS0151	72--Prehistoric	
3AS0153	72--Prehistoric	
3AS0154	52--Mississippian, Early ++ 134--Plaquemine Period	
3AS0157	72--Prehistoric	
3AS0177	12--Baytown Period	
3AS0178	73--Protohistoric, 1400-1650 "towns" ++ 83--Wilmot Phase	
3AS0180	72--Prehistoric	
3AS0182	72--Prehistoric ++ 96--Historic Period	
3AS0183	1--Archaic Period	
3AS0187	72--Prehistoric	
3AS0188	12--Baytown Period ++ 98--(AT) Dev Settl, Rural, Agriculture ++ 134--Plaquemine Period	
3AS0189	47--Marksville (Period/Culture)	
3AS0192	7--Archaic, Late	
3AS0193	7--Archaic, Late	
3AS0194	1--Archaic Period ++ 52--Mississippian, Early	
3AS0196	134--Plaquemine Period	
3AS0200	72--Prehistoric	
3AS0203	72--Prehistoric	
3AS0213	12--Baytown Period	
3AS0219	7--Archaic, Late ++ 34--Dalton (Period/Culture) ++ 51--Mississippian ++ 67--Poverty Point Culture ++ 134--Plaquemine Period	
3AS0220	1--Archaic Period ++ 86--Woodland, Early ++ 90--Anglo-American	
3AS0222	100--(AT) Pioneer Settlmt ++ 140--Afro-American ++ 149--(AT) Dev Settl	
3AS0223	1--Archaic Period	
3AS0224	1--Archaic Period	
3AS0337	1--Archaic Period	
3AS0355	1--Archaic Period ++ 12--Baytown Period ++ 88--Woodland, Late ++ 140--Afro-American ++ 149--(AT) Dev Settl	
3AS0357	7--Archaic, Late ++ 85--Woodland Period ++ 98--(AT) Dev Settl, Rural, Agriculture	
3AS0358	72--Prehistoric	
3AS0370	72--Prehistoric	
3AS0379	72--Prehistoric	

Site Number	Site Cultural Affiliation	USGS 7.5-min. quad
3AS0382	98--(AT) Dev Settl, Rural, Agriculture	[redacted]
3AS0383	98--(AT) Dev Settl, Rural, Agriculture	
3AS0388	96--Historic Period	
3AS0392	85--Woodland Period	
3AS0400	96--Historic Period	
3AS0404	96--Historic Period	
3AS0405	96--Historic Period	
3AS0406	96--Historic Period	
3AS0408	96--Historic Period	
3AS0409	96--Historic Period	
3AS0411	140--Afro-American	
3AS0412	96--Historic Period	
3AS0413	96--Historic Period	
3AS0414	96--Historic Period	
3AS0428	96--Historic Period	
3AS0429	140--Afro-American	
3AS0430	96--Historic Period	
3AS0436	98--(AT) Dev Settl, Rural, Agriculture	
3AS0437	12--Baytown Period ++ 47--Marksville (Period/Culture) ++ 87--Woodland, Middle ++ 96--Historic Period	
3AS0465	96--Historic Period	
3AS0466	96--Historic Period	
3AS0467	96--Historic Period	
3AS0468	96--Historic Period	

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Per the AMASDA project records there have been 25 previous cultural resource investigations within the Wilmot Watershed APE (Figure 4; Table 2). At least 1,150-ac. (465 ha) of the study area appears to have been previously surveyed for cultural resources; note however that this represents only a small fraction (0.9 percent) of the total project area.

Table 2. Previous cultural resource investigations within the Wilmot Watershed APE.

AMASDA Number	Project Name	Year	Investigating Entity	Total Hectare of Project	Project archeologists
250	Fifty Miles an Hour Site (3AS189) Test Excavation	1975-00-00	Arkansas Archeological Survey - UAM Station	0	188--Stacy, V. Pheriba
262	Grampus Mound Site (3AS84) Test Excavation	1968-00-00	Arkansas Archeological Survey	0	122--McClurkan, Burney B.
514	Felsenthal and Overflow Seismic Transects	1985-00-00	Historic Preservation Associates	0	104--Klinger, Timothy C. ++ 23--Cande, Robert F. ++ 80--Hinkle, Kathleen
622	Montrose Wastewater Facilites	1977-00-00	Arkansas Archeological Survey	7.2	96--Jones, Robert

AMASDA Number	Project Name	Year	Investigating Entity	Total Hectare of Project	Project archeologists
1165	Wilson Site, 3AS85, Excavation	1969-00-00	Arkansas Archeological Survey - UAM Station	0	171--Rolingson, Martha
1383	Overflow National Wildlife Refuge Survey	1988-00-00	Interagency Archeological Services, Atlanta	28	288--Anderson, David G.
1427	Overflow National Wildlife Refuge, Road & Levee Improvements	1989-00-00	Arkansas Archeological Survey - UAM Station	0	95--Jeter, Marvin D.
1636	Catfish Processing Plant & Outfall Pipeline, Portland	1990-00-00	S.P.E.A.R.S.	16	201--Waddell, David
3339	B & S Farms Partnership Pipeline (PIF)	1995-00-00	Little Rock District, Corps of Engineers	0	221--Riggs, John
3402	A.H. Pugh Land leveling (PIF)	1995-00-00	Little Rock District, Corps of Engineers	18	221--Riggs, John
3405	Mary Dean Pugh Leveling (PIF)	1995-00-00	Little Rock District, Corps of Engineers	0	221--Riggs, John
3406	Mary Hawkins Leveling (PIF)	1995-00-00	Little Rock District, Corps of Engineers	0	221--Riggs, John
4087	Mike Adams Leveling (PIF)	1999-00-00	Natural Resources Conservation Services	300	221--Riggs, John
4088	Gary Cochran Pipeline (PIF)	1999-00-00	Natural Resources Conservation Services	0	221--Riggs, John
4160	Robert Dunigan Subsoiling (PIF)	1999-00-00	Natural Resources Conservation Services	27	221--Riggs, John
5193	Overflow Creek Relief Structure and Approaches (PIF)	2006-00-00	Arkansas Highway & Transportation Department	0	358--McAlexander, W.E. Jr
5771	County Road 30 - Parkdale Shoulder Improvements (PIF)	2009-00-00	Arkansas Highway & Transportation Department	0	358--McAlexander, W.E. Jr
6247	Hwy 165 Str & Apprs (Montrose)(S) [PIF]	2011-00-00	Arkansas Highway & Transportation Department		358--McAlexander, W.E. Jr
6868	City of Portland Water Systems, Ashley County	2016-00-00	Panamerican Consultants, Inc.	0.56	427--Albertson, Eric
7360	Montrose - Hwy 293 (Widening)	2022-00-00	ARDOT	31.6	688--Shields, Lane Wm.
7459	Snyder-Lake Village (Passing Lanes & Reconst.) (Hwy. 82)	2003-00-00	AHTD (ARDOT)		430--Hughes, Milton
7464	Montrose-Lake Village Sel. Secs. (S)	2019-00-00	ARDOT	35.9	610--Shields, William Lane
7702	Hamburg - Montrose (S)	2019-00-00	AHTD		712--Kennedy, Jason

AMASDA Number	Project Name	Year	Investigating Entity	Total Hectare of Project	Project archeologists
7920	22-10225 / Ashley Solar	2021-00-00	Stone Point Services, LLC	0.05	686--Welch, Danny ++ 702--Riley-Starr, Chelsea

ARKANSAS HISTORIC PRESERVATION PROGRAM RECORDS

A review of the records on the Arkansas Historic Preservation Program (AHPP) online database was conducted. Importantly, this research revealed that there are 34 previously recorded historic properties (mostly structures) within the Wilmot Watershed APE (Table 3; Figure 4).

Seven of the AHPP properties are listed on the National Register of Historic Places (NRHP), see below. Four of the AHPP properties are considered eligible for listing on the NRHP: the Beach Creek Baptist Church, the Shady Grove AME Church, the William De Yambert Gin, and the Portland Jail. Nine of the AHPP properties are of unknown NRHP status and the remaining 14 are considered not eligible.

Table 3. AHPP listed properties within the Wilmot Watershed APE.

Resource #	Name	Alternate Name	Address	Town	NRHP status
AS0006	Henry C. Dade's Ferry	Bloomers Ferry/Alligator Bluff			unknown
AS0009	Fisher Cabin			Portland	unknown
AS0021	John P. Fisher House	Holland House	CR 350	Portland	listed
AS0023	Normandy Plantation Farm				unknown
AS0025	Poplar Bluff Community			Parkdale	unknown
AS0030	Sandy Point			Wilmot	unknown
AS0035	Wilmot buildings	Drug store/bank/HUD tracking #94959	US 165	Wilmot	ineligible
AS0042	Bank of Wilmot	USDA-RD Tracking #94959	2826 US 165	Wilmot	ineligible
AS0043	Wilmot Pool Hall & Hotel		US 165	Wilmot	ineligible
AS0046	Pugh House		205 Moon Street	Portland	listed
AS0047	Dean House		216 Moon Street	Portland	listed
AS0051	Parkdale Baptist Church		137 Bride Street	Parkdale	listed
AS0052	Bank of Parkdale		Main Street	Parkdale	unknown
AS0054	D.H. Hayes & Son		Main Street	Parkdale	unknown
AS0056	Tweehols Store		Main Street	Parkdale	unknown
AS0057	Barnes Gin		Oak Circle	Parkdale	ineligible
AS0058	Parkdale Methodist Church		Church Street	Parkdale	listed

Resource #	Name	Alternate Name	Address	Town	NRHP status
AS0059	Dr. Robert George Williams House		AR 8	Parkdale	listed
AS0088	Dr. M.C. Hawkins House		4684 AR 8	Parkdale	listed
AS0101	Brooks Dipping Vat		2246 Ashley CR 69	Portland	ineligible
AS0102	Wilmot Water Tower		Main Street	Wilmot	ineligible
AS0109	W.B. De Yambert Gin		Bayou Street	Wilmot	eligible
AS0110	Shady Grove AME Church	Dexter Lodge #115	Harris Street	Wilmot	eligible
AS0147	Jail		Moon Street	Portland	eligible
AS0150	Wilmot Methodist Church		201 Lake Street	Wilmot	ineligible
AS0151		drug store/Masonic hall	US 165	Wilmot	ineligible
AS0152		general store	US 165	Wilmot	ineligible
AS0153		grocery, dry goods and crockery store	US 165	Wilmot	ineligible
AS0154	De Yambert's		US 165	Wilmot	ineligible
AS0176	Heritage Manor Housing	HUD Tracking #96061	404 S. Second Street	Wilmot	ineligible
AS0178	House at 112 N. Wilhite Street	Doe Tracking #96491	112 N. Wilhite Street	Wilmot	unknown
AS0181	de Yampert House			Wilmot	ineligible
AS0182	Wilmot Post Office		202 McCombs Street	Wilmot	ineligible
AS0207	Beech Creek Baptist Church		CR 335	Parkdale	eligible

NATIONAL REGISTER OF HISTORIC PLACES LISTINGS

There are currently seven listed properties within the NRHP within the Wilmot Watershed APE:

- the Dean House (#82000797, AHPP #AS0047)
- Dr. M.C. Hawkins House (#96000310, AHPP #AS0088)
- Dr. Robert George Williams House (#84000002, AHPP #AS0059)
- John P. Fisher House (#94001141, AHPP #AS0021)
- Parkdale Baptist Church (#906001285, AHPP #AS0051)
- Parkdale Methodist Church (#07000505, AHPP #AS0058)
- the Pugh House (#82000798, AHPP #AS0046)

No archaeological sites within the APE are listed on the NRHP.

CEMETERIES

The Arkansas Department of Transportation (ARDOT) has a georeferenced database of known cemeteries throughout the state of Arkansas. Review of this database reveals that there are 26 cemeteries within the Wilmot Watershed APE (Figure 5). None of these cemeteries are named in the database. Their locations appear to be pulled from USGS 7.5-min topographic quads.

GIS SHAPE FILES

Shape files of the locations of the resources discussed in this text can be provided, contact asaatkamp@chronicleheritage.com to obtain them. Note that only X-Y point data are available for each resource (i.e., polygonal data are not available, they would have to be generated by us).

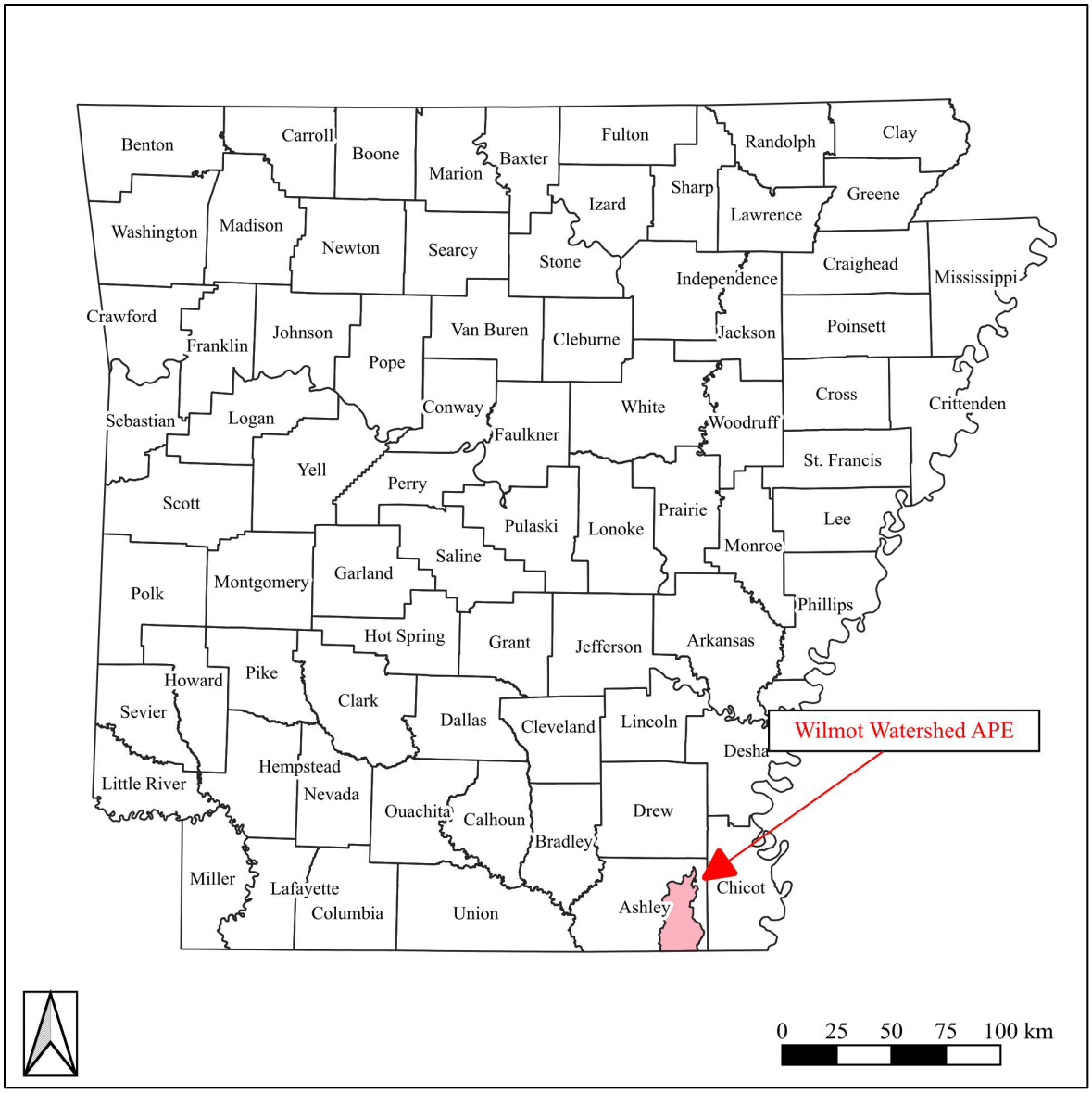


Figure 1. Wilmot Watershed project area location.

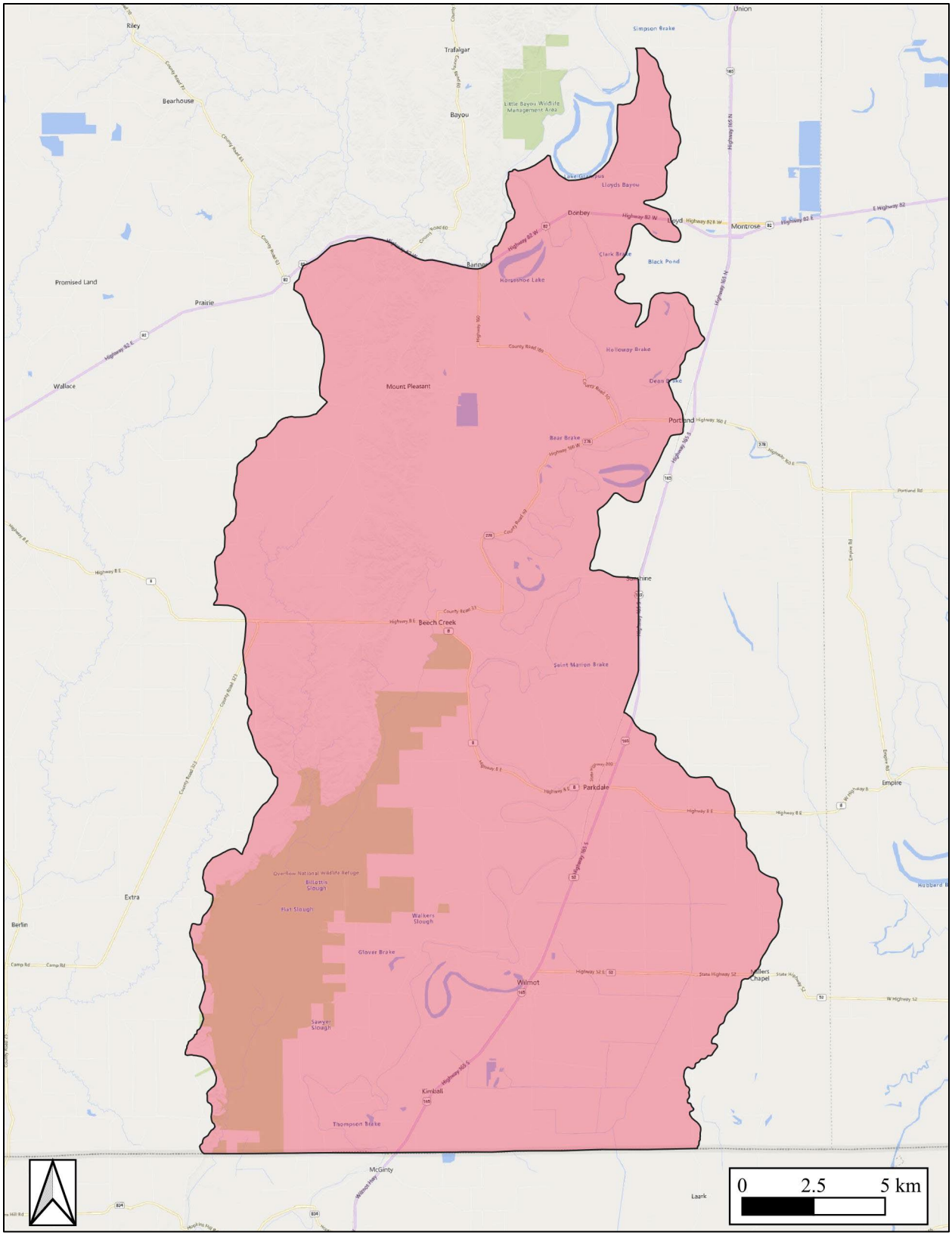


Figure 2. Wilmot Watershed APE (base map courtesy of Bing Maps).

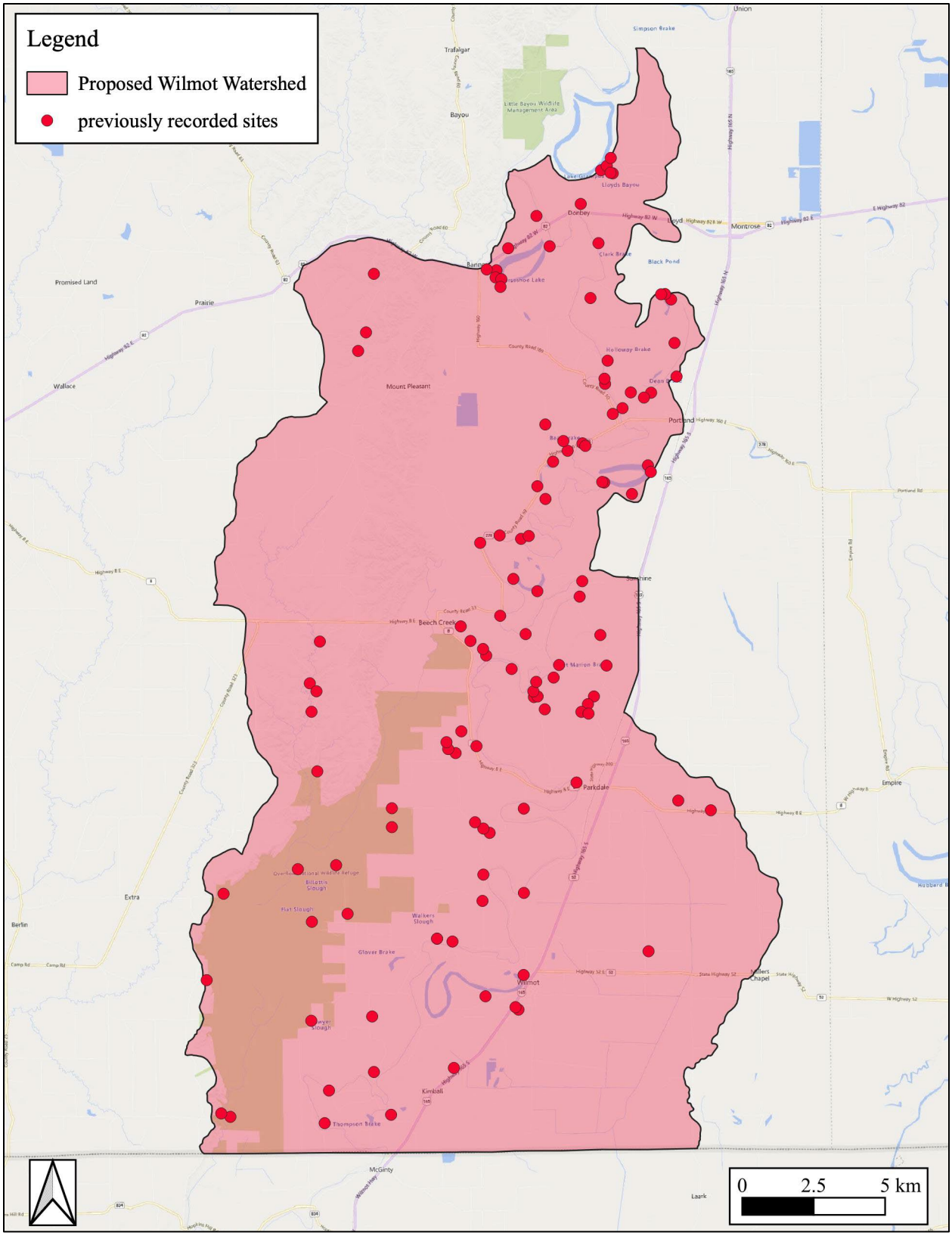


Figure 3. Distribution of previously recorded archaeological sites within the Wilmot Watershed APE (base map courtesy of Bing Maps).

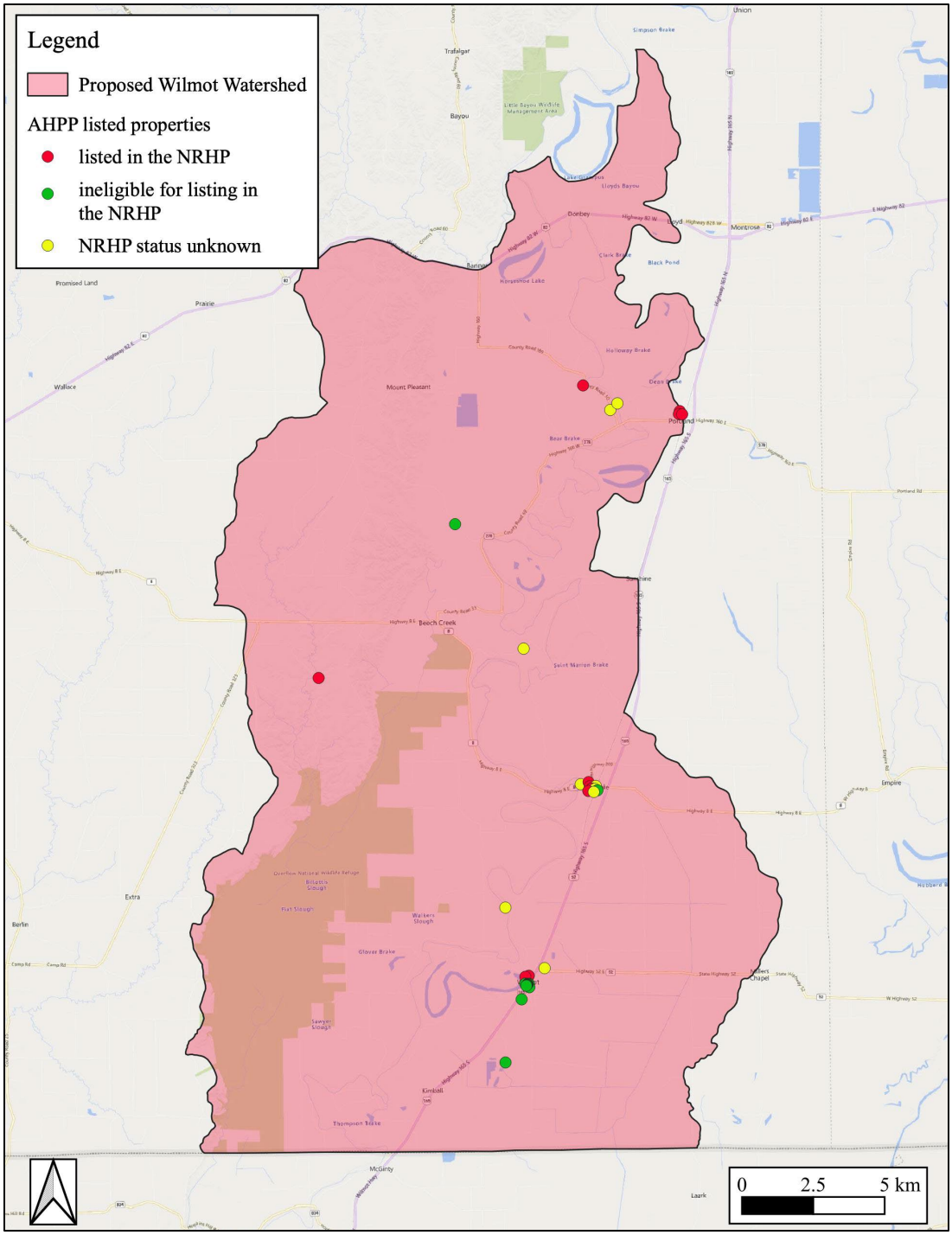


Figure 4. Distribution of AHPP listed properties within the Wilmot Watershed APE (base map courtesy of Bing Maps).

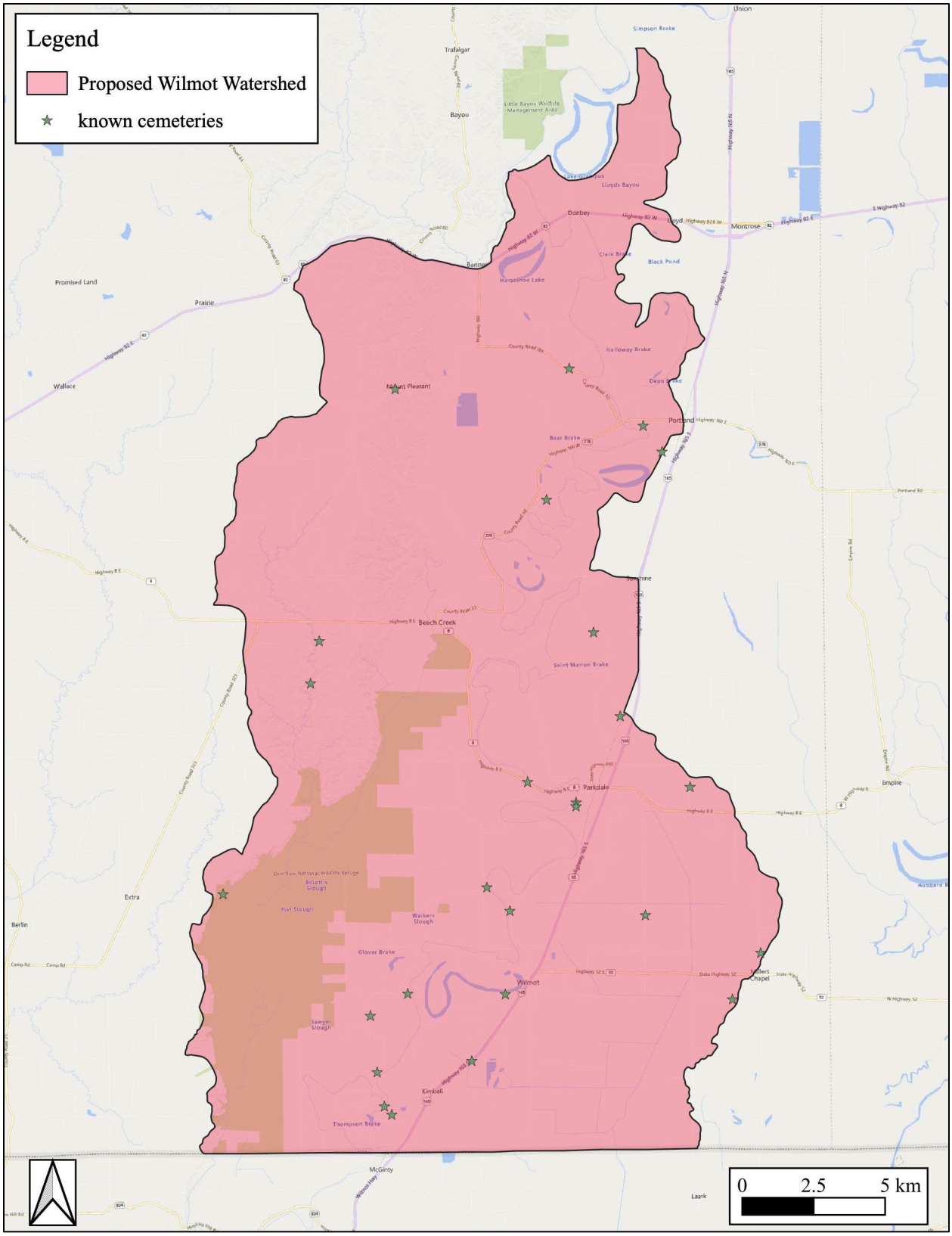


Figure 5. Distribution of cemeteries within the Wilmot Watershed APE per the ARDOT database (base map courtesy of Bing Maps).

E-3.
Biological Habitat Assessment Report

Headway Environmental™

Biological Habitat Assessment

City of Wilmot Area Project

Kenny Carothers
Cody Vicenik
August 5, 2026

Biological Habitat Assessment:
City of Wilmot Area Project

Prepared by:
Kenny Carothers
Cody Vicenik
Headway Environmental
3631 Far West Boulevard
Ste 117-309
Austin TX 78731

Prepared for:
Arkansas Black Mayors Association
300 Spring Street Building, Suite 1015
Little Rock, Arkansas 72201

August 5, 2026

August 5, 2026

Arkansas Black Mayors Association
300 Spring Street Building, Suite 1015
Little Rock, Arkansas 72201

EXECUTIVE SUMMARY: Biological Habitat Assessment, City of Wilmot Area

Headway Environmental (Headway) has completed a Biological Habitat Assessment (BHA) for the City of Wilmot Area Watershed Plan–Environmental Assessment, located within the Overflow Creek–Bayou Bartholomew and Camp Bayou Canal watersheds in Ashley County, Arkansas (the Project). The Project includes drainage and stormwater infrastructure improvements within the Wilmot and Parkdale areas, including installation of stormwater bioretention cells, upgrades to stormwater collection and minor drainage components, and replacement of major drainage components with Stream Management Corridors, geomorphic culverts, or bridges. This report summarizes the BHA results.

Based on our preliminary assessment, the following table lists the special-status species (threatened, endangered, proposed, or candidate) potentially having habitat ranges or potential habitat within or near the Survey area and whether Project activities have the potential to impact these species.

Species Name	**Status**	**Recommended Effect Determination**
Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered*	*Not likely to adversely affect*
Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*)	Threatened	*No effect*
Piping Plover (*Charadrius melodus*)	Threatened	*No effect*
Rufa Red Knot (*Calidris canutus rufa*)	Threatened	*No effect*
Alligator Snapping Turtle (*Macrochelys temminckii*)	Proposed Threatened*	*No effect*
Pink Mucket (pearlymussel) (*Lampsilis abrupta*)	Endangered	*May affect, not likely to adversely affect*
Monarch Butterfly (*Danaus plexippus*)	Proposed Threatened*	*No effect*
Pondberry (*Lindera melissifolia*)	Endangered	*No effect*

**The above recommended effect determinations are provided to support the lead federal agency's evaluation of proposed species under Section 7(a)(4) of the Endangered Species Act. Proposed species are not yet listed under the ESA and are therefore not subject to Section 7(a)(2) consultation unless subsequently listed prior to completion of the federal action.*

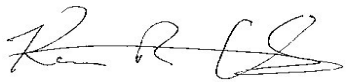
In a letter dated August 4, 2026, the USFWS concurred with the may affect, not likely to adversely affect determination for the pink mucket.

Upon conducting a site visit and documenting habitat types within the Survey area, it is the professional opinion of Headway that migratory/nesting birds are present within the Survey area; therefore, Headway recommends certain mitigation measures to be implemented during Project construction in order to minimize and avoid impacts to special-status species. No potential habitat for the federally listed species identified in the above table was identified within the Survey area, and no further actions regarding these species are recommended.

Please contact either Kenny Carothers at kcarothers@headwayenviro.com/512-800-9895, or Cody Vicenik at cvicenik@headwayenviro.com/713-208-9096 to discuss any questions regarding the BHA results.

Sincerely,

Headway Environmental



Kenny Carothers | President
Senior Ecologist



Cody Vicenik | Field Lead

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Appendix A. Figures
Appendix B. USFWS IPaC Report, Determination Key Documentation, USFWS Concurrence Letter, and AGFC Code Book Regulation P1.01 Endangered Species List, Animals
Appendix C. Site Visit Photographs

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Introduction

Project Location and Description

This report presents the results of the Biological Habitat Assessment (BHA) conducted by Headway Environmental (Headway) on July 27, 2026, for the City of Wilmot Area Project (Project), located within an approximately 745-acre area encompassing portions of Wilmot and Parkdale in Ashley County, Arkansas (Survey area). The Project is located within Townships 18 and 19 South, Ranges 4 and 5 West, Ashley County, Arkansas, as shown on the Wilmot and Portland, Arkansas (2024) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Appendix A, Figure 2). Project activities include drainage and stormwater infrastructure improvements within the Wilmot and Parkdale areas, including installation of stormwater bioretention cells, upgrades to stormwater collection and minor drainage components, and replacement of major drainage components with Stream Management Corridors, geomorphic culverts, or bridges. The surrounding land use generally consists of extensive cultivated cropland, wooded and riparian tracts along Bayou Bartholomew and drainageways, scattered rural residences, and low-density development. The Project location vicinity map is provided in Appendix A, Figure 1. Aerial imagery of the Survey area is provided in Appendix A, Figure 3.

The elevation of the Survey area ranges from approximately 90 to 110 feet above mean sea level (AMSL) and is characterized by generally low-relief terrain, with localized relief along Bayou Bartholomew and associated drainageways. Existing disturbances within the Survey area include developed roadways, utilities, stormwater conveyance features, and adjacent agricultural and urban land uses.

The Survey area is mapped by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) as being within Land Resource Region (LRR) O, the Mississippi Delta Cotton and Feed Grains Region (USDA 2022). Within LRR O, the Survey area is in Major Land Resource Area (MLRA) 131A, identified as the Southern Mississippi River Alluvium. The Southern Mississippi River Alluvium encompasses nearly level to gently undulating landscapes formed from thick alluvial deposits along the Lower Mississippi River. Vegetation historically consisted of bottomland hardwood forests and mixed hardwood and cypress swamps, with cultivated cropland now common throughout the region. These habitats support a variety of wildlife species such as white-tailed deer, small mammals, waterfowl, reptiles, and common woodland and wetland bird species. This area is characterized by very deep, predominantly poorly drained to somewhat poorly drained, loamy or clayey soils. NRCS-mapped soil map units within the Survey area include Hebert silt loam, 0 to 1 percent slopes; Perry clay, 0 to 1 percent slopes; Portland silt loam, 0 to 1 percent slopes; Portland silty clay, 0 to 1 percent slopes; Rilla silt loam, 0 to 1 percent slopes; Rilla silt loam, 3 to 5 percent slopes; and Yorktown silty clay, 0 to 1 percent slopes, frequently flooded and frequently ponded. The average annual precipitation ranges from approximately 44 to 68 inches, and the mean annual temperatures range from 57 to 70 °F. The freeze-free period averages about 285 days (USDA 2022).

Past and current human activities, including urban development, roadway and railroad construction, agricultural land use, and maintenance of drainage infrastructure within and adjacent to the Survey area, have affected natural habitats. Many wildlife species have likely already been displaced by these disturbances, which have altered baseline natural conditions. The degree and extent of habitat change over time have likely influenced the numbers, types, and presence of wildlife species found in the Survey area. Expected wildlife present in the Survey area include species adapted to fragmented wooded patches, riparian and wetland

habitats, agricultural and residential settings, and maintained roadside and drainage corridors associated with regular human activity.

Methods

Prior to the field survey, Headway reviewed the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species list for the Survey area, generated in July 2026, to identify federally listed, proposed, and candidate species. Headway also reviewed the Arkansas Game and Fish Commission (AGFC) Code Book Regulation P1.01 Endangered Species List, Animals to assess the potential presence of state-protected wildlife species and sensitive habitats. Headway also completed the USFWS AFO Arkansas Multi-Species Determination Key and the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key for the Project. The most recent IPaC report, determination key documentation, USFWS concurrence letter, and AGFC P1.01 Endangered Species List, Animals are provided in Appendix B.

Available species data for the proposed Survey area were reviewed prior to field work. The proposed Survey area, aerial imagery, and other habitat or listed species information were preloaded onto ArcGIS Field Maps for use with a sub-meter accurate Global Positioning System (GPS) prior to the field assessment.

Headway ecologist and wetland scientist Cody Vicenik conducted a site visit of the Survey area on July 27, 2026. Weather conditions during the survey included sunny skies, an afternoon temperature of approximately 97 °F, and southwest winds of approximately 5 miles per hour. The pedestrian site visit was conducted by walking throughout the proposed Survey area. Given the size and current land use associated with the Survey area, the entire Survey area was surveyed. The purpose of the survey was to identify and document existing habitats to determine if conditions within the Survey area meet the habitat criteria to support populations of federal and/or state special-status species.

Results

Description of Existing Habitat

Topographically, the Survey area is generally low relief, with localized relief associated with Bayou Bartholomew and adjacent drainageways. Soils are predominantly poorly drained to somewhat poorly drained, and the Survey area is vegetatively covered by maintained grass, scrub, wooded areas, and cultivated agricultural fields, with tree cover concentrated along drainage features. Species observed throughout the Survey area included trumpet-creeper (*Campsis radicans*), sweet-gum (*Liquidambar styraciflua*), Japanese honeysuckle (*Lonicera japonica*), bahiagrass (*Paspalum notatum*), southern red oak (*Quercus falcata*), water oak (*Quercus nigra*), saw-tooth blackberry (*Rubus argutus*), goldenrod (*Solidago* sp.), winged elm (*Ulmus alata*), American elm (*Ulmus americana*), and corn (*Zea mays*). Survey area photographs documenting observed habitats are included in Appendix C.

Threatened, Endangered, and Special Status Wildlife Species

Federally Protected Species

The USFWS has regulatory authority, via the Endangered Species Act (ESA) of 1973 and subsequent amendments, to list and monitor the status of species whose populations are imperiled, or in threat of becoming imperiled. The ESA serves to protect plant and animal species that have been listed by the USFWS as either threatened or endangered. An endangered species is any species that is in danger of extinction. A threatened species is a species that is likely to become endangered in the foreseeable future. Species that are either candidate species or species proposed for listing do not have ESA protections until the time of actual listing in the Federal Register; however, federal agencies are required to confer with the USFWS regarding actions that are likely to jeopardize the continued existence of proposed species or result in the destruction or adverse modification of proposed critical habitat. Candidate species do not receive the protections afforded to federally listed species under the ESA. Species proposed for listing likewise are not subject to the ESA's prohibitions on take; however, federal agencies are required under Section 7(a)(4) of the ESA to confer with the USFWS on actions likely to jeopardize the continued existence of proposed species or destroy or adversely modify proposed critical habitat. Based on the current U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Official Species List and associated project review completed for the Survey area, no designated or proposed critical habitat occurs within the Survey area (USFWS 2026).

Section 9 of the Endangered Species Act prohibits the unauthorized take of federally listed endangered wildlife species. For threatened wildlife species, take prohibitions are established through species-specific regulations issued pursuant to Section 4(d) of the ESA and codified in 50 CFR Part 17. "Take" includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

Effect Determination Review

The ESA requires federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of designated critical habitat. The federal action agency is responsible for making the final effect determination. The determinations presented in this report are Headway's preliminary recommendations based on the desktop review and field investigation.

Effect determinations used in this report are defined as follows:

- **No effect** means the proposed action will not affect a listed or proposed species or designated or proposed critical habitat. Consultation with or concurrence from the USFWS is not required.
- **May affect, not likely to adversely affect** means that the effects on a listed species or designated critical habitat would be wholly beneficial, insignificant, or discountable. This determination requires informal consultation and written concurrence from the USFWS.
- **May affect, likely to adversely affect** means that a listed species or designated critical habitat is likely to be exposed to the proposed action or its environmental consequences and is expected to respond negatively. This determination requires formal consultation with the USFWS and preparation of a Biological Opinion.

For species proposed for listing, the effect determinations presented in this report provide the biological-effects analysis supporting the lead federal agency's evaluation under Section 7(a)(4) of the ESA. The lead federal agency is responsible for determining whether the Project is likely to jeopardize the continued existence of a proposed species or destroy or adversely modify proposed critical habitat and whether conferencing with the USFWS is required.

Headway conducted a query of the USFWS's IPaC. The IPaC report identified species with potential to occur in or near the Survey area, including tricolored bat, eastern black rail, piping plover, rufa red knot, alligator snapping turtle, pink mucket, pondberry, and monarch butterfly (USFWS 2026).

Headway completed the USFWS AFO Arkansas Multi-Species Determination Key and the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key. The Arkansas Multi-Species Determination Key resulted in no effect determinations for the eastern black rail, piping plover, rufa red knot, and pondberry; a preliminary may affect, not likely to adversely affect determination for the pink mucket; and documented a no jeopardy determination for species proposed for listing. The Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key returned a may affect result for the tricolored bat based on the Project information entered into the key. Because the tricolored bat is currently proposed for listing rather than federally listed, the may affect result does not represent a Section 7(a)(2) consultation determination. Based on the project-specific biological effects analysis, Headway recommends a not likely to adversely affect determination for the tricolored bat. This recommendation supports the lead federal agency's separate evaluation under Section 7(a)(4) of whether the Project is likely to jeopardize the continued existence of the species. In a letter dated August 4, 2026, the USFWS concurred with the may affect, not likely to adversely affect determination for the pink mucket. The determination key documentation and USFWS concurrence letter are provided in Appendix B.

Table 1 provides the federally listed and proposed species identified in the USFWS IPaC report as having the potential to occur in or near the Survey area. Headway has provided a preliminary effect determination for each species based on the desktop review, field observations, and anticipated Project activities. The federal action agency is responsible for making the final effect determination. Additionally, discussion regarding habitat requirements, potential for occurrence, and determination of impact is provided for each species.

Table 1. Federally Listed and Proposed Species Potentially Within the Project Vicinity

Species Name	Status	Recommended Effect Determination
Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	*Not likely to adversely affect*
Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*)	Threatened	*No effect*
Piping Plover (*Charadrius melodus*)	Threatened	*No effect*
Rufa Red Knot (*Calidris canutus rufa*)	Threatened	*No effect*
Alligator Snapping Turtle (*Macrochelys temminckii*)	Proposed Threatened	*No effect*
Pink Mucket (pearlymussel) (*Lampsilis abrupta*)	Endangered	*May affect, not likely to adversely affect*
Monarch Butterfly (*Danaus plexippus*)	Proposed Threatened	*No effect*

Pondberry (*Lindera melissifolia*)	Endangered	*No effect*

Tricolored Bat

Habitat and Range Requirements

The tricolored bat occurs throughout much of the eastern United States, including Arkansas. During winter, the species typically hibernates in caves and abandoned mines that provide stable temperatures and high humidity. In the southern portion of its range, where natural caves are less common, tricolored bats have been documented using large road-associated culverts and similar structures for winter roosting. During the spring, summer, and fall, tricolored bats primarily occupy forested habitats, roosting among the foliage of live or recently dead deciduous hardwood trees, but they may also use pine trees, Spanish moss, and occasionally human-made structures. Foraging generally occurs along forest edges, riparian corridors, and near water sources (USFWS n.d.-f).

Potential for Occurrence

The Survey area is within the range of the tricolored bat. Scattered trees, maintained vegetation, drainage features, and limited riparian cover occur within and adjacent to portions of the Survey area and may provide limited foraging opportunities for the species. However, trees within the Survey area consisted primarily of isolated trees and small maintained stands within developed urban areas. Field observations did not identify potential tricolored bat roost substrate consistent with USFWS guidance, such as suitable live or dead leaf clusters, Spanish moss, beard lichen, or clusters of dead pine needles within large live pine trees. Therefore, suitable summer roosting habitat was not identified within the Survey area. No bridges were identified within the proposed Project areas, and the culverts did not meet the minimum 3-foot interior-height criterion requiring individual bat structure assessments. Therefore, no separate bridge or culvert assessment documentation was prepared for the Project.

Determination of Impact

Based on the absence of suitable summer roosting habitat, the Project is not anticipated to affect summer roosting habitat for the tricolored bat. Project activities may temporarily disturb areas that provide limited foraging opportunities through removal of approximately 1.6 acres of forest. However, field observations did not identify suitable tricolored bat roost substrate within the affected vegetation, and the Project includes approximately 30.4 acres of riparian forest restoration (NRCS 2026). The Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key returned a *may affect* result under the key's broader screening pathway for tree removal and potential summer habitat within 1,000 feet of Project activities. This broader determination key screening result does not establish that suitable tricolored bat roost substrate occurs within the Survey area. In addition, because the tricolored bat is currently proposed for listing rather than federally listed, the *may affect* result does not represent a Section 7(a)(2) consultation determination. Based on the project-specific biological effects analysis, including the absence of suitable summer roosting habitat, limited potential foraging effects, and proposed riparian forest restoration, Headway recommends a preliminary determination that the Project *may affect, but is not likely to adversely affect*, the tricolored bat. The determination key documentation is provided in Appendix B.

Eastern Black Rail

Habitat and Range Requirements

The eastern black rail is a secretive marsh bird that occurs in scattered locations along the Atlantic and Gulf coasts and in portions of the interior southeastern United States, including Arkansas. The species is closely associated with shallowly flooded emergent wetlands, typically occupying wet prairies, marshes, and other low-lying areas with dense herbaceous vegetation such as sedges, rushes, and grasses. Suitable habitat generally includes persistent shallow water or saturated soils with limited disturbance and sufficient vegetative cover for nesting and concealment. Eastern black rails typically avoid dry uplands, heavily managed drainage features, and areas lacking wetland hydrology (USFWS n.d.-a; Watts 2016).

Potential for Occurrence

The Survey area is within the range of the eastern black rail. However, field surveys documented no shallowly flooded emergent wetlands, wet prairies, marshes, or other habitats containing the persistent shallow water and dense herbaceous vegetation required by the species. Drainage features within the Survey area were disturbed and did not provide suitable nesting or concealment habitat. No eastern black rails or evidence of their presence were observed during the field survey. Therefore, the presence of this species within the Survey area is unlikely.

Determination of Impact

Given the absence of suitable habitat for the eastern black rail within the Survey area, no impacts to the eastern black rail or its habitat are anticipated. Therefore, the Project is anticipated to result in *no effect* to the eastern black rail. The AFO Arkansas Multi-Species Determination Key also resulted in a no effect determination for the eastern black rail (Appendix B).

Piping Plover

Habitat and Range Requirements

The piping plover is a small shorebird that nests on wide, flat, sparsely vegetated sandy beaches, sandflats, riverine sandbars, and barrier islands that provide open substrates with minimal vegetation and disturbance. During migration and winter, the species utilizes similar open sandy or gravelly shorelines, including coastal beaches, tidal flats, and large river sandbars. Migrating individuals may occasionally occur at suitable inland stopover sites where exposed sand or sparsely vegetated shorelines are present (USFWS n.d.-d).

Potential for Occurrence

The Survey area is located inland within the Wilmot and Parkdale areas and does not contain sandy beaches, dunes, riverine sandbars, or other open sandy areas associated with piping plover nesting or wintering habitat. In addition, the Survey area does not provide suitable stopover habitat, such as open sandflats or sparsely vegetated shorelines, that migrating individuals might occasionally use. No piping plovers were observed during the field survey. Therefore, it is unlikely this species would be present within the Survey area.

Determination of Impact

Given the absence of suitable nesting, wintering, or migratory stopover habitat within the Survey area, no impacts to the piping plover or its potential habitat are anticipated. Therefore, the Project is anticipated to result in *no effect* to the piping plover. The AFO Arkansas Multi-Species Determination Key also resulted in a no effect determination for the piping plover (Appendix B).

Rufa Red Knot

Habitat and Range Requirements

The rufa red knot is a long-distance migratory shorebird that breeds in the Arctic tundra and winters primarily along the coasts of South America, the Gulf of Mexico, and the southeastern United States. During migration, red knots rely on coastal habitats such as beaches, sandflats, mudflats, and tidal marshes for foraging and resting. Migratory stopover sites are typically associated with expansive, open coastal shorelines or large estuarine systems that support abundant invertebrate prey. The species generally avoids inland areas that lack extensive open sand or mudflat habitats (USFWS n.d.-e).

Potential for Occurrence

The Survey area is located inland within the Wilmot and Parkdale areas and does not contain tidal flats, beaches, mudflats, or other coastal or estuarine shoreline features associated with red knot migration or wintering habitat. In addition, the Survey area does not provide suitable migratory stopover habitat, such as open sandflats or mudflats. No rufa red knots were observed during the field survey. Therefore, it is unlikely this species would be present within the Survey area.

Determination of Impact

Given the Project's inland location and the absence of suitable wintering or migratory stopover habitat, no impacts to the rufa red knot or its potential habitat are anticipated. Therefore, the Project is anticipated to result in *no effect* to the rufa red knot. The AFO Arkansas Multi-Species Determination Key also resulted in a no effect determination for the rufa red knot (Appendix B).

Alligator Snapping Turtle

Habitat and Range Requirements

Populations of the alligator snapping turtle range across the Mississippi River Valley and adjacent drainages of the southeastern United States. Preferred habitat includes slow-moving, deep waters of rivers, sloughs, oxbow lakes, canals, lakes, or ponds associated with or near rivers, swamps, bayous, and shallow tributaries of occupied rivers. The species is highly aquatic, only emerging from water for nesting. Within waterbodies, they are usually found under or within logjams, undercut banks, rock shelters, deep holes, or dense floating vegetation mats (Munscher et al. 2020; LDWF n.d.; NatureServe 2023a).

Potential for Occurrence

The Survey area is within the range of the alligator snapping turtle. Field surveys documented no deep, slow-moving aquatic habitats with persistent water, undercut banks, deep pools,

logjams, or other submerged structure required by the species. Aquatic features within the Survey area consisted primarily of maintained drainage channels and stormwater conveyance features that did not provide suitable habitat. No alligator snapping turtles were observed during the field survey. Therefore, it is unlikely this species would be present within the Survey area.

Determination of Impact

Given the scope of work of the Project and the lack of suitable habitat within the Survey area, no impacts are anticipated to the alligator snapping turtle or its potential habitat. Therefore, the Project is anticipated to result in *no effect* to the alligator snapping turtle. The AFO Arkansas Multi-Species Determination Key documented a no jeopardy determination for species proposed for listing, including the alligator snapping turtle (Appendix B).

Pink Mucket

Habitat and Range Requirements

The pink mucket is a freshwater mussel that occurs in rivers and streams within portions of the Mississippi River drainage. Suitable habitat generally includes flowing waters with relatively silt-free substrates of sand, gravel, cobble, rock, or boulders. The species is commonly associated with moderate to strong currents in larger rivers and smaller streams, although it may also occur in deeper areas with slower currents and stable sand and gravel substrates. Pink muckets may persist in impoundments that retain river-like conditions but are not typically associated with standing pools or heavily silted aquatic habitats (USFWS 1985; NatureServe 2023b).

Potential for Occurrence

The Survey area is within the range of the pink mucket. Although Bayou Bartholomew and associated drainage features occur within or adjacent to portions of the Survey area, field surveys did not identify relatively silt-free, flowing aquatic habitat with stable sand, gravel, cobble, rock, or boulder substrates suitable for the species within the proposed Project areas. Aquatic features associated with Project activities consisted primarily of maintained drainage ditches, stormwater conveyance features, and wetland or backwater areas that lacked the flowing-water and substrate conditions required by the species. No pink muckets were observed during the field survey. Therefore, it is unlikely this species would be present within the Survey area.

Determination of Impact

Suitable habitat for the pink mucket was not identified within the proposed Project areas, and the Project does not intersect the pink mucket survey coordination area. The USFWS IPaC AFO Arkansas Multi-Species Determination Key resulted in a preliminary may affect, not likely to adversely affect determination for the pink mucket based on the proposed Project activities and incorporation of applicable species protective measures. Therefore, Headway recommends that the Project *may affect, but is not likely to adversely affect*, the pink mucket. In a letter dated August 4, 2026, the USFWS concurred with this determination. The determination key documentation and USFWS concurrence letter are provided in Appendix B.

Monarch Butterfly

Habitat and Range Requirements

Monarchs breed year-round in many regions, but those in temperate climates like eastern and western North America migrate long distances, over 3,000 kilometers, to overwintering sites in the fall. In early spring, they mate, and their offspring continue the generational migration cycle across numerous U.S. states and territories, including Arkansas, California, Louisiana, Texas, and many others. Monarchs require habitats with milkweed and flowering plants for breeding and feeding, and specific microclimates for overwintering. Habitats include fields, roadsides, open areas, wetlands, and urban gardens. Monarchs inhabit diverse landscapes like grasslands, tundra, coasts, mountains, urban and rural areas, and wetlands (USFWS n.d.-b).

Potential for Occurrence

Milkweed plants were not observed within the Survey area during the field survey; however, similar nectar-producing resources could potentially be present seasonally. No monarch butterflies were observed during the field survey.

Determination of Impact

Given the absence of host plants within the Survey area and the transient nature of monarchs, no impacts to this species are anticipated from the proposed Project activities. Therefore, the Project is anticipated to result in *no effect* to the monarch butterfly. The AFO Arkansas Multi-Species Determination Key documented a no jeopardy determination for species proposed for listing, including the monarch butterfly (Appendix B).

Pondberry

Habitat and Range Requirements

Pondberry is a deciduous shrub typically found in seasonally flooded forested wetlands, including bottomland hardwood forests, swamp margins, depressional wetlands, and floodplain sloughs. The species is most often associated with hydric soils, shallow seasonal inundation, and shaded conditions beneath an intact forest canopy. Pondberry commonly occurs in areas with limited disturbance and is not typically found in upland habitats, maintained drainage features, or areas subject to frequent mowing or grading (USFWS n.d.-c).

Potential for Occurrence

Field surveys did not identify seasonally flooded forested wetlands, depressional wetlands, floodplain sloughs, or other suitable pondberry habitat within the Survey area. Aquatic features within the Survey area consisted primarily of maintained drainage channels and stormwater conveyance features that lacked the hydrologic conditions and intact forest canopy required by the species. No pondberry individuals were observed during the field survey. Therefore, it is unlikely this species would be present within the Survey area.

Determination of Impact

Given the scope of work of the Project and the lack of suitable habitat within the Survey area, no impacts are anticipated to pondberry or its potential habitat. Therefore, the Project is anticipated

to result in *no effect* to pondberry. The AFO Arkansas Multi-Species Determination Key also resulted in a no effect determination for pondberry (Appendix B).

State Protected Species

In addition to federally listed threatened and endangered species, the Arkansas Game and Fish Commission (AGFC) regulates state-protected wildlife species through the AGFC Code Book. Headway reviewed AGFC Code Book Regulation P1.01 Endangered Species List, Animals to assess the potential presence of state-protected wildlife species and sensitive habitats within the Survey area.

No state-protected species were observed within the Survey area during field surveys. The Survey area includes developed roadway corridors, maintained drainage features, streams, wetlands, riparian areas, and forested habitat. Species identified in AGFC Code Book Regulation P1.01 that are also included in the USFWS IPaC report are addressed in the species-specific analyses above. Based on field observations and review of AGFC Code Book Regulation P1.01, no impacts to state-protected species are anticipated.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703–712) prohibits the intentional take of migratory birds, their nests, and eggs except as authorized. In April 2025, the U.S. Department of the Interior issued Solicitor's Opinion M-37085, directing bureaus to follow M-37050, which concludes that the MBTA does not apply to incidental (unintentional) take. Accordingly, incidental take resulting from routine construction activities is not presently regulated under the MBTA, while intentional take remains prohibited (DOI 2025). On April 21, 2025, the U.S. Fish and Wildlife Service withdrew its 2021 advance notice of proposed rulemaking regarding an incidental take permitting program, and there is currently no MBTA incidental take permitting framework (USFWS 2025b).

Vegetation removal associated with Project activities has the potential to affect nesting migratory birds if conducted during the breeding season. The Survey area contains developed roadway corridors and maintained grass and scrub vegetation, as well as riparian and forested habitats that could provide suitable nesting habitat. If construction activities occur during the breeding season (March 1–August 31), a qualified biologist should conduct pre-construction nesting bird surveys within 5–10 days prior to vegetation removal or ground disturbance to confirm that active nests are not present. If active nests are identified, appropriate species-specific buffers should be established and maintained until the young have fledged (USFWS 2025a).

Bald and Golden Eagle Protection Act

The federal Bald and Golden Eagle Protection Act provides protection of the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) by making it unlawful to take these eagles and their parts, nests, or eggs. Suitable nesting habitat for bald eagles and golden eagles does not occur within the Project footprint. While bald eagles may occur in eastern Arkansas during the winter months near large rivers, reservoirs, or open water bodies, no suitable nesting or foraging habitat for bald eagles was identified within the Survey area during the field survey. Golden eagles primarily occur in western and mountainous regions of the United States and are not expected within the Survey area. Therefore, Project activities will not harm and will not cause take of bald or golden eagles.

Conclusions

Based on a review of the USFWS's IPaC report (Appendix B), no designated or proposed critical habitat occurs within the Survey area. A biological survey was completed for the Project to assess potential suitable habitat for federally listed, proposed, candidate, and state-protected species within the proposed Survey area. Special attention was provided to the tricolored bat, eastern black rail, piping plover, rufa red knot, alligator snapping turtle, pink mucket, monarch butterfly, and pondberry, as these species were identified by the USFWS IPaC report as having potential to occur within or near the Survey area. In addition, the Arkansas Game and Fish Commission (AGFC) Code Book Regulation P1.01 Endangered Species List, Animals was reviewed to assess the potential presence of state-protected wildlife species. No suitable habitat for the eastern black rail, piping plover, rufa red knot, alligator snapping turtle, or pondberry was observed during the site visit, and no milkweed host plants were observed for the monarch butterfly. Suitable pink mucket habitat was not identified within the proposed Project areas. However, the USFWS IPaC AFO Arkansas Multi-Species Determination Key resulted in a preliminary may affect, not likely to adversely affect determination for the pink mucket based on the proposed Project activities and incorporation of applicable species protective measures. In a letter dated August 4, 2026, the USFWS concurred with the may affect, not likely to adversely affect determination for the pink mucket. Scattered trees, maintained vegetation, drainage features, and limited riparian cover may provide limited foraging opportunities for the tricolored bat. However, no suitable summer roosting habitat was identified within the Survey area. The AFO Arkansas Multi-Species Determination Key also resulted in no effect determinations for the eastern black rail, piping plover, rufa red knot, and pondberry and documented a no jeopardy determination for species proposed for listing. The Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key returned a may affect result for the tricolored bat under the key's broader screening criteria. Based on the project-specific biological effects analysis, Headway recommends that the Project may affect, but is not likely to adversely affect, the tricolored bat. This recommendation supports the lead federal agency's separate evaluation under Section 7(a)(4) of whether the Project is likely to jeopardize the continued existence of the species. Headway has made preliminary determinations that the Project would have no effect on the eastern black rail, piping plover, rufa red knot, alligator snapping turtle, monarch butterfly, or pondberry. Headway recommends that the Project may affect, but is not likely to adversely affect, the pink mucket, and the USFWS concurred with this determination on August 4, 2026. No impacts are anticipated to state-protected species per AGFC P1.01. Headway recommends that a qualified biologist conduct migratory bird nest surveys within 5–10 days of construction activities if construction is planned during the nesting season, consistent with the nesting-bird BMPs described above.

Recommendations

To prevent harm or disruption to active migratory bird nests that may occur in the Project limits, clearing and grubbing of vegetation should be conducted prior to March 1 or after August 31, to the maximum extent possible, to avoid the period when most local bird species nest and breed. If vegetation removal must be conducted between March 1 and August 31, Headway recommends that the developer employ a qualified biologist to survey the area slated for disturbance no more than 5–10 days preceding clearing and grubbing. Active bird nests should be protected from disturbance until the young have fledged or until the nest is no longer active, as determined by the qualified biologist.

There are no other recommendations regarding wildlife in association with the proposed Project.

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Appendix A. Figures

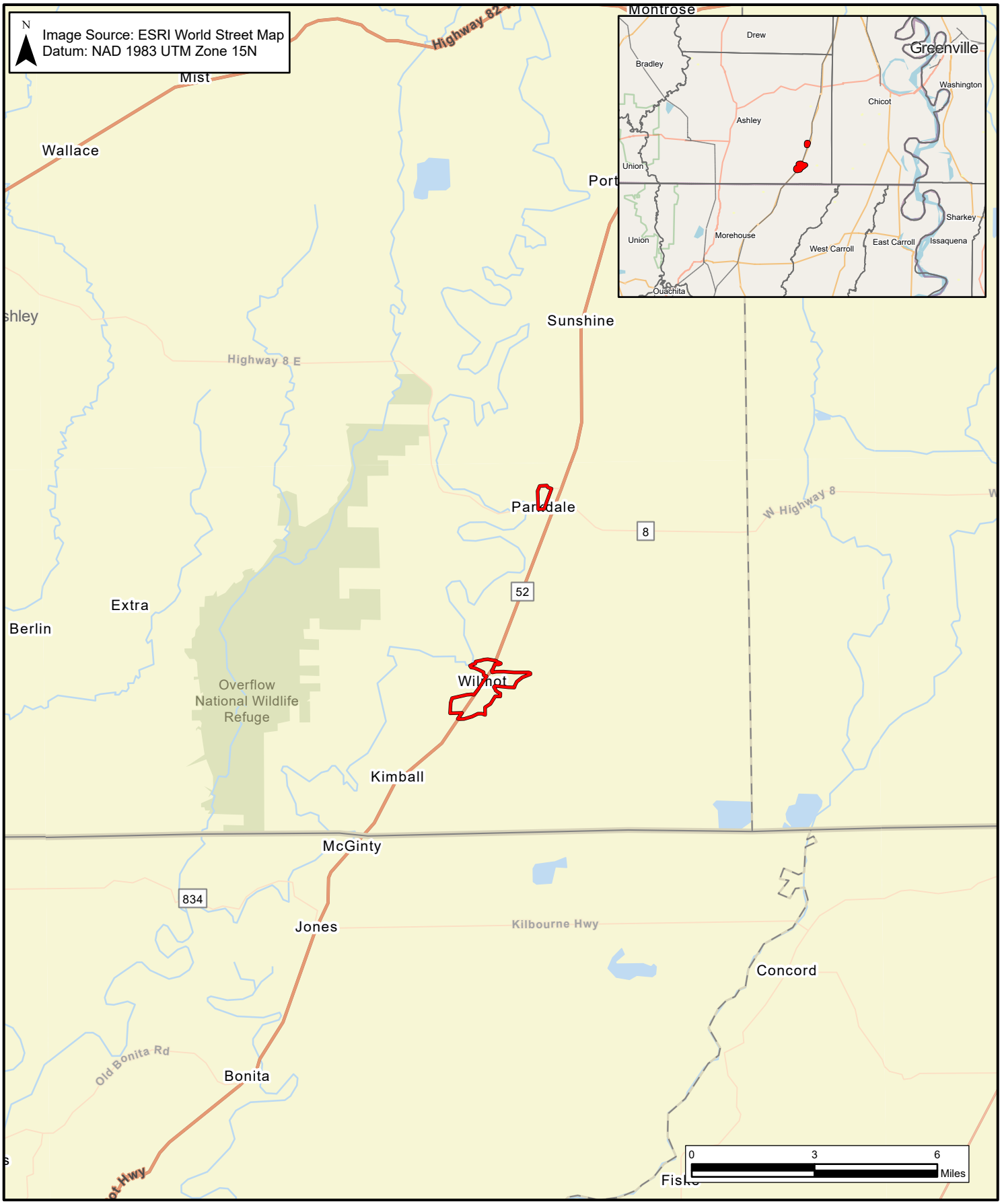


Figure 1

Survey Area

745 acres

PROJECT VICINITY MAP

CITY OF WILMOT AREA PROJECT

Ashley County, Arkansas

Headway Environmental™

Date: 7/28/2026

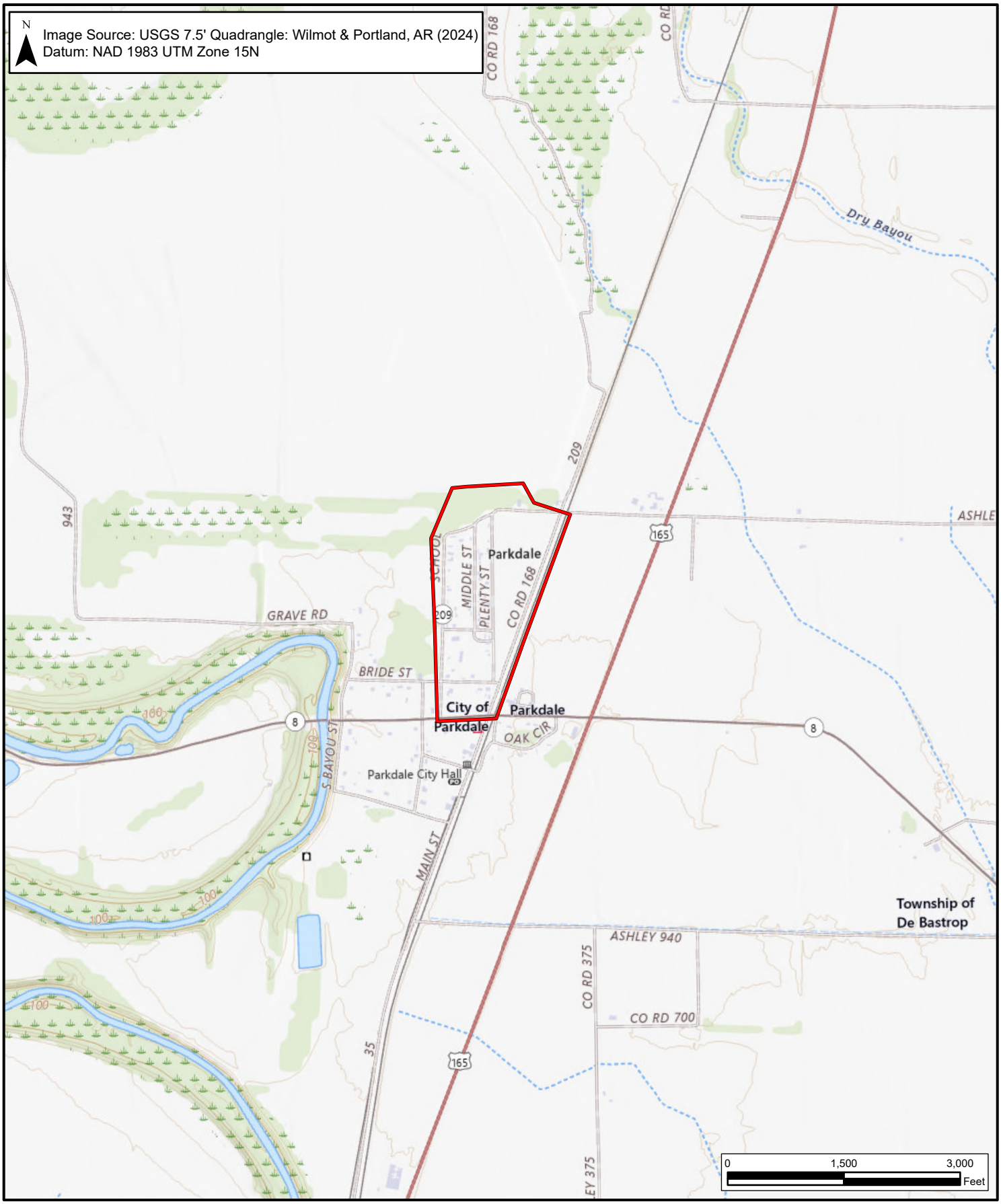


Figure 2

Survey Area

87.18 acres

USGS TOPOGRAPHIC MAP

CITY OF WILMOT AREA PROJECT

Ashley County, Arkansas

Headway Environmental™

Date: 7/28/2026

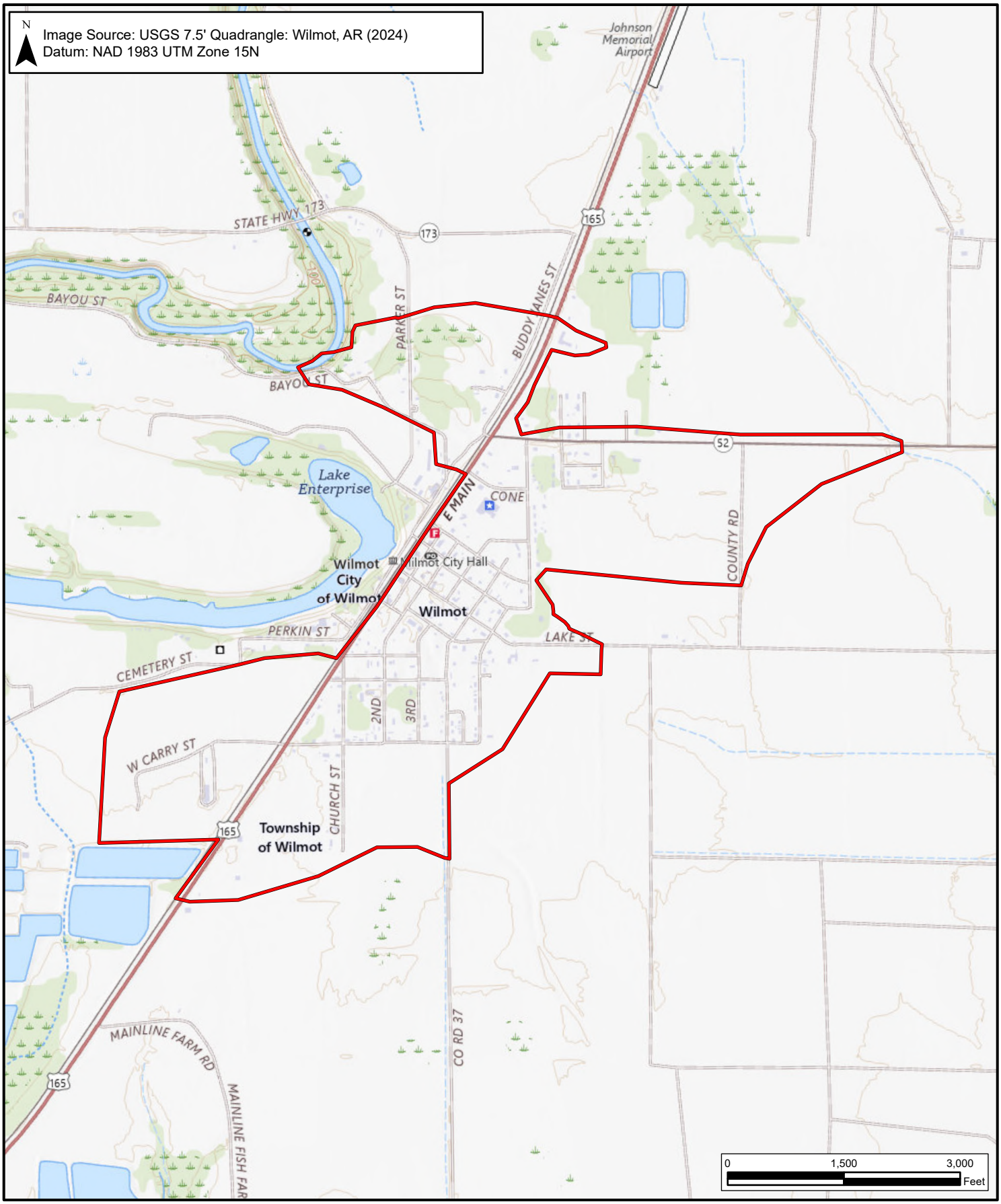


Figure 2 **Survey Area** 658.16 acres	**USGS TOPOGRAPHIC MAP** CITY OF WILMOT AREA PROJECT Ashley County, Arkansas	Headway Environmental™ Date: 7/28/2026

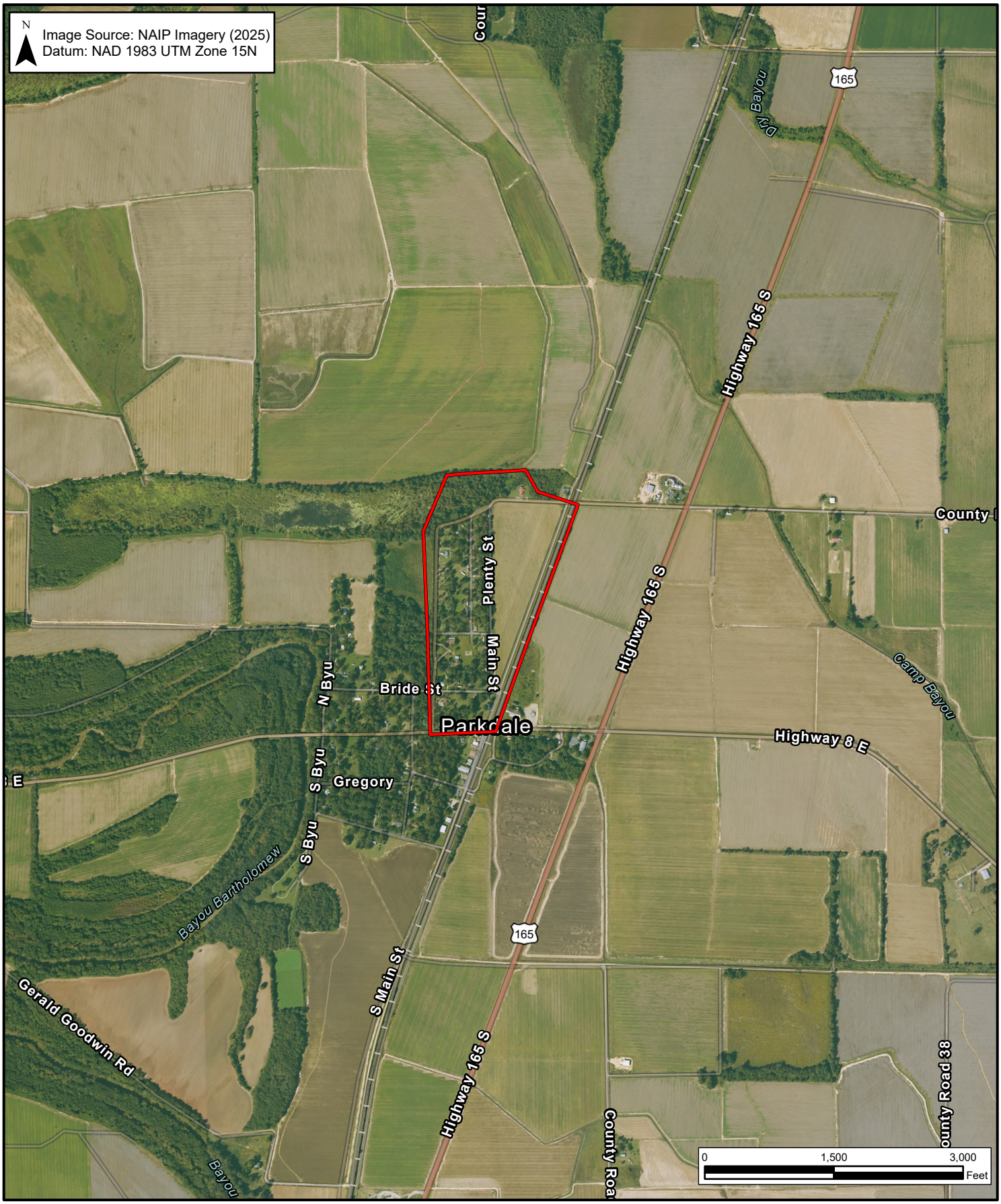


Figure 3	NAIP 2025 AERIAL IMAGERY MAP	Headway Environmental™
Survey Area 87.18 acres	CITY OF WILMOT AREA PROJECT Ashley County, Arkansas	Date: 7/28/2026

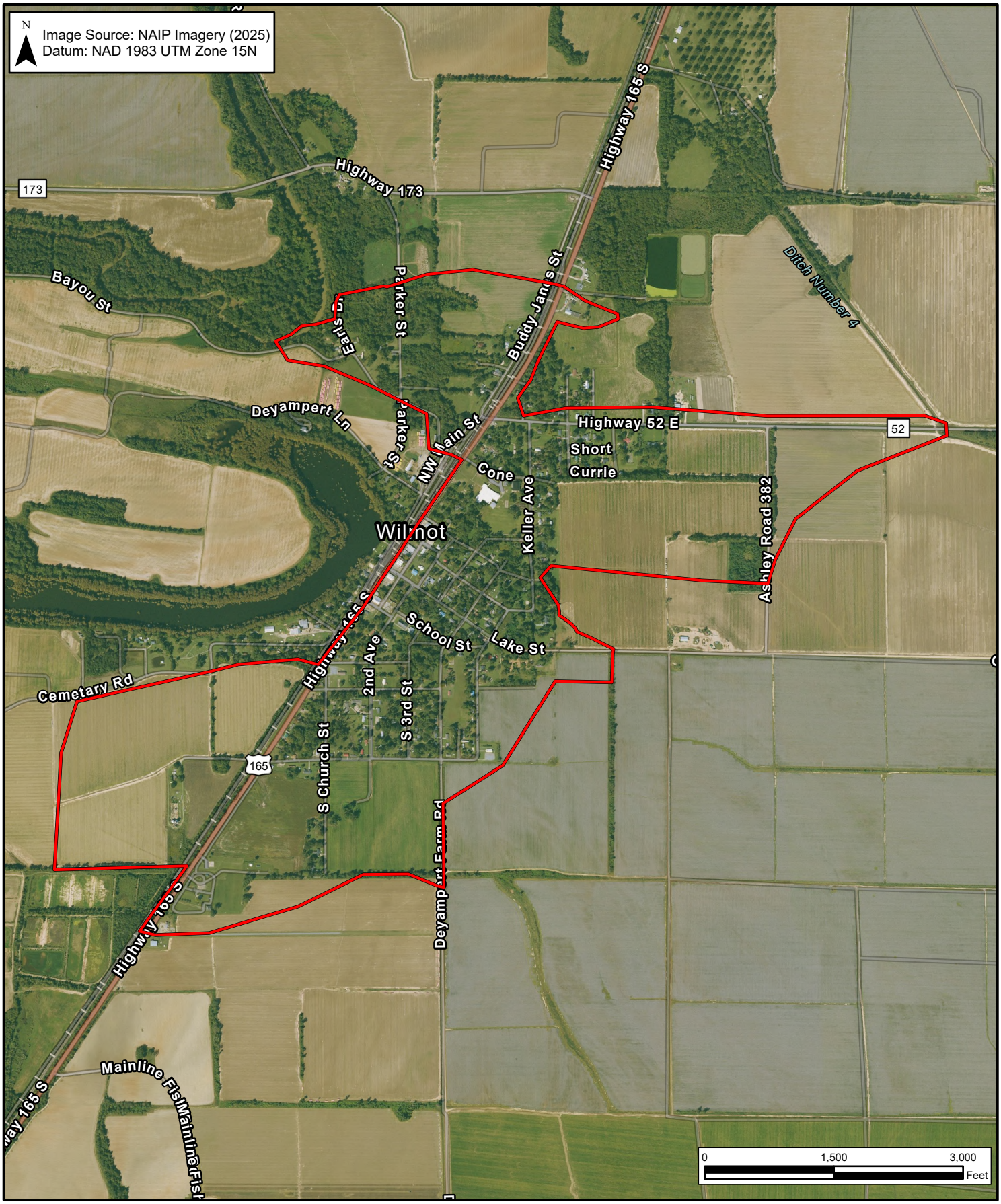


Figure 3

Survey Area

658.16 acres

NAIP 2025 AERIAL IMAGERY MAP

CITY OF WILMOT AREA PROJECT

Ashley County, Arkansas

Headway Environmental™

Date: 7/28/2026

Appendix B. USFWS IPaC Report, Determination Key Documentation, USFWS Concurrence Letter, and AGFC Code Book Regulation P1.01 Endangered Species List, Animals

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480

In Reply Refer To: 07/30/2026 14:27:45 UTC
Project Code: 2026-0123044
Project Name: City of Wilmot Area

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2026-0123044
Project Name: City of Wilmot Area
Project Type: Restoration / Enhancement of Waterbody
Project Description: Install onsite/local stormwater bioretention cells, upgrade stormwater collection/minor drainage components, and replace conveyance/major drainage components with Stream Management Corridors (SMCs) (i.e. restored stream/geomorphic floodplain/riparian buffer inside a flood control channel coupled with geomorphic culverts or bridges) to prevent flood damage in the city for storms up to the 100-year, 24-hour event for the 50-year life of the Project.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.0577485,-91.57140302860205,14z



Counties: Ashley County, Arkansas

ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

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

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
Tricolored bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

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

REPTILES

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

CLAMS

NAME	STATUS
Pink mucket (pearlymussel) *Lampsilis abrupta* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7829	Endangered

INSECTS

NAME	STATUS
Monarch butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Pondberry *Lindera melissifolia*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1279

CRITICAL HABITATS

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

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

IPAC USER CONTACT INFORMATION

Agency: Wilmot city
Name: Cody Vicenik
Address: PO Box 1282
City: Humble
State: TX
Zip: 77347
Email cvicenik@headwayenviro.com
Phone: 7132089096

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Natural Resources Conservation Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480

In Reply Refer To: 07/30/2026 16:01:35 UTC
Project code: 2026-0123044
Project Name: City of Wilmot Area

Subject: Technical Assistance letter for 'City of Wilmot Area' for specified federally threatened and endangered species and designated critical habitat that may occur in your proposed project area consistent with the Arkansas Determination Key for project review and guidance for federally listed species (Arkansas Dkey).

Dear Cody Vicenik:

The U.S. Fish and Wildlife Service (Service) received on **July 30, 2026** your effect determination(s) for the 'City of Wilmot Area' (the Action) using the Arkansas DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers, and the assistance in the Service's Arkansas DKey, you made the following effect determination(s) for the proposed Action, including species protective measures that you confirmed will be implemented.

Species	Listing Status	Determination
Eastern Black rail (*Laterallus jamaicensis jamaicensis*)	Threatened	No effect
Pink mucket (pearlymussel) (*Lampsilis abrupta*)	Endangered	NLAA
Piping Plover (*Charadrius melodus*)	Threatened	No effect
Pondberry (*Lindera melissifolia*)	Endangered	No effect
rufa red knot (*Calidris canutus rufa*)	Threatened	No effect

Status

Next Steps

Consultation with the Service is necessary. This letter serves as technical assistance. The above NLAA determination(s) become valid only after the Service concurs with the determination(s). The federal action agency or designated representative must submit a request to the Service

asking for concurrence and reliance on the DKey to satisfy the agency's consultation requirements for the Project.

Please provide this technical assistance letter to the federal action agency or its designated representative with a request for review. As deemed appropriate, the federal action agency or its designated representative should submit the determination(s) for concurrence through IPaC by doing the following:

1. Log into IPaC using an agency email account and click on My Projects, click "Search by record locator" to find this Project using **848-185512071**. (Alternatively, the originator of the project in IPaC can add the agency representative to the project by using the Add Member button on the project home page.)
2. Review the answers to the DKey to ensure that they are accurate.
3. Click on Review/ Finalize to convert the ‘not likely to adversely affect’ technical assistance letter to a concurrence letter. Download the concurrence letter for your files if needed.

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

Proposed Species and/or Critical Habitats: Thank you for informing our office that your project is not likely to jeopardize the continued existence of any species proposed for listing or any proposed designations of critical habitat that may occur within the project area. You have met the requirements under Section 7(a)(4) of ESA by informing our office of this determination for these species/critical habitats, and therefore no further coordination is necessary. We recommend documenting your justification for this determination in your administrative record. (Note: If the status of any proposed listed species changes to threatened or endangered before project completion, reinitiation of consultation under Section 7(a)(2) of ESA may be required.)

Candidate species are not afforded protection under the ESA; however, we recommend they be considered in project planning and that conservation measures be implemented to avoid or minimize impacts to individuals or their habitat as much as possible.

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

The Service developed the National Bald Eagle Management Guidelines to advise landowners, land managers, and others who share public and private lands with Bald Eagles when and under what circumstances the protective provisions of the Bald and Golden Eagle Protection Act may apply to their activities. The guidelines should be consulted prior to conducting new or intermittent activity near an eagle nest. Activity specific guidelines begin on page 10 of the document. To access a copy of the National Bald Eagle Management Guidelines please visit the

Service's Bald and Golden Eagle Management webpage and scroll down to the Guidance and Tools section: https://www.fws.gov/library/collections/bald-and-golden-eagle-management

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

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

1. Name

City of Wilmot Area

2. Description

The following description was provided for the project 'City of Wilmot Area':

> Install onsite/local stormwater bioretention cells, upgrade stormwater collection/ minor drainage components, and replace conveyance/major drainage components with Stream Management Corridors (SMCs) (i.e. restored stream/geomorphic floodplain/riparian buffer inside a flood control channel coupled with geomorphic culverts or bridges) to prevent flood damage in the city for storms up to the 100-year, 24-hour event for the 50-year life of the Project.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.05763425000001,-91.57140478419106,14z



Species Protection Measures
Streambank Stabilization
https://www.fws.gov/media/20220321final-docspms-streambank-stabilization-projectspdf-0

Bridges and Culverts
https://www.fws.gov/media/20220321final-docspms-bridge-and-culvert-projectspdf-1

Stream or Ditch Relocation
https://www.fws.gov/media/20220321final-docspms-stream-or-ditch-relocation-projectspdf-0

QUALIFICATION INTERVIEW

1. Have you made an effects determination of "no effect" for all species in the area of the project?

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

   No

2. Would you like to make a “no jeopardy” determination for all species **proposed** for listing or any proposed designations of critical habitat that may occur in your project area? By answering “yes” you are documenting that you’ve determined that the proposed project is not likely to jeopardize the continued existence of all species that may occur in the project area that are currently “**proposed**” for listing or result in the destruction or adverse modification of any proposed critical habitat.

   Yes

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

   Yes

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

   No

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

   Automatically answered
   No

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

   Automatically answered
   No

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

   Automatically answered
   No

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

   Automatically answered
   No

9. [Semantic] Does the project intersect designated critical habitat for Ouachita Fanshell?

   Automatically answered
   No

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

    Automatically answered
    No

11. [Semantic] Does the project intersect the red-cockaded woodpecker species list area?

    Automatically answered
    No
12. [Semantic] Does the project intersect the Eastern black rail species list area?

    Automatically answered
    Yes
13. Will the project take place in freshwater herbaceous wetlands and/or wet prairies?

    No
14. [Semantic] Does the project intersect the red knot species list area?

    Automatically answered
    Yes
15. Will the project affect sand and gravel areas or shorelines along rivers, lakes, or reservoirs?

    No
16. Does the project take place in marshy or flooded open field habitat?

    No
17. [Semantic] Does the project intersect the Piping Plover species list area?

    Automatically answered
    Yes
18. [Semantic] Does the project intersect the Whooping Crane species list area?

    Automatically answered
    No
19. [Semantic] Does the project intersect the interior least tern species list area?

    Automatically answered
    No
20. [Semantic] Does the project intersect the Gray Bat species list area?

    Automatically answered
    No
21. [Semantic] Does the project intersect the Ozark Big-eared Bat species list area?

    Automatically answered
    No
22. [Semantic] Does the project intersect the Indiana bat species list area?

    Automatically answered
    No
23. [Semantic] Does the project intersect the Benton County Cave Crayfish species list area?

    Automatically answered
    No
24. [Semantic] Does the project intersect the Hell Creek Cave Crayfish species list area?

    Automatically answered
    No

25. [Semantic] Does the project intersect the Ozark cavefish species list area?

    Automatically answered
    No

26. [Semantic] Does the project intersect the Missouri bladderpod species list area?

    Automatically answered
    No

27. [Semantic] Does the project intersect the Geocarpon species list area?

    Automatically answered
    No

28. [Semantic] Does the project intersect the Pondberry species list area?

    Automatically answered
    Yes

29. Does the proposed project clear suitable habitat for Pondberry or alter the hydrology of bottomland hardwood or sand ponds?

    No

30. Does the project contain any of the following activity types: Dams or Impoundments (including berms or levees), Municipal or industrial effluent discharge, Mining, Mine reclamation, Disposal of mine wastewater or tailings, Construction of natural gas or oil well pads, Construction greater than 40 acres, Dredging or snag removal, Energy development within floodplain, or OHV trail construction or maintenance?

    No

31. Does the project contain any of the following activity types: Boat Ramps, Bridges, Culverts, Residential or Commercial Development, Streambank Stabilization (or other streambank work), Pipeline and linear projects, Water intakes/withdrawls, Forest conversion within 100 ft of occupied streams, or Stream or ditch relocation, or straightening?

    Yes

32. Does the project include Streambank Stabilization (or other streambank work)?

    Yes

33. Does the project include the Streambank Stabilization species protective measures, as applicable to the project and site characteristics?

    Yes

34. Does the project include Boat Ramps?

    No

35. Does the project include Bridges and Culverts?

    Yes

36. Does the project include the Bridges and Culverts species protective measures, as applicable to the project and site characteristics?

    Yes

37. Does the project include Development?

    No

38. Is the project a Pipeline or Linear Project?

    No

39. Does the project include Water Intakes/Withdrawals?

    No

40. Does the project include Stream or Ditch Relocation, or Straightening?

    Yes

41. Does the project include the Stream or Ditch Relocation species protective measures, as applicable to the project and site characteristics?

    Yes

42. [Semantic] Does the project intersect the rabbitsfoot species list area?

    Automatically answered
    No

43. [Semantic] Does the project instersect the neosho mucket species list area?

    Automatically answered
    No

44. [Semantic] Does the project instersect the Spectaclecase species list area?

    Automatically answered
    No

45. [Semantic] Does the project instersect the snuffbox species list area?

    Automatically answered
    No

46. [Semantic] Does the project instersect the speckled pocketbook species list area?

    Automatically answered
    No

47. [Semantic] Does the project instersect the ouachita rock pocketbook species list area?

    Automatically answered
    No

48. [Semantic] Does the project instersect the fat pocketbook species list area?

    Automatically answered
    No

49. [Semantic] Does the project instersect the Curtis pearlymussel species list area?

    Automatically answered
    No

50. [Semantic] Does the project instersect the scaleshell species list area?

    Automatically answered
    No

51. [Semantic] Does the project instersect the pink mucket species list area?

    Automatically answered
    Yes

52. [Semantic] Does the project intersect the Pink mucket survey coordination area?

    Automatically answered
    No

53. [Semantic] Does the project instersect the Arkansas fatmucket species list area?

    Automatically answered
    No

54. [Semantic] Does the project instersect the winged mapleleaf species list area?

    Automatically answered
    No

55. [Semantic] Does the project instersect the leopard darter species list area?

    Automatically answered
    No

56. [Semantic] Does the project instersect the Yellowcheek darter species list area?

    Automatically answered
    No

57. [Semantic] Does the project intersect the Ouachita fanshell species list area?

    Automatically answered
    No

58. [Semantic] Does the project instersect the Ozark hellbender species list area?

    Automatically answered
    No

59. [Semantic] Does the project instersect the harperella species list area?

    Automatically answered
    No

60. [Semantic] Does the project instersect the pallid sturgeon species list area?

    Automatically answered
    No

61. [Semantic] Does the project intersect the interior least tern range?

    Automatically answered
    No

IPAC USER CONTACT INFORMATION

Agency: Wilmot city
Name: Cody Vicenik
Address: PO Box 1282
City: Humble
State: TX
Zip: 77347
Email cvicenik@headwayenviro.com
Phone: 7132089096

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Natural Resources Conservation Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480

In Reply Refer To: 07/30/2026 16:12:46 UTC
Project code: 2026-0123044
Project Name: City of Wilmot Area

Federal Nexus: yes
Federal Action Agency (if applicable): Natural Resources Conservation Service

Subject: Technical assistance for 'City of Wilmot Area'

Dear Cody Vicenik:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on July 30, 2026, for 'City of Wilmot Area' (here forward, Project). This project has been assigned Project Code 2026-0123044 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project. **Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey), invalidates this letter.**

Determination for the Northern Long-Eared Bat and Tricolored Bat

Based on your IPaC submission and a standing analysis completed by the Service, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
Tricolored bat (*Perimyotis subflavus*)	Proposed Endangered	May affect

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate. Projects that receive a may affect determination for tricolored bat through the key, should contact the appropriate Ecological Services Field Office if they want to conference on this species.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Alligator snapping turtle *Macrochelys temminckii* Proposed Threatened
- Eastern Black rail *Laterallus jamaicensis jamaicensis* Threatened
- Monarch butterfly *Danaus plexippus* Proposed Threatened
- Pink mucket (pearlymussel) *Lampsilis abrupta* Endangered
- Piping Plover *Charadrius melodus* Threatened
- Pondberry *Lindera melissifolia* Endangered
- rufa red knot *Calidris canutus rufa* Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the species listed above.

Conclusion

Consultation with the Service is not complete. Further consultation or coordination with the Service is necessary for those species or designated critical habitats with a determination of “May Affect.” A “May Affect” determination in this key indicates that the project, as entered, is not consistent with the questions in the key. Not all projects that reach a “May Affect” determination are anticipated to result in adverse impacts to listed species. These projects may result in a “No Effect”, “May Affect, Not Likely to Adversely Affect”, or “May Affect, Likely to Adversely Affect” determination depending on the details of the project. Please contact our Arkansas Ecological Services Field Office to discuss methods to avoid or minimize potential adverse effects to those species or designated critical habitats.

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

1. Name

City of Wilmot Area

2. Description

The following description was provided for the project 'City of Wilmot Area':

> Install onsite/local stormwater bioretention cells, upgrade stormwater collection/ minor drainage components, and replace conveyance/major drainage components with Stream Management Corridors (SMCs) (i.e. restored stream/geomorphic floodplain/riparian buffer inside a flood control channel coupled with geomorphic culverts or bridges) to prevent flood damage in the city for storms up to the 100-year, 24-hour event for the 50-year life of the Project.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.05763425000001,-91.57140478419106,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect” for a least one species covered by this determination key.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species that is not covered by an existing section 10 (a)(1)(A) Recovery Permit, exempted under section 4(d) or authorized by a section 6 cooperative agreement? **Note:** Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/ encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

   No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Note for projects in Pennsylvania: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer ‘yes’ to this question.

   Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

10. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

    Automatically answered

    No

11. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

    No

12. Does the action area contain (1) talus or (2) anthropogenic or naturally formed rock shelters or crevices in rocky outcrops, rock faces or cliffs?

    No

13. Is the action located in New England (CT, MA, ME, NH, RI, or VT)?

    No

14. Will the action cause effects to a bridge?

    Note: Covered bridges should be considered as bridges in this question.

    No

15. Will the action result in effects to a culvert or tunnel at any time of year?

    Yes

16. Does the culvert or tunnel equal or exceed 23 feet (7.0 meters) in length?

    Yes

17. Do the interior dimensions of the culvert or tunnel **equal or exceed 3.0 feet (0.9 meters) in height (minimum height for tricolored bat)**?

    No

18. Are trees present within 1000 feet of the action area? **Note:** If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines.

    Yes

19. Does the action include the intentional exclusion of bats from a building or building-like structure? **Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

    No

20. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

21. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

22. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

23. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

24. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

    Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

    No

25. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

26. Will the proposed action involve blasting or drilling?

    No

27. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use at night)?

    No

28. Will the proposed action involve the use of herbicides or pesticides (e.g., fungicides, insecticides, or rodenticides)?

    No

29. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season? Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining. **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines.

    No

30. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable forested northern long-eared bat or tricolored bat roosting habitat? **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines.

    No

31. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    Yes

32. Is the project related to the production of coal, including projects that support the mining of coal, as well as the production and/or distribution of energy produced from coal?

    No

33. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

    No

34. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

    Note: A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property.

    No

35. Does the project intersect with the 0- 9.9% forest density category?

    Automatically answered
    Yes

36. Does the project intersect with the 10.0- 19.9% forest density category map?

    Automatically answered
    Yes

37. Does the project intersect with the 20.0- 29.9% forest density category map?

    Automatically answered
    No

38. Does the project intersect with the 30.0- 100% forest density category map?

    Automatically answered
    No

39. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 0.5 acre in total extent?

    Yes

40. Does the action area intersect the tricolored bat species list area?

    Automatically answered
    Yes

41. Is the action area located within 0.5-mile of radius of an entrance/opening to any known tricolored bat hibernacula or winter roost?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

    Automatically answered
    No

42. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

43. Has a presence/probable absence bat survey targeting the tricolored bat and following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines been conducted within the project area?

    No

44. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities? (If unsure, answer ""Yes."") **Note:** If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines.

    Yes

45. Do you have any documents that you want to include with this submission?

    No

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

1.6

If tree cutting will be part of the proposed action, at what time of year will tree cutting be conducted?

Tree cutting has not yet been scheduled.

Can the proposed action be modified to ensure that tree cutting will be conducted outside of the season when bats will be present and roosting in trees?

Yes. The Project will restrict tree cutting to the bat inactive season, when bats are not expected to be present and roosting in trees.

IPAC USER CONTACT INFORMATION

Agency: Wilmot city
Name: Cody Vicenik
Address: PO Box 1282
City: Humble
State: TX
Zip: 77347
Email cvicenik@headwayenviro.com
Phone: 7132089096

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Natural Resources Conservation Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

IN REPLY REFER TO:

August 4, 2026

Cody Vicenik
Headway Environmental
P.O. Box 1282
Humble, TX 77347

Dear Mr. Vicenik:

U.S. Fish and Wildlife Service (Service) staff received an IPaC consistency letter (Project code: 2026-0123044) on August 4, 2026, regarding a watershed improvement project in Wilmot, AR. The following comments are submitted in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.).

Service staff reviewed the information associated with the "may affect, not likely to adversely affect" determination for the pink mucket (*Lampsilis abrupta*). Based on this information, the Service concurs that the proposed action will not adversely affect listed species. Consultation for all other species that may occur within the project area was completed through IPaC. These determinations may be reconsidered should additional information regarding listed or proposed species or designated critical habitat become available.

The Service appreciates your commitment to the conservation of threatened and endangered species. For any questions, please contact Garett Huffstutler at 501-764-6811 or at garett_huffstutler@fws.gov.

Sincerely,

Jason Hight
Arkansas Field Supervisor

Arkansas Game and Fish Commission

Code Book

The regulations in this Code Book are hereby adopted by the Arkansas State Game and Fish Commission under authority of Amendment 35 to the Constitution of the State of Arkansas. All laws, rules, regulations, or orders in conflict with the regulations in this Code Book are hereby repealed by the Arkansas State Game and Fish Commission.

P1.01 Endangered Species List -- Animals

Classification	Species/Listing Name
Amphibians	
	Hellbender, Ozark (*Cryptobranchus alleganiensis bishopi*)
Birds	
	Black Rail (*Laterallus jamaicensis*)
	Crane, whooping (*Grus americana*)
	Plover, piping (*Charadrius melodus*)
	Red Knot (*Calidnis canutus*)
	Woodpecker, ivory-billed entire (*Campephilus principalis*)
	Woodpecker, red-cockaded (*Dryobates borealis*)
Crayfish	
	Crayfish, cave (*Cambarus aculabrum*)
	Crayfish, cave (*Cambarus zophonastes*)
Fish	
	Cavefish, Ozark (*Amblyopsis rosae*)
	Darter, Arkansas (*Etheostoma cragini*)
	Darter, leopard (*Percina pantherina*)
	Darter, yellowcheek (*Etheostoma moorei*)
	Shiner, Arkansas River Arkansas R. Basin (*Notropis girardi*)
	Sturgeon, pallid (*Scaphirhynchus albus*)
Insects	
	Beetle, American burying (*Nicrophorus americanus*)
Mammals	
	Bat, gray (*Myotis grisescens*)
	Bat, Little Brown *(Myotis lucifugus)*
	Bat, Indiana (*Myotis sodalis*)
	Bat, northern long-eared *(Myotis septentrionalis)*
	Bat, Ozark big-eared (*Corynorhinus (=Plecotus) townsendii ingens*)
Mollusks	
	Fatmucket, Arkansas (*Lampsilis powellii*)
	Mapleleaf, winged (*Quadrula fragosa*)
	Mucket, pink (pearlymussel) (*Lampsilis abrupta*)
	Mucket, Neosho (*Lampsilis rafinesquena*)
	Mussel, scaleshell (*Leptodea leptodon*)
	Mussel, fanshell (*Cyprogenia stegaria*)
	Mussel, ring pink (*Obovaria retusa*)
	Mussel, rabbitsfoot (*Quadrula cylindrica*)
	Mussel, spectaclecase (*Cumberlandia monondonta*)
	Mussel, snuffbox (*Epioblasma triquetra*)

Classification	Species/Listing Name
	Pearlshell, Louisiana (*Margaritifera hembeli*)
	Pearlymussel, Curtis (*Epioblasma florentina curtisii*)
	Pocketbook, fat (*Potamilus capax*)
	Pocketbook, Ouachita rock (*Arkansia wheeleri*)
	Pocketbook, speckled (*Lampsilis streckeri*)
	Turgid blossom (*Epioblasma turgidula*)
Reptiles	
	Alligator, American (*Alligator mississppiensis*)

All other federally-listed Arkansas species or candidates listed on the U.S. Fish and Wildlife Service site (https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=AR&status=listed), as they are added or deleted, are included in this Addendum.

Appendix C.
Site Visit Photographs



Photo 1: View of a maintained roadside drainage ditch and culvert near the intersection of Highway 52 E and Keller Ave, facing west.



Photo 2: View of a maintained roadside drainage ditch and culvert along 2nd Avenue, facing southeast.



Photo 3: View of a maintained roadside drainage ditch and culvert along East Curry Street, facing east.



Photo 4: View of cultivated cropland and wooded vegetation along the alignment of the proposed drainage feature east of South Church Street, facing northeast.



Photo 5: View of maintained grassland along the alignment of the proposed drainage feature east of Highway 165 S, facing northeast toward the Wilmot water tower.



Photo 6: View of wooded riparian vegetation north of Bayou Street toward Bayou Bartholomew near the proposed drainage outfall, facing north.



Photo 7: View of herbaceous vegetation and adjacent agricultural field along the proposed drainage alignment east of Plenty Street, facing north.



Photo 8: View of a wooded drainage channel along the proposed drainage alignment west of State Highway 209, facing southwest.

Headway Environmental™

E-4.
Waivers

USDA

United States Department of Agriculture

SUBJECT: Waiver Request of Real Property Right Restriction Related to Bipartisan Infrastructure Law (BIL) Projects in Arkansas

April 16, 2024

TO: Michael E. Sullivan
State Conservationist, Arkansas

This memo is in response to your letter dated March 18, 2024, in which you requested a waiver to the National Watershed Program Manual (NWPM) as it relates to the definition and cost-share policy associated with real property as it relates to storm sewer modifications on nineteen BIL projects.

The following NWPM policy sections are requested to be waived:

- NWPM 500.11 (10) states, "*New storm and sanitary sewers, or relocations and changes to existing sewer facilities, in urban or built-up areas are the sole responsibility of the SLO."*
- NWPM 500.42, D.3 states in part, "*Watershed Program cost-share for land treatment is not available for implementation of a practice or measure that is cost-shared under another Federal program, or for real property rights*".
- NWPM 506.50, K (12) (iv) defines real property rights as "*Changes of existing telephone, power, gas, water, and sewer lines or other utilities. made necessary by the works of improvement. This does not include changes to existing irrigation or drainage facilities.* "

Based on discussion with you and your staff, the Watershed Branch understands the primary purpose for the nineteen projects is Flood Prevention. It is anticipated that to effectively address flooding issues in these rural communities, stormwater systems will need to be upgraded. It is also noted that these projects are in historically underserved (HU) areas.

Your request to allow storm sewer modifications on the nineteen identified BIL projects is approved if the following conditions apply:

- Any real property included in the watershed project plan has a direct and justifiable impact to the flood prevention program purpose. This nexus will be verified by hydrologic and hydraulic floodplain mapping for the amount of flood protection selected during the planning process. Areas outside of the flood boundary are not eligible for real property assistance, unless a specific determination is made demonstrating that such real property has a direct impact to the flood prevention program purpose.
- Authorized measures are limited to changes in stormwater systems and modifications to roads, bridges, and culverts to alleviate flooding as associated with the project.
- NRCS will not reimburse for any road surface beyond gravel (i.e. no pavement).

- The sponsor agrees to the operation, maintenance, and replacement (OM&R) of any works of improvement and associated real property rights.
- All appropriate National Engineering Manual requirements and applicable NRCS standards and specifications will be followed for any works of improvements designed or constructed.

This waiver is granted for the following projects:

- City of Turrell
- Cities of Hughes and Jennette
- Cities of Forrest City-Haynes-Marianna
- City of Cotton Plant
- City of Altheimer
- City of Camden
- City of Wilmot
- Cities of Lewisville and Stamps
- City of Dumas
- City of Blytheville
- City of El Dorado
- City of Eudora
- City of Pine Bluff
- Lick Creek-Big Creek/Helena-Lake View-Marvell
- Long Lake- Little Bee Bayou/Helena
- Cities of Fulton and McNab
- City of Fountain Hill
- City of Menifee
- City of Madison

Cost share rates for the waived real property items will be subject to the flood prevention rate as noted in the NWPM. If you have additional questions, please contact Sonya Keith, National Watershed Operations Program Coordinator at sonya.keith@usda.gov.

Digitally signed by
RALPH SMITH
Date: 2024.04.16
21:54:56 -04'00'

Ralph Smith
Acting Branch Chief Watershed Programs

cc:
James Tillman, Regional Conservationist, Southeast, NRCS, Washington, D.C.
Karen Woodrich, Deputy Chief for Programs, Washington, D.C.
Emily Fife, Acting Division Director, CPTAD, Washington, D.C.
Kevin L. Farmer, Director, Conservation Engineering Division, NRCS, Washington, D.C
Gary Bennett, Acting Director, National Water Management Center, NRCS, Little Rock, AR
Sonya Keith, National Watershed Operations Program Coordinator, Washington, D.C.
Randy Childress, ASTC-Water Resources, NRCS, Little Rock, AR

From: Smart, Bronson - FPAC-NRCS, UT
To: Childress, Randy - FPAC-NRCS, AR; Harvey, Anthony - FPAC-NRCS, FL
Cc: Sheridan, Diana - FPAC-NRCS, AR; Kinkaid, William - FPAC-NRCS, AR; Keith, Sonya - FPAC-NRCS, KY
Subject: FW: Arkansas BIL funded projects
Date: Thursday, August 22, 2024 2:22:04 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png

Randy,
As per AR NRCS request, and to expedite these associated projects, please see the approved waiver for the AR BIL projects. You can share with ABMA and sponsors as needed on projects.

Tony,
Please share with the TSG reviewers so they're aware.

Thank you,
Bronson

Bronson Smart, PE
National Watershed Rehabilitation Program Manager
E-mail: bronson.smart@usda.gov | Cell: 801-710-5387

From: Smith, Ralph - FPAC-NRCS, TN <ralph.smith@usda.gov>
Sent: Thursday, August 22, 2024 11:19 AM
To: Smart, Bronson - FPAC-NRCS, UT <bronson.smart@usda.gov>
Subject: Arkansas BIL funded projects

Hello Bronson –

Based on my delegated authority to approve waivers, and given the Chiefs request to expedite the planning process associated with these Arkansas projects:

For PL 83-566 related work tied to the project objective of flood prevention and/or associated with restoring drainage ways, the replacement or repair of existing pavement damaged by installation of works of improvements or new pavement treatments required due to street/road relocations is permitted. Curbs, gutters, and driveway surfaces destroyed during culvert replacement or other flood prevention measures identified may also be replaced as a part of this project. Pavement measures shall not exceed the dimensions of the existing surfaces being replaced. Utility relocations associated with road relocations and surfacing measures shall also be considered as project costs.

Ralph Smith

Acting Branch Chief
USDA NRCS Watershed
Programs Branch

Cell: (202) 819-6587
Email: Ralph.Smith@usda.gov

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