

U.S. Department of Transportation  
Federal Aviation Administration  
Southwest Region

**FINDING OF NO SIGNIFICANT IMPACT  
And  
RECORD OF DECISION**

Taxiway E Extension  
Drake Field Airport  
Fayetteville, AR

May 31, 2024

**I. INTRODUCTION**

The purpose of this Finding of No Significant Impact and Record of Decision (FONSI/ROD) is to briefly present the reasons why the approval of Federal actions supporting the proposed Taxiway E extension at Drake Field Airport (FYV), which serves the city of Fayetteville, Arkansas, will not have a significant effect on the human environment. The City of Fayetteville, the owner of the airport, requested the following Federal actions:

- Unconditional approval of portions of the Airport Layout Plan (ALP) that depict the Proposed Project subject to Federal Aviation Administration (FAA) review and approval pursuant to 49 USC § 47107(a)(16).
- Determinations under 49 U.S.C. §§ 47106 and 47107 relating to the eligibility of the Proposed Action for federal funding.

The FAA is the Federal agency responsible for the approval of the proposed federal actions outlined above and analyzed in the Environmental Assessment (EA). The FAA has determined that the Proposed Action will have no significant impact on the human environment.

Attached to this FONSI/ROD is the EA on which the finding is made.

**II. SUMMARY**

The EA was prepared pursuant to the provisions of the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) regulations (40 C.F.R. Parts 1500-1508). Additionally, the EA meets the guidelines identified in FAA Orders 1050.1F, *Environmental Impacts: Policies and Procedures* and 5050.4B, *NEPA Implementing Instructions for Airport Actions*.

No thresholds of significance were found to be exceeded in the EA. After review of the EA and other supporting documentation, the FAA determined that a FONSI/ROD was justified for the proposed airport improvements.

The EA was released for public and agency review with local citizens encouraged to provide comments. Notice of availability of the EA and an opportunity to request a public hearing was advertised in the local paper and on a website specifically designed for this purpose.

### **III. BACKGROUND**

Drake Field Airport is a public use airport located southeast of the city of Fayetteville, Arkansas just east of US Highway 71. The airport is owned and operated by the city of Fayetteville and is approximately 631 acres in size. Aircraft utilizing the east side of the airport currently have to back-taxi or cross the runway creating safety issues.

### **IV. PURPOSE AND NEED**

The Airport's 2015 Airport Layout Drawing (ALD) and 2023 Draft Airport Master Plan Update (MPU) shows the extension of Taxiway E from the Taxiway D connector to Taxiway B3 connector opposite Runway 16/34. Aircraft utilizing the east side of the airport currently have to back-taxi or cross the runway creating safety issues. Alignment alternatives were examined when considering runway crossing and back taxiing from the east side of the airport.

#### **A. Need for the Proposed Project**

The need for the Proposed Action is described in Chapter 2 in the EA. The need is supported based on Drake Field Airport's role as a general aviation airport and is considered important to the city of Fayetteville and Northwest Arkansas. In order to allow Drake Field Airport to continue to fulfill its assigned role, it needs to be able to provide a safe operating environment. To help do that, the airport needs to provide a fully functional and compliant parallel taxiway to provide safety for arriving and departing aircraft utilizing the east side of the airfield and provide direct access to the Runway 34 end.

#### **B. Purpose of the Proposed Project**

The proposed solution to the need is to extend the partial parallel taxiway on the east side of Runway 16/34 as presented in the most recent ALD. All elements associated with the proposed solution are described in Chapter 3 in the EA.

### **V. ALTERNATIVES**

The FAA explored and objectively evaluated reasonable alternatives that were considered practical and feasible in meeting the purpose and need. Chapter 3 of the EA describes the alternatives considered to meet the airport's purpose and need.

Three alternatives were proposed in the EA. These consisted of the Proposed Action, Alternative 2, and the No Action Alternative. A detailed explanation of each alternative is provided in the EA and will not be repeated herein. Note that the No Action Alternative is always required to be analyzed in accordance with the CEQ regulations 40 CFR § 1502.14.

The FAA has determined in this FONSI/ROD that the Proposed Action is the FAA's preferred and selected alternative. In arriving at this decision, the FAA considered all pertinent factors, including the environmental impacts as well as the FAA statutory charter in the Federal Aviation Act of 1958, as amended, to encourage and foster the development of civil aeronautics (49 U.S.C. § 40101).

### **VI. ENVIRONMENTAL CONSEQUENCES**

#### **A. Potential Impact Resource Categories**

The EA analyzed relevant environmental categories based on FAA Order 5050.4B, "*National Environmental Policy Act Implementing Instructions for Airport Projects*" (NEPA). Those resource categories that the selected alternative has the potential to impact are discussed below. Any mitigation measures proposed

are discussed in Section VIII.

**i. Air Quality**

The Proposed Action slightly alters aircraft taxi times and will not affect future aircraft activity or operations, and changes in runway use patterns. Temporary increases in emissions resulting from construction activities may occur for a limited period of time. This temporary increase will not rise to the level of significance.

**ii. Biological Resources**

The Proposed Action would directly affect approximately 7.9 acres of herbaceous vegetation. The Proposed Action will have no effect on some federally listed species and may affect, not likely to adversely affect remaining federally listed species. The Proposed Action would not jeopardize the continued existence of proposed and candidate federal species. Table 4 in the EA provides an impact summary for federally listed species habitat.

**iii. Climate**

Based on only a temporary influence on greenhouse gases (GHGs) during construction, no significant environmental impacts are expected concerning climate. The proposed construction activities are expected to include a temporary increase in GHG emissions; however, this increase will have minimal impacts to emissions of GHGs and any emissions of GHGs as a result of the proposed construction and development activities would be considered negligible compared to the annual U.S. emissions of GHGs. GHG emissions will not rise to the level of significance.

**iv. Hazardous Materials, Solid Waste, and Pollution Prevention**

The Proposed Action would have no direct impacts to known hazardous materials, solid waste, or hazardous waste sites. Short-term and temporary impacts may occur as a result of construction activities. Construction best management practices will be implemented during construction. Any waste generated will be handled according to applicable local, state, and federal guidelines.

**v. Historical, Architectural, Archeological, and Cultural Resources**

The Proposed Action will have no impacts to historic, architectural, archaeological, or cultural resources sites listed on or eligible for listing on the National Register of Historic Places. Tribal Historic Preservation Officers were provided opportunity to comment. No comments were received.

**vi. Land Use**

All elements of the Proposed Action are located on airport-owned property. The Proposed Action will not affect land use around the airport. No conflicts in land use planning are anticipated according to the Airport Layout Drawing (ALD). No direct or indirect land use changes are anticipated.

**vii. Natural Resources and Energy**

No adverse effects or exceedances of local or regional natural resources and energy supplies are anticipated. As the Proposed Action would extend Taxiway E and other proposed improvements do not require extensive energy demands, no substantial changes in energy requirements would result from the Proposed Action.

**viii. Noise and Noise-Compatible Land Use**

The Proposed Action will not result in any changes in aircraft operations, nighttime operations, runway use, or aircraft fleet mix during construction or after the project is completed. The airfield configuration will change to accommodate the extended taxiway but will not substantially alter aircraft use of the taxiway. The Proposed Action would have no effect on surrounding land uses as it is located entirely on airport-owned property and is fully compatible with airport operations. No noise or noise-compatible land use impacts will occur as a result of the Proposed Action.

**ix. Socioeconomics**

The Proposed Action is in alignment with future growth of the regional Northwest Arkansas economy and is not anticipated to directly impact airside or landside traffic patterns. No direct effects related to residential/business acquisitions or relocations, disruptions in established communities or planned developments, or children's environmental health and safety are anticipated as a result of the Proposed Action. Based on the analysis, no disproportionately high or adverse impacts to EJ populations are anticipated as a result of the Proposed Action.

**x. Visual Effects and Visual Character**

The Proposed Action would not produce additional light emissions other than those experienced from the existing airfield as visible within the direct study area. The Proposed Action will adhere to lighting standards that would help mitigate potential light pollution. The overall setting of the airfield would not change drastically; therefore, no visual impacts are anticipated. Temporary and additional safety lighting during construction is anticipated and will comply with design plans as developed. The Proposed Action would not change the visual character of the direct study area and is compatible with the existing visual character of the airport. The extended taxiway would not obstruct views of receptors around the airport and is not anticipated to provide stark contrast of the visual character surrounding the airport.

**xi. Water Resources**

The Proposed Action would impact approximately 2.19 acres of emergent wetlands and approximately 212 linear feet of stream due to cut and fill activities required to establish minimum FAA design grades associated with the taxiway extension. Impacts to wetlands are summarized in Table 6 of the EA. The city of Fayetteville is currently pursuing issuance of the appropriate Section 404 permit and mitigation for unavoidable wetland impacts. Overall impacts will not rise to a level of significance.

The Proposed Action was evaluated using the Federal Flood Risk Management Standard (FFRMS) for determining floodplain impacts. The Proposed Action would encroach on approximately 7.8 acres of FEMA-mapped 100-year floodplains, 0.38 acre of FEMA-mapped 500-year floodplains, and less than 0.01 acre of floodway. The Proposed Action is not anticipated to increase the probability of loss of human life. An updated Hydraulic Analysis for the existing conditions is currently being developed as of the date of this document. The Hydraulic Analysis will be updated with the Proposed Action during the detailed design stage of the project. The City of Fayetteville's floodplain administrator will review and evaluate floodplain impacts and the Hydraulic Analysis that will be prepared during design. The final results of the Hydraulic Analysis will determine if the Proposed Action would cause a rise in the floodplain elevation. If a rise is determined, a Conditional Letter of Map Revision (CLOMR) or Letter of Map Revision (LOMR) will be coordinated with and obtained from the City of Fayetteville's floodplain administrator per City Code 168.10.U prior to construction. Overall, the project will be designed to minimize adverse impacts to the downstream floodplain's natural and beneficial values. An opportunity for public review is required by EO 11988 and the Department of Transportation (DOT) Order 5650.2 and completed during the EA public advertisement.

**B. Resource Impact Categories Unaffected by the Proposed Action or Alternatives**

The other four environmental resources identified in FAA Orders 1050.1F and 5050.4B were determined not be impacted by the Proposed Action, Alternative B, and the No Action Alternatives. Examples of these resources include, but are not limited to, coastal resources, Section 4(f), farmlands and wild and scenic rivers.

**VII. AGENCY COORDINATION AND PUBLIC INVOLVEMENT**

Consultation for the Proposed Action occurred with the State Historic Preservation Office (SHPO) regarding the presence of cultural historic and/or archaeological sites located within or near the Proposed Action. The SHPO responded with a finding of no historic properties affected (Appendix B of the EA). The Arkansas



Natural Heritage Commission (ANHC) reviews included federal and state species and elements of special concern. Their findings showed no records within the Proposed Action area, but noted that the West Fork of the White River is known to support species of conservation concern. ANHC correspondence is provided in Appendix B of the EA and are summarized in Section 4.5 of the EA. Consultation with the U.S. Fish and Wildlife Service (USFWS) resulted in findings of “no effect” and “may affect, not likely to adversely affect” for all currently listed federal threatened and endangered species. Coordination with the U.S. Army Corps of Engineers resulted in issuance of a Preliminary Jurisdictional Determination verifying the on-site presence of 13.44 acres of wetlands and 823 linear feet of stream are jurisdictional under Section 404 of the Clean Water Act.

The Proposed Action is located entirely on the airport property and impacts do not rise to the level of significance or meet special purpose reporting requirements for all potentially impacted resources, except wetlands and floodplains. As a result, the EA was released for public and agency review with local citizens encouraged to provide comments. Notice of availability of the EA and an opportunity to request a public hearing was advertised in the local paper and on a website specifically designed for this purpose. An opportunity for public review is required by EO 11988 and the Department of Transportation (DOT) Order 5650.2 and completed during the EA public advertisement.

## **VIII. CONDITIONS AND MITIGATION**

As prescribed by 40 CFR §1505.3, the FAA must take steps as appropriate to the action, such as through special conditions in grant agreements, property conveyance deeds, releases, airport layout plan approvals, and contract plans and specifications, and must monitor these as necessary to assure that representations made in the EA and FONSI will be carried out. With respect to the Proposed Action, the following mitigation measure is a condition of approval:

- The airport will comply with all applicable federal, state, and local development regulations, Executive Orders, and permitting requirements.
- The airport will complete and maintain a construction Stormwater Pollution Prevention Plan throughout the duration of disturbance activities. BMPs such as silt fence, rolled fiber barriers, ditch checks, and other standard practices will be implemented according to the construction SWPPP and NPDES permit.
- Wetland mitigation is required for unavoidable impacts to 2.19 acre of emergent wetlands and 212 linear feet of stream channel. Wetland credits will be coordinated and approved by USACE and will be purchased by FYV to compensate for these impacts through the Section 404 permit process.
- The final results of the Hydraulic Analysis will determine if the Proposed Action would cause a rise in the floodplain elevation. The proposed taxiway will be designed to cause as little effect to the Base Flood Elevations (BFE) as possible, with floodplain mitigation included where applicable. If the proposed design causes a rise to BFEs, a Conditional Letter of Map Revision (CLOMR) application will be submitted to FEMA prior to construction, followed by a Letter of Map Revision (LOMR) once construction is completed. FEMA requires that no rises to BFEs can occur at existing structures (i.e. buildings). Therefore, the proposed design will limit any floodplain rises to locations outside of existing structures. Local floodplain ordinances and FEMA regulations will be met.

## **IX. AGENCY FINDINGS**

The FAA makes the following determinations for this project based upon a careful review of the attached FEA, the supporting administrative record, and appropriate supporting information. The FAA weighed both

the potential positive and negative consequences that this Proposed Action may have on the quality of the human environment. The FAA has determined that the Proposed Action meets the purpose and need of the proposed project and best implements necessary airfield modifications to meet FAA design standards.

The following determinations are prescribed by the statutory provisions set forth in the Airport and Airway Improvement Act of 1982, as codified in 49 USC §47106 and 47107.

- The FAA has determined the Proposed Action would result in safe and efficient use of U.S. airspace as prescribed in 49 U.S.C. §40103(a).
- The Proposed Action is reasonably necessary for use in air commerce (49 U.S.C. §44502(b)).
- The Proposed Action is reasonably consistent with existing plans of public agencies responsible for development of the area surrounding the airport (49 U.S.C. §47106(a)(1)).
- The interests of the community in or near where the Proposed Action is located have been given fair consideration (49 U.S.C. §47106(b)(2)).

## **X. DECISION AND ORDER**

After careful and thorough consideration of the facts contained herein, the undersigned finds the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101(a) of the National Environmental Policy Act of 1969 (NEPA) and other applicable environmental requirements. The undersigned also finds the proposed Federal action is not a major federal action significantly affecting the quality of the human environment or including any condition requiring any consultation pursuant to section 102(2)(C) of NEPA. As a result, the FAA will not prepare an Environmental Impact Statement for this action.

This decision does not constitute a commitment of funds under the Airport Improvement Program or Infrastructure Investment and Jobs Act of 2021 (IIJA), Public Law 117-58 (also referred to as the Bipartisan Infrastructure Law (BIL)) however, it does fulfill the environmental prerequisites to approve applications for grants of AIP or BIL funds for the proposed project in the future. (49 U.S.C § 47101)

Accordingly, under the authority delegated to me by the Administrator of the FAA, I approve and direct that agency action be taken to implement the proposed extension of Taxiway E presented to the FAA by Drake Field Airport. The approved action is specifically described in Part IV of this FONSI/ROD and identified in the EA as the Proposed Action. This approval is to be taken under the authority of 49 U.S.C. 40104, 44701, 46110, 47101, and 47122.

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Ignacio Flores  
Airports Division Director FAA,  
Southwest Region

### Right of Appeal

This FONSI/ROD constitutes a final order of the FAA Administrator and is subject to the exclusive judicial review under 49 USC§ 46110 by the US Circuit Court of Appeals for the District of Columbia or the US Circuit Court of Appeals for the circuit in which the person contesting the decision resides or has its principal place of business. Any party having substantial interest in this order may apply for review of the decision by filing a petition for review in the appropriate US Court of Appeals no later than 60 days after the order is issued in accordance with the provisions of 49 USC§ 46110. Any party seeking to stay implementation of the ROD must file an application with the FAA prior to seeking judicial relief as provided in Rule 18(a) of the Federal Rules of Appellate Procedure.

# **Environmental Assessment (EA)**

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## **Drake Field Airport (FYV) Taxiway E Extension**

**City of Fayetteville, Arkansas**

April 10, 2024

Prepared by:



**Taxiway E Extension**

**Preparer's Certification**

I hereby certify that this Environmental Assessment for the Drake Field Airport (FYV) was prepared by Garver under my direct supervision for the City of Fayetteville.



Prepared by: Garver, LLC

Prepared for: City of Fayetteville

This Environmental Assessment becomes a Federal document when evaluated, signed, and dated by the responsible FAA official.



Responsible FAA Official

Date

**Taxiway E Extension**

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Appendix D	Stream and Wetland Assessment
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**Taxiway E Extension**

## **1.0 Introduction and Background**

The Drake Field Airport (FYV or Airport) is a public use airport that is owned and operated by the City of Fayetteville and serves general aviation and charter aircraft. The Airport is located on the south side of Fayetteville, near Greenland, Arkansas and is situated near US Highway 71. A general location map of the Airport in relation to the City is shown in **Figure 1**. The Airport covers approximately 631 acres (ac), has one runway (Runway 16/34) and a full parallel taxiway (Taxiway B) on the west side of the runway.

The Airport's 2015 Airport Layout Drawing (ALD) shows the extension of Taxiway E from the Taxiway D connector to Taxiway B3 connector opposite Runway 16/34. The Airport Master Plan Update (MPU) completed in 2006 also identified the extension of Taxiway E. The Proposed Action and connected actions are described in detail in Section 3 and shown in **Appendix A**.

This EA has been prepared per the National Environmental Policy Act (NEPA) of 1969, Council on Environmental Quality (CEQ) implementing regulations (40 Code of Federal Regulations (CFR) Parts 1500-1508), Federal Aviation Administration (FAA) Orders 5050.4B and 1050.1F, and the FAA Environmental Desk Reference for Airport Actions. A list of EA preparers is located in **Section 8**.

## **2.0 Purpose and Need**

### **2.1 Purpose**

The purpose of the Proposed Action is to extend the partial parallel taxiway on the east side of Runway 16/34. All design and development associated with the Proposed Action, including connected actions identified in **Section 3**, would meet current FAA Airport Design Standards per Advisory Circular (AC) 150/5300-13B, 14 Code of Federal Regulations (CFR) Part 77 airspace regulations, AC 150/5325-4B, and other appropriate FAAACs. The FAA's Federal Action includes approval of the ALP to reflect the Proposed Action.

### **2.2 Need**

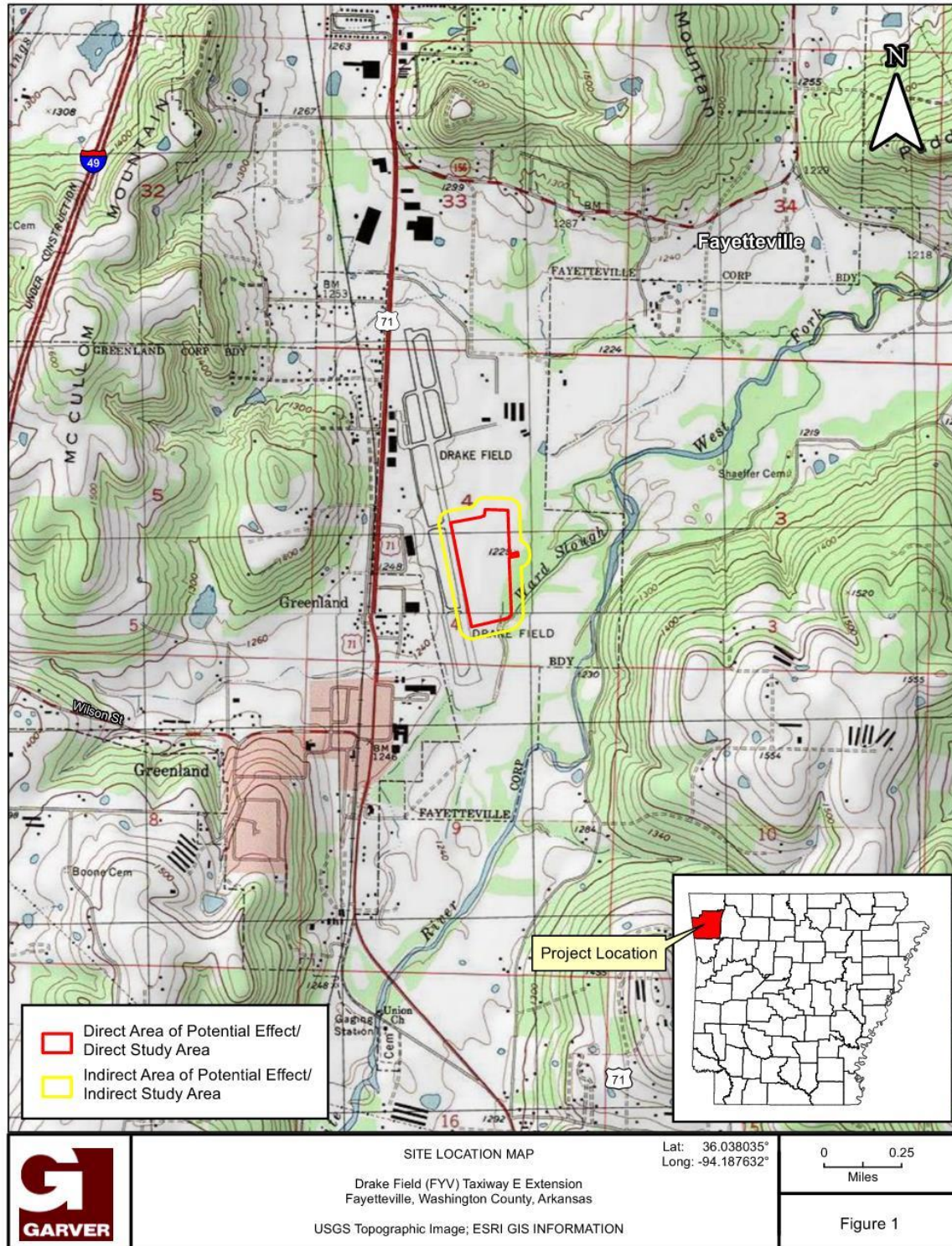
The Proposed Action is needed to provide arriving and departing aircraft utilizing the east side of the airfield direct access to the Runway 34 end and thus reducing safety issues of back taxiing or crossing the runway. The Proposed Action is shown on the 2015 Airport Layout Drawing (ALD) and in the 2023 Draft Airport Master Plan Update (MPU).

The following connected actions are included as part of the Proposed Action, partial extension of Taxiway E, and needed to comply with the airport development standards set forth by FAA:

- Grading and drainage
- Signage and lighting
- Trenching of electrical lines
- Electrical system upgrades



**Taxiway E Extension**



**Figure 1 – Site Location Map**

## **Taxiway E Extension**

### **3.0 Alternatives**

Two build alternatives were considered in achieving the purpose and need. The two build alternatives were evaluated through a screening process and Alternative 2 was not carried forward for further review in this document due to greater environmental impacts, permitting and/or mitigation schedule risks.

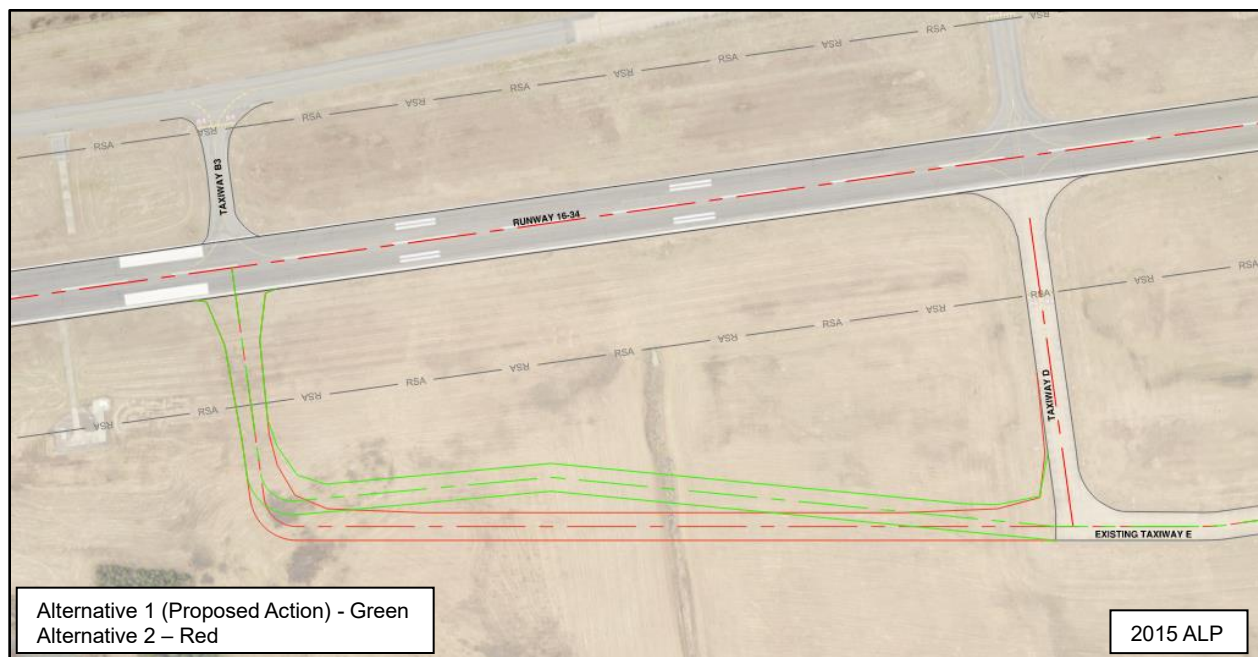
The build alternative considered in this EA is identified as Alternative 1 and shown in **Figure 2**. The No Action Alternative will not meet the purpose and need for the project; however, it was retained to satisfy the requirements of NEPA and maintain a baseline to allow for a comparison of impacts.

#### **3.1 Alternatives Selection Criteria**

Two key categories of selection criteria were identified during the alternative screening process. Selection criteria used to evaluate the Proposed Action (Alternative 1) and other alternatives included wetland and floodplain impacts and are detailed in **Table 1**. These elements were evaluated in meeting the purpose and need for the Proposed Action and alternatives and consider estimated footprints and conceptual layouts for alternatives.

#### **3.2 Alternatives Evaluation**

The sections below briefly describe and compare potential impacts associated with the Taxiway E extension build alternatives. **Figure 2** shows alternatives considered.



**Figure 2 – Alternatives Considered**



## ***Taxiway E Extension***

### ***3.2.1 Alternative 1 – Proposed Action (Green Alt)***

Alternative 1 is considered the Proposed Action (shown in **Figure 3**) and includes extending Taxiway E to the existing Taxiway B3 connector and Runway 16/34 intersection. The following actions are included as the Proposed Action and needed to comply with the airport development standards set forth by FAA for the safe and efficient operation of aircraft at the airport:

- Installation of 1,828 linear feet of taxiway.
- Installation of approximately 250 linear feet of reinforced concrete pipe.
- Installation of taxiway edge lighting and signage.

The Proposed Action includes the following connected actions, which are consistent through the build alternatives:

#### Taxiway E Extension

The proposed extension of Taxiway E will be designed to accommodate FAA separation distance requirements provided in AC 150/5300-13B for the safe and efficient maneuvering of aircraft. This 1,828-foot taxiway extension would maintain the 50-foot width, provide for an extended but partial parallel taxiway and tie to the Taxiway B3 connector. Refer to **Figure 3** for the taxiway extension layout. This expansion would require clearing and grubbing of approximately 7.6 ac of existing airport maintained grassed area.

#### Drainage Improvements

Drainage improvements will include installation of a reinforced concrete pipe and grate inlet on the infield side to convey stormwater drainage off the airport to the southeast. The drainage pipe would be placed in an existing drainage ditch.

#### Trenching Electric Lines

As a result of extending the taxiway, the buried electric lines would be installed adjacent to the new taxiway consistent with FAA design standards.

#### Signage, Lighting, and Striping

Taxiway signage, edge lighting, and striping of the extended taxiway will occur consistent with FAA design standards.

### ***3.2.2 Alternative 2 – Red Alt***

Alternative 2 also includes extending Taxiway E to the existing Taxiway B3 connector and Runway 16/34 intersection and is shifted slightly north in the middle. The same actions are included as the Proposed Action. This alternative would incur greater wetland and floodplain impacts and was dismissed from further consideration in this EA.

## **Taxiway E Extension**

### **3.3 Alternatives Summary**

After analysis, the preferred alternative (Alternative 1) is the least environmentally damaging practicable alternative. It meets the project need and purpose, and there are no practicable alternatives with less impacts to the natural and built environment. Alternative 2 is considered impracticable based on greater impacts to wetlands and floodplains. Refer to **Table 1** for a summary of the potential impacts associated with both build alternatives. The No Action Alternative does not meet the project purpose and need; therefore, is not considered a viable alternative.

**Table 1: Alternatives Impact Screening Matrix**

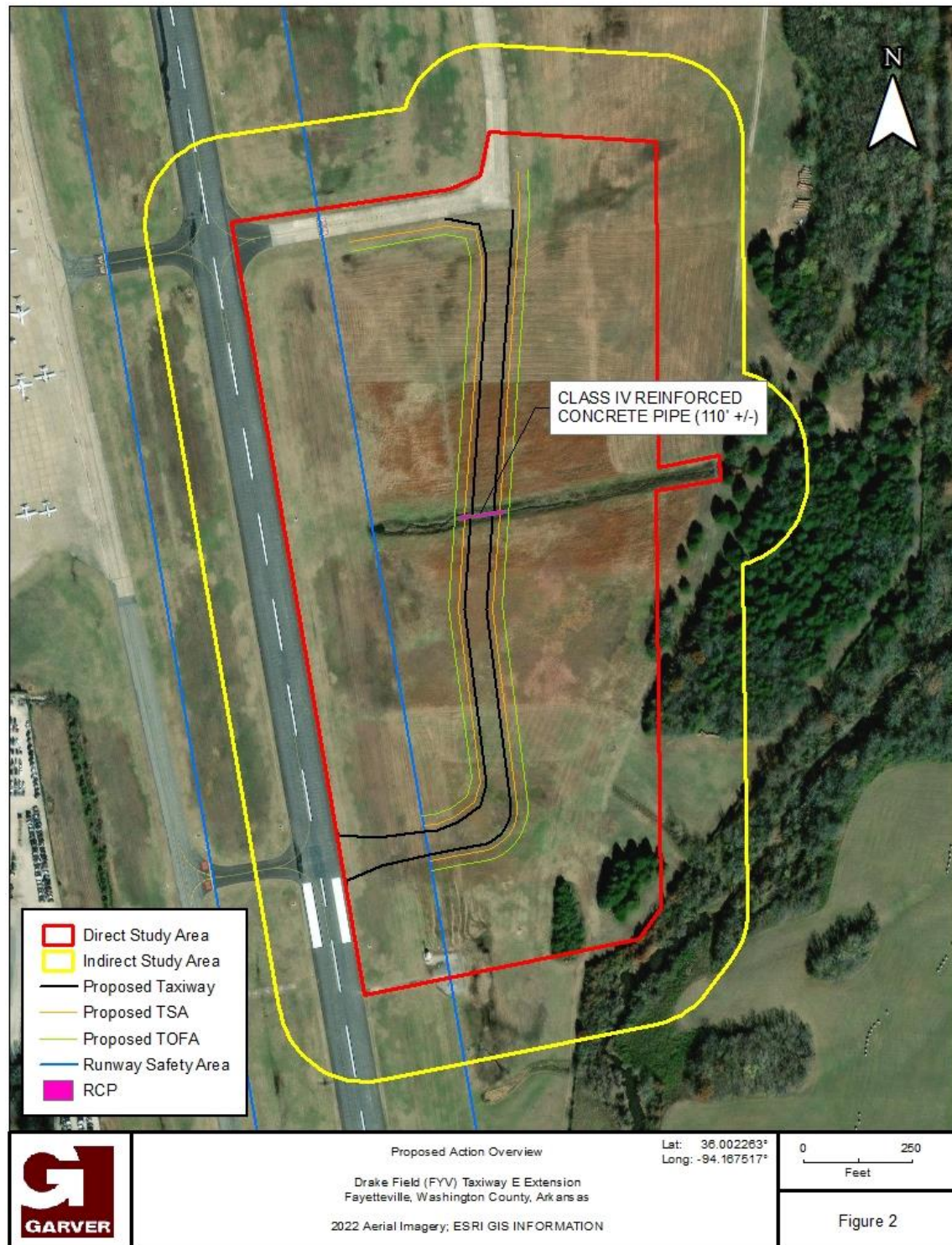
Resource Category Impacted	Alternatives		
	No Action*	Alt. 1 (Proposed Action)	Alt. 2
Wetlands (ac)	0	2.19	2.4
Floodplains/Floodway (ac)	0	8.19	8.37

\*Alternative does not meet purpose or need.

### **3.4 Proposed Action Construction Phasing**

The Proposed Action is anticipated to be constructed by 1<sup>st</sup> Quarter 2026.

**Taxiway E Extension**



**Figure 3 – Proposed Action Layout**



## **Taxiway E Extension**

### **4.0 Affected Environment, Environmental Consequences, and Mitigation**

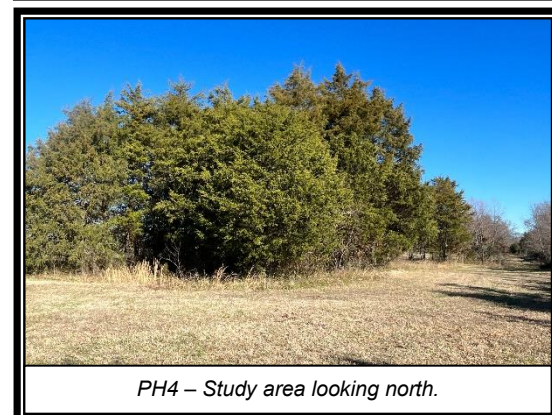
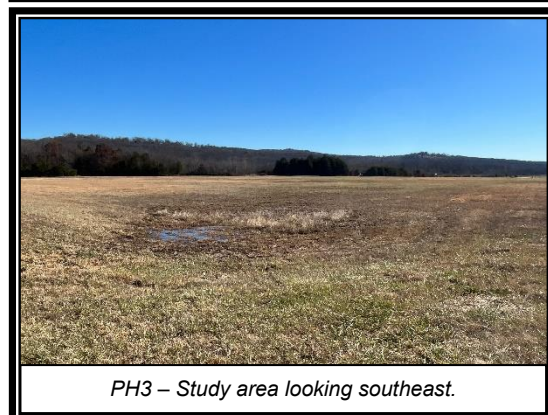
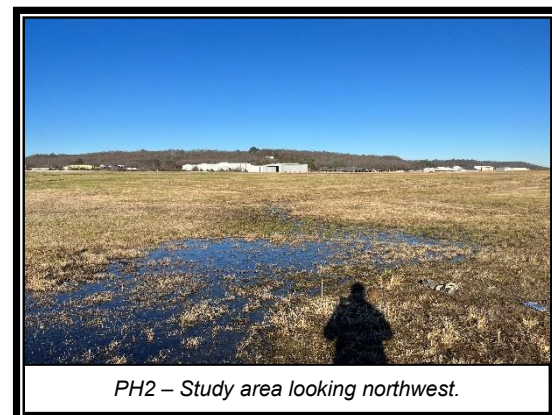
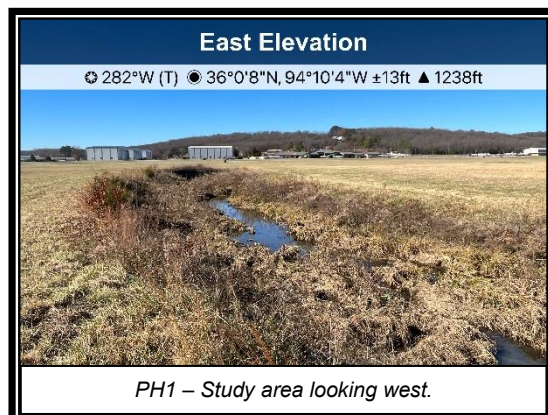
#### **4.1 Introduction**

This section describes the existing environmental conditions within the study area for resources that could be affected by the Proposed Action. Site visits were conducted on November 30, 2022, and August 21, 2023, to document the existing conditions and environmental resources within the study area. Resources were identified and impacts evaluated according to FAA Orders 1050.1F, 1050.1F Desk Reference, and 5050.4B. The No Action Alternative is retained to satisfy the requirements of NEPA and provide an environmental baseline for the build alternative. Agencies consulted during preparation of the EA also contributed to the evaluation of the potential effects on specific resources. The study area consists of approximately 36 acres in size and is described below in detail.

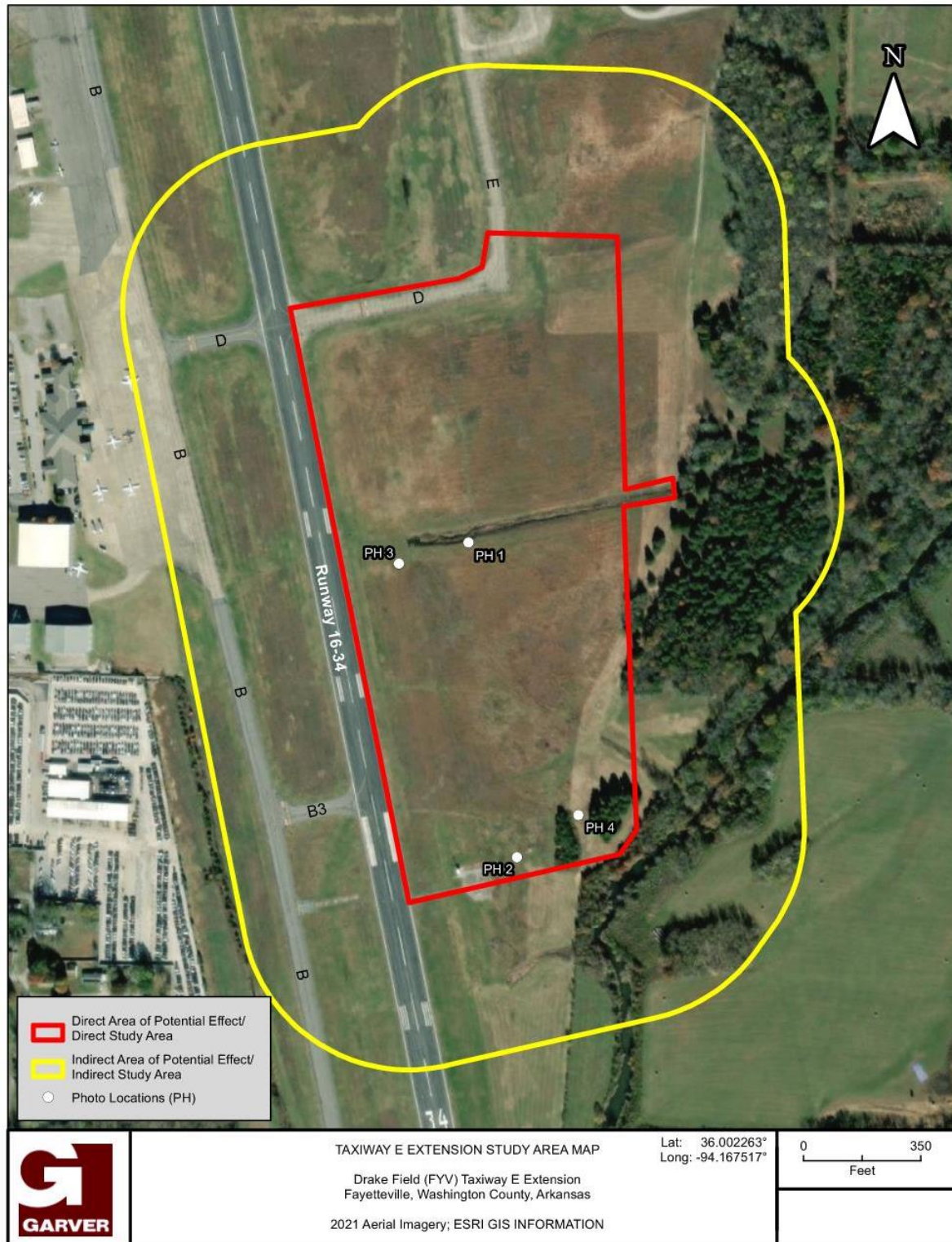
#### **4.2 Study Area**

**Figure 4** shows the study area for the Proposed Action developed to adequately assess potential direct impacts incurred by the Proposed Action. The indirect study area is defined as the area in which visual effects could be observed and is included in the study area, also shown in **Figure 4**.

The descriptions, photographs, and figures in this section depict current conditions within the study area and the resources that will be affected as the project moves forward through design and into construction. Photographs of the project site are included below. **Figure 4** shows the location where each photograph was taken.



**Taxiway E Extension**



**Figure 4 – Study Area and Affected Environment Overview**



## ***Taxiway E Extension***

### **4.3 Impact Assessment**

Assessing impacts also includes documenting agency comments and concerns regarding agency-managed resources that may be affected by the project. In September and October 2023, letters were sent to applicable local, state, and federal agencies to assess the level of environmental consequences based on the purpose and need of the project.

This section describes the existing natural and social environmental resources that could be affected by or could affect the Proposed Action or the No Action Alternative. Only those specific resources relevant to potential impacts are described in detail. Resources potentially impacted by the Proposed Action and the No Action Alternatives are evaluated in this section in accordance with FAA Order 1050.1F. **Appendix B** contains agency correspondence.

Environmental resources that are not impacted by the Proposed Action are not described in detail in this EA or discussed further as a result of no impact determinations.

### **4.4 Air Quality**

#### ***4.4.1 Affected Environment***

The U.S. Environmental Protection Agency (EPA) developed the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA) for the six most common air pollutants: carbon monoxide (CO), nitrogen dioxide (NO<sub>x</sub>), ozone, particulate matter (PM), sulfur dioxide, and lead. These pollutants are regulated by the EPA through human health-based (primary standards) and environmental-based (secondary standards) criteria. The NAAQS are applicable to all areas of the United States. Areas of the United States with poor air quality that have ambient concentrations of these criteria pollutants above the NAAQS are designated as “nonattainment areas”. A nonattainment area is required to have an applicable State Implementation Plan (SIP) that sets mitigation measures and timelines to bring ambient concentrations of the criteria pollutants below the NAAQS. When ambient concentrations in a nonattainment area meet the NAAQS, the EPA designated the area as a “maintenance area” and the applicable SIP ensures that the ambient concentrations of criteria pollutants do not increase above the NAAQS again. With regard to aviation-related Federal actions planned to occur in a nonattainment or maintenance area, the proposed impacts to air quality must conform to the conditions of the applicable SIP. The EPA does not currently list Washington County as an area of nonattainment or maintenance for NAAQS.

EPA air quality monitoring occurs in the region in Washington County. The Division of Environmental Quality (DEQ) also has an ambient air quality monitoring station in Springdale, Arkansas. These locations, criteria air pollutants, and most recent results are included in **Table 2**.



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**Table 2: EPA and DEQ Outdoor Air Quality Statistics Results**

Location			CO 1hr	O <sub>3</sub> 8hr	NO <sub>x</sub>	SO <sub>2</sub> (typ)	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )
Washington Co.*	2022	--	--	0.067	--	--	15	8.1
Springdale, AR**	2021	--	--	0.060	--	1,006	36.7***	7.7

\*Most recent monitoring information provided by EPA (EPA Outdoor air quality statistics report for Washington County, Arkansas). \*\*From DEQ Ambient Air Monitoring Network, SLAMS report average of 2019-2021 data.

\*\*\*3-year average.

Meteorological conditions and trends in Washington County indicate that annual rainfall has increased over 11.4 inches between 1900 and 2023 with an average of 47.3 inches. Average temperatures in the same span of years indicate an increase of 2.0° Fahrenheit (F) with average temperature of 57.5°F (USA FACTS, 2023). Topographically, the study area is relatively flat and slightly sloping to the southeast. The land around the airport has development to the west and rolling hills, pastures, and floodplains to the south and east. These factors would not significantly influence the dispersal of emissions in the study area.

#### 4.4.2 Environmental Consequences

##### No Action Alternative

The No Action Alternative would not directly or indirectly impact air quality as there would be no change in the amount of aircraft activity, runway use patterns, taxi times, or vehicles accessing the airport. Since the No Action Alternative does not involve construction activities, no additional impacts to air quality would be expected to occur.

##### Proposed Action

- Direct Impacts

Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for air quality. A significant impact would occur if the Proposed Action would cause pollutant concentrations to exceed one or more of the NAAQS or if it were to increase the frequency or severity of any such existing violations. The Proposed Action slightly alters aircraft taxi times and does not affect future aircraft activity, changes in runway use patterns, or operational effects from ground access vehicles; therefore, no aircraft or surface transportation emissions are expected to rise to the level of significance. Temporary increases in emissions resulting from construction activities may occur for a limited period of time at the project site and in the immediately adjacent areas. Potential emissions from commercial and construction vehicles were calculated for the Proposed Action using proposed construction years, activities, and equipment. Results are provided in **Table 3**. The most common air pollutants generated from construction activities are CO, volatile organic

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compounds (VOCs), NO<sub>x</sub>, and particulate matter with a diameter of less than 10 microns (PM<sub>10</sub>). Construction air emissions are well below NAAQS de minimis thresholds.

**Table 3: Proposed Action Construction Air Emissions**

Year	Emission Source	Tons per Year					
		CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2025	Non-Road	0.62	0.43	1.41	0.01	0.07	0.06
2025	On-Road	0.28	0.01	0.10	0.00	0.00	0.00
2025	Fugitive	0.00	0.00	0.00	0.00	0.11	0.01
<b>2025</b>	<b>TOTAL</b>	<b>0.90</b>	<b>0.44</b>	<b>1.51</b>	<b>0.01</b>	<b>0.18</b>	<b>0.07</b>

- Indirect Impacts

Indirect effects on air quality on and around the airport are anticipated to be based on projected growth in the region and are associated with construction. A review of the before overall air quality data that is continually monitored by the DEQ was conducted and the closest ambient air quality measurement station for any of the criteria air pollutants is in Washington County, Arkansas for Ozone, PM 2.5, and PM 10.

- Mitigation and Best Management Practices (BMPs)

Air quality effects resulting from the implementation of the Proposed Action or No Action Alternative are anticipated to be below threshold levels of significance. No mitigation measures are proposed because air quality thresholds are not anticipated to be exceeded due to construction. One BMP that will be implemented includes wetting of disturbed areas to control dust erosion that could contribute to air quality in the immediate vicinity of the project.

## **4.5 Biological Resources**

### **4.5.1 Affected Environment**

The study area contains a routinely mowed and maintained field area with poorly drained soils containing a mixture of upland and wetland herbaceous grasses and forbs. One intermittent and channelized ditch is located within the study area. Overall, the ground disturbance study area provides limited biotic resources.

#### **Fish**

One intermittent and channelized ditch was identified in the study area and was observed to contain mosquito fish (*Gambusia affinis*) and other aquatic macroinvertebrates.

#### **Wildlife**

The presence of wildlife within the security fence is likely diminished by the limited, monocultural and routinely manicured nature within the Proposed Action area presenting a lack of available, suitable habitat for many terrestrial species. White-tailed deer (*Odocoileus virginiana*) have been observed in the area on the airport. Wildlife which could be expected in the area include small

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mammals, birds, reptiles, amphibians, and terrestrial invertebrates. The approximate 36-acre study area consists of an estimated 13.44 acres of herbaceous wetland and 823 linear feet (0.09 acre) of a maintained drainage ditch. Refer to **Figure 5** for an overview of the aquatic habitats mapped within the study area.

The indirect study area for assessing the affected environment for wildlife species considers lighting effects that reach farther out from the airport. Available wildlife habitat around the airport is fragmented to the west and a combination of forested and grassland habitat to the south and east, with Ward Slough, a perennial stream, located to the south of the study area.

### **Plants**

The study area contains predominantly herbaceous vegetation. Dominant upland vegetation consisted of sedges (*Carex* species), common ragweed (*Ambrosia artemisiifolia*), plantain (*Plantago lanceolata*), Virginia buttonweed (*Diodia virginiana*), Broomsedge (*Andropogon virginicus*), fescue (*Schedonorus arundinaceus*), Bermudagrass (*Cynodon dactylon*), and bristlegass (*Setaria pumila*). Dominant wetland vegetation observed included sedges (*Carex* species), soft rush (*Juncus effusus*), panicum species (*Dichanthelium acuminatum*), and bushy bluestem (*Andropogon hirsutior* var. *hirsutior*).

The Arkansas Natural Heritage Commission (ANHC) was contacted regarding the occurrence of rare plants, outstanding natural communities, and other elements of special concern. ANHC indicated no records at the present time within their databases.

### **Federal and State Listed Species**

The United States Department of the Interior, Fish and Wildlife Service (USFWS), Arkansas Ecological Services Field Office was consulted early during the development of this document. Agency responses are located in **Appendix B**. The USFWS Information for Planning and Consultation (IPaC) on-line tool was used to identify potential habitat for eight federally listed endangered and threatened species, one proposed threatened species, and one candidate species that may occur in or pass through the study area and are listed in **Table 4**. No critical habitats were identified within or near the study area. The study area for Biological Resources is the study area as shown in **Figure 5**, which also identifies aquatic habitats.

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**Table 4: Federally Listed Species**

Species*	Habitat Requirements	Habitat Present Within Ground Disturbance Study Area	Effects Determination
Northern Long-eared Bat** ( <i>Myotis septentrionalis</i> ) Endangered	In winter, Northern Long-eared bats use caves, mine portals, abandoned tunnels, protected sites along cliff lines and similar situations that afford protection from cold. They are easily overlooked and often wedge themselves back into wall cracks.	No suitable habitat is present within the study area. The project will have a "no effect" determination on the NLEB.	No effect
Indiana Bat** ( <i>Myotis sodalis</i> ) Endangered	The Indiana bat hibernates in cool caves and mines in the winter and wooded areas in the spring and summer. During summer, colonies are found beneath slabs of exfoliated bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations.	No suitable habitat is present within the study area. The project will have a "no effect" determination on the Indiana bat.	Not likely to adversely affect
Gray Bat** ( <i>Myotis grisescens</i> ) Endangered	The gray bat occurs in limestone karst areas and primarily uses caves throughout the year, although they move from one cave to another seasonally. Smaller colonies also occasionally roost under bridge structures.	No caves, mines, tunnels, cliffs, or trees are within or adjacent to the study area.	Not likely to adversely affect
Ozark Big-eared Bat** ( <i>Corynorhinus townsendii ingens</i> ) Endangered	The Ozark big-eared bat inhabits caves year-round, typically located in oak-hickory hardwood forests.	No known caves or forested areas are located within the study area.	Not likely to adversely affect
Eastern Black Rail ( <i>Laterallus jamaicensis ssp. Jamaicensis</i> ) Threatened	Eastern black rail habitat can be tidally or non-tidally influenced, and range in salinity from salt to brackish to fresh. Tidal height and volume vary greatly between the Atlantic and Gulf coasts and therefore contribute to differences in salt marsh cover plants in the bird's habitat.	The on-site emergent wetlands are routinely mowed and therefore do not contain suitably dense vegetative cover within the study area. The Eastern black rail is likely a vagrant in Arkansas. The project will not likely adversely affect the eastern black rail.	Not likely to adversely affect
Piping Plover ( <i>Charadrius melodus</i> ) Threatened	Migratory stopover habitat includes sparsely vegetated sandy or gravelly shorelines and islands associated with the major river systems.	No sandbars, salt flats or mudflats are located within or adjacent to the study area. The project will not likely adversely affect the piping plover.	Not likely to adversely affect
Alligator Snapping Turtle ( <i>Macrochelys temminckii</i> ) Proposed Threatened	Alligator snapping turtles inhabit medium to large slow-moving rivers or associated lakes, sloughs, or oxbows, and occur in high gradient clear streams. They will sometimes in habitat tributaries or ponds with a nexus to forementioned rivers.	No medium to large slow-moving rivers or associated aquatic resources are in or adjacent to the study area. Not likely to jeopardize the continued existence.	Not likely to jeopardize the continued existence of the species
Red Knot ( <i>Calidris canutus rufa</i> ) Threatened	Breeds on tundra; Migratory stopover habitat include mudflats on reservoirs, tidal flats, shores and beaches of reservoirs and coastal areas.	No mudflats or drawn down lakes are located within or adjacent to the study area. The project will not likely affect the red knot.	Not likely to adversely affect

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Species*	Habitat Requirements	Habitat Present Within Ground Disturbance Study Area	Effects Determination
Missouri Bladderpod ( <i>Physaria filiformis</i> ) Threatened	Missouri bladderpods are usually found in open limestone glades, barrens, and outcrops within unglaciated prairie areas. Glades are naturally dry, treeless areas with shallow, loose soil and areas of exposed rock. They are occasionally in dolomitic glades and are often associated with grazed pastures. Cedar invasion of glade sites is common. Sometimes the bladderpod is found on highway right-of-way and pastures where mowing and grazing have kept the area open. Occasionally it is found in open rocky woods.	No dry limestone or dolomitic glades or barrens occur within the study area.	No effect
Monarch Butterfly ( <i>Danaus plexippus</i> ) Candidate	Monarch butterflies require the presence of milkweed ( <i>Asclepias</i> sp.), flowering or potentially flowering nectar plants (defined as forbs that can provide nectar for monarchs at some point in the growing season), and additional native habitat such as meadows, prairies, and grasslands.	Potentially suitable habitat (flowering nectar plants) is possible within the study area, but marginal due to routine mowing. No milkweed species were observed within the study area.	Not likely to jeopardize the continued existence of the species

\*USFWS IPaC Official Species List, October, 2023. \*\*Also identified by ANHC as State Endangered.

The ANHC was contacted to identify the location of any known records for state species of concern within their Natural Diversity Database. Currently there are no state laws that protect state-listed species in Arkansas. Only animal species identified as State Endangered are provided protection under the Arkansas Game and Fish Commission regulations (AGFC) *Regulation P1.01 Endangered Species List – Animals*, as adopted under Amendment 35 of the Constitution of the State of Arkansas. State listed plant species currently do not have the same protecting regulations. ANHC indicated no records at the present time within their databases but did note that the West Fork of the White River, which the site drains into, is known to support species of conservation concern. Many state-listed species have a status of “inventory element” that indicates the ANHC is conducting active inventory work on the species. Detailed habitat was described in **Table 5** for the two state threatened and eleven state endangered species within Washington County. Detailed habitat was not described for species with inventory element status. Coordination with ANHC is provided in **Appendix B** and species lists are provided in **Appendix C**.

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**Table 5: State Listed Species**

Species*	Habitat Requirements	Habitat Present Within Ground Disturbance Study Area
Benton County Cave Crayfish ( <i>Cambaras aculabrum</i> ) State Endangered	The Benton County cave crayfish occurs in clean cave springs, near walls of pools, or in stream edges in chert/limestone cave streams.	No suitable habitat is present within the study area.
Neosho Mucket ( <i>Lampsilis rafinesqueana</i> ) State Endangered	The Neosho Mucket is associated with shallow riffles and runs composed of gravel substrate and moderate to swift currents.	No suitable habitat is present within the study area.
Rabbitsfoot ( <i>Theliderma cylindrica</i> ) State Endangered	Rabbitsfoot generally inhabit small to medium sized streams and some larger rivers. It occurs in shallow water areas along the bank and in shoals with reduced water velocity. Individuals have also been found in deep water runs (9-12 ft.). Bottom substrates generally include gravel and sand, but they have been found in riprap as well.	No suitable habitat is present within the study area.
Ozark Cavefish ( <i>Troglichthys rosae</i> ) State Endangered	The Ozark cavefish occurs in dark cave waters, primarily clear upwelling streams with chert or rubble substrate, and occasionally in pools over silt and sand. They have also been found in wells, springs, and sinkholes.	No suitable habitat is present within the study area.
American Burying Beetle ( <i>Nicrophorus americanus</i> ) State Endangered	Utilizes undisturbed, mature oak-hickory forests with substantial litter layers and deep, loose soils, grasslands or bottomland forests. Carrion feeder.	The study area contains potentially suitable habitat; however, the vast majority of the study area is within a floodplain and not considered suitable habitat.
Little Brown Bat ( <i>Myotis lucifigus</i> ) State Endangered	The Little Brown Bat hibernates in caves and mines in the winter. They can be found in trees, artificial structures, under rocks, and piles of wood in the summer. Foraging occurs over streams and other bodies of water and along margins of lakes.	No suitable habitat is present within the study area.
Opaque prairie sedge ( <i>Carex opaca</i> ) State Endangered	Low areas of prairies, roadside ditches, and poorly drained sites.	Approximately 7.61 acres of emergent wetland habitat is located within the study area.
Open-ground Whitlow-grass ( <i>Draba aprica</i> ) State Threatened	Occurs in dolomite areas within the Ozarks and on sandstone sites. Preference is for open areas not too moist with some shade.	No suitable habitat is present within the study area.
Royal catchfly ( <i>Silene regia</i> ) State Threatened	The Royal Catchfly is found in prairies, savannas, open woods, and barrens, typically on well-drained rocky soils.	No suitable habitat is present within the study area.

\*State listed species in Washington County. Arkansas Natural Heritage Commission, November 2023.

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### **4.5.2 Environmental Consequences**

#### **No Action Alternative**

The No Action Alternative would not directly or indirectly impact fish, wildlife, or plant species within the study area.

#### **Proposed Action**

- **Direct Impacts**

Direct impacts to approximately 7.9 acres of herbaceous vegetation will decrease available habitat for bird, reptile, and mammal species.

Informal Section 7 consultation was completed for these species on December 22, 2022. The Proposed Action would have a no effect determination for the Northern Long-eared bat and Missouri bladderpod, and a not likely to adversely affect determination for the Gray bat, Indiana bat, Ozark Big-eared bat, Eastern Black Rail, Piping Plover, and the Red Knot. USFWS concurred with these determinations, and therefore no further consultation is required. The Proposed Action would not jeopardize the continued existence of the Alligator Snapping Turtle or Monarch Butterfly. Refer to **Appendix B** for USFWS coordination and **Appendix C** for a list of federally listed species.

- **Indirect Impacts**

No indirect impacts are anticipated concerning federally or state listed threatened and endangered species. The Proposed Action would include new taxiway lighting; however, the new lighting is low to the ground and would not introduce potential light emissions within suitable summer roosting bat habitat or foraging areas.

- **Mitigation and BMPs**

Best Management Practices (BMPs) will be installed prior to construction and maintained in accordance with the Airport's Industrial Stormwater Pollution Prevention Plan (SWPPP) per National Pollutant Discharge Elimination System (NPDES) regulations, and in compliance with the anticipated Section 404, 401, and 402 permits. A construction SWPPP will be required prior to construction. No wildlife-specific mitigation is proposed.

### **4.6 Climate**

Climate is addressed in this separate section of the EA per Order 1050.1F and Desk Reference. According to FAA guidance, the EPA data indicates that the aviation industry contributes 4.1% of the world's greenhouse gas (GHG) emissions. The Council on Environmental Quality (CEQ) developed guidance on reporting GHG emissions and NEPA guidance. However, FAA has not identified significance thresholds. The U.S. Aviation Climate Goal (United States Aviation Climate Action Plan, 2021) has established a goal of achieving net-zero GHG emissions by 2050. These GHGs include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Emissions primarily result from anthropogenic sources predominantly from



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the combustion of fossil fuels. Energy consumption also contributes to GHG production. Per guidance provided in EO 13990, the depth of the GHG analysis is proportional to the project.

**4.6.1 Affected Environment**

The Proposed Action would consist of adding approximately 1,800 linear feet of taxiway. No changes in aircraft, or changes in runway use are expected to occur that would be anticipated to influence climate impacts from ground vehicles or aircraft. The Proposed Action would only slightly alter taxi times for those aircraft utilizing the new Taxiway E extension.

The study area for evaluating GHG is considered the greater Northwest Arkansas area. In accordance with the CAA and EO 13514 and EO 13990, construction air quality emissions were determined for the Proposed Action. However, no specific GHG data is available for the region for providing a baseline for comparison beyond data provided in **Table 2**.

**4.6.2 Environmental Consequences**

**No Action Alternative**

Since the No Action Alternative does not involve construction activities, no Climate impacts would be expected to occur.

**Proposed Action**

- **Direct Impacts**

According to Exhibit 4-1 of FAA Order 1050.1F, the FAA has not established a significance threshold for Climate. Based on only a temporary influence on GHGs during construction, no significant environmental impacts are expected concerning climate. The proposed construction and development activities are expected to include only a slight temporary increase in GHG emissions; however, these activities would be considered negligible compared to the annual U.S. emissions of GHG. For example, the Proposed Action's equivalent CO<sub>2</sub> production would be comparable, in terms of gallons of gasoline consumed, to 101 gallons of gasoline used by passenger vehicles. As such, emissions of GHGs would not be expected to have a significant impact on global climate change. Additionally, climate change is not anticipated to have a significant impact on the Proposed Action as a result of construction being compliant with current design requirements. The Proposed Action is not expected to increase issues related to flooding, erosion, or temperature increase.

- **Indirect Impacts**

As there are no significant direct environmental impacts expected concerning climate, indirect impacts are not anticipated.



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- Mitigation and BMPs

No mitigation or BMPs are proposed as no direct or indirect climate impacts are anticipated.

**4.7 Coastal Resources**

The project is not located in or near coastal resources. Therefore, no coastal resources will be impacted by the Proposed Action or the No Action Alternative.

**4.8 Department of Transportation, Section 4(f)**

There are no Section 4(f) properties within or near the direct study area. Therefore, no Section 4(f) resources will be impacted by the Proposed Action or the No Action Alternative.

**4.9 Farmlands**

The study area is located within the City of Fayetteville on lands that are committed to urban development and therefore, the Farmlands Protection Policy Act does not apply. This determination is based on a Natural Resources Conservation Service (NRCS) response received on January 24, 2023, for the Wildlife Fence Rehabilitation project at the airport that was in close proximity to the Proposed Action, and in which the Categorical Exclusion was approved by FAA on May 30, 2023. No farmland resources will be impacted by the Proposed Action or the No Action Alternative.

**4.10 Hazardous Materials, Solid Waste, and Pollution Prevention**

The study area was assessed for the presence of hazardous materials. The Proposed Action would not include generation of hazardous waste or the use of fuel storage tanks. Federal, state, and/or local statutes and regulations may apply.

The Resource Conservation and Recovery Act (RCRA) defines solid waste as any discarded material that meets specific regulatory requirements and can include items such as refuse, scrap metal, spent material, chemical-by-products, and sludge from industrial and municipal wastewater and water treatment plants. Brownfield sites are those that any reuse of may be hindered by the potential presence of hazardous substances.

**4.10.1 Affected Environment**

**Hazardous Materials and Solid Waste**

The Arkansas Division of Environmental Quality's EnviroView tool and the Environmental Protection Agency's NEPAAssist tool was used to identify the location of any Superfund sites, hazardous waste generator facilities, or solid waste sites within or near the study area. No sites related to hazardous wastes were identified within or adjacent to the study area.

Two RCRA sites and one Brownfields site are located within a one-mile radius of the study area. The two RCRA sites include the City of Greenland and the airport. The Brownfields site is located approximately 1.0 mile to the southwest of the study area and does not require further action according to the Arkansas Division of Environmental Quality.

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**Pollution Prevention**

The airport accomplishes pollution prevention through the implementation of a site-specific industrial SWPPP and individual NPDES permit. The airport's individual NPDES permit and SWPPP have identified several potential pollution sources, some of which occur near the study area.

**4.10.2 Environmental Consequences**

**No Action Alternative**

Under the No Action Alternative, no impacts to hazardous materials, solid waste or hazardous waste are expected to occur. The Airport would continue to operate its facilities in compliance with the same regulations associated with transport, storage, and use of existing hazardous materials as it does today. No increase in stormwater runoff or pollution would be expected by the No Action Alternative.

**Proposed Action**

- Direct Impacts

The Proposed Action would have no direct impacts to known hazardous materials, solid waste, or hazardous waste sites. No outfall modifications would occur as a result of the Proposed Action; however, improvements will be designed so that the post-development flow is less than or equal to the pre-development flow.

Short-term and temporary impacts may occur as a result of construction activities for the Proposed Action and include the temporary increase of petroleum fuels on-site that are utilized by construction equipment.

During construction grading activities associated with the Proposed Action, the primary potential pollutant is sediment and silt entering storm water and receiving waters at the airport. This could affect biotic communities on airport property or downstream of the airport.

- Indirect Impacts

Indirect impacts on the water quality of downstream environments are discussed in subsequent sections of this document.

- Mitigation and BMPs

Prior to initiating construction activities associated with the Proposed Action, the Airport will obtain stormwater permit coverage for construction activities from DEQ. General construction BMPs including silt fences, check dams, herbaceous buffers, and other controls as appropriate will be incorporated into construction plans to help prevent erosion and protect water quality in compliance with local erosion and sediment control regulations. Construction BMPs for the Proposed Action will include designating specific areas for construction equipment staging, maintenance, and fueling. These areas will be designed to provide appropriate secondary

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containment and other control measures to avoid and/or minimize potential, inadvertent, releases of fuels, oils, and other contaminants to stormwater, soil, and groundwater within the project area. Wastes associated with construction and operations at the site will be handled in accordance with the Solid and Hazardous Waste Rules and Regulations of the state. This includes all materials that would be classified as solid and/or hazardous wastes. Any temporary fuel tanks or the temporary storage of other regulated materials will comply with federal, state, and local regulations.

If any hazardous materials are encountered on the site during excavation, they will be appropriately identified and properly disposed of in accordance with applicable regulations.

As required by the CWA Section 402 NPDES permitting process, a SWPPP for the Proposed Action will be developed and implemented. General construction BMPs (including silt fences, check dams, and other controls as appropriate) will be incorporated into construction plans to help prevent erosion, protect water quality, and ultimately to minimize potential impacts to surface water resulting from storm water runoff. In addition, BMPs will require measures to prevent or minimize the potential release of contaminants into surface waters, provide swift response to accidental spills, and define acceptable on-site storage of fuel and lubricants.

#### **4.11 Historical, Architectural, Archeological, and Cultural Resources**

The National Historic Preservation Act of 1966 requires that an initial review be made to determine if any properties are on, or eligible for inclusion in, the National Register of Historic Places (NRHP). In accordance with 40 CFR 1507.2 and Section 106 of the National Historic Preservation Act, and FAA Order 1050.1E the FAA initiated consultation pursuant to Section 106 with the State Historic Preservation Officer (SHPO) and Tribes. SHPO was consulted on October 10, 2023, and Tribes were consulted through FAA in October 2023. Consultation letters and responses from commenting Tribes and SHPO are included in **Appendix C**. The Osage Nation, Cherokee Nation, and Shawnee Tribe were consulted. Although there is no significance threshold for this category, the FAA has identified a factor that includes if the Proposed Action would result in a finding of Adverse Effect through the Section 106 process.

##### ***4.11.1 Affected Environment***

The Project Area lies within the Lower Boston Mountains subdivision of the Boston Mountains ecoregion (EPA, 2014). Historically, upland Ultisol soils formed under oak, hickory, and pine forests. Today, these forests still persist with oaks and hickories in the upland areas, with shortleaf pines growing on drier slopes.

The study area also serves as the Area of Potential Effect (APE) and contains slightly undulating level and low areas that contain emergent wetlands.

A review of the Arkansas Historic Preservation Program (AHPP) geographic information system National Register and Survey Database and the Automated Management of Archeological Site Data in Arkansas (AMASDA) database managed by the Arkansas Archeological Survey was conducted to identify the location of any historic properties, as defined by 36 CFR 800.16(l)(1),

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within or proximal to the Project Area. No historic sites were identified in close proximity; however, 25 previously recorded archaeological sites were identified within a one-mile radius of the APE.

**4.11.2 Environmental Consequences**

On September 18, 2023, AHPP indicated there are numerous archaeological sites located within the APE and one is proximal to the APE. As a result, the AHPP requested that a Cultural Resources Survey (CRS) be completed. A Phase I CRS was conducted for the direct APE where ground disturbance is proposed. No historic or archaeological properties were identified within the direct APE and indirect APE. The nearest cultural resources site identified, is located approximately 128 feet from the APE. This site was identified as 3WA1599 and does not meet the criteria for listing on the NRHP. Based on the results of the CRS, no further archaeological work was recommended. On October 23, 2023, SHPO concurred with the finding of no historic properties affected pursuant to 36 CFR 800.4 (d)(1).

**No Action Alternative**

The No Action Alternative would not impact any historic or archaeological resources.

**Proposed Action**

- Direct Impacts

The Proposed Action will have no direct impacts to historic or archaeological sites listed on or eligible for listing on the NRHP. Consultation with the SHPO concurred with the finding of no historic properties affected due to direct impacts. A response letter was received from SHPO, dated October 23, 2023 (**Appendix B**). Correspondence indicated 25 previously recorded archeological sites located within 1.0 mile the APE, but they will not be affected by this undertaking. No comments were received from Tribal Historic Preservation Officers (THPO) and Tribal contacts associated with the proposed project.

- Indirect Impacts

As there are no direct impacts associated with the Proposed Action, no indirect impacts are anticipated. The Proposed Action meets the criteria for a finding of No Historic Properties Affected as per 36 CFR 800.4 (d)(1). No additional cultural resources investigations are recommended for the proposed Project Area according to SHPO regarding the indirect APE.

- Mitigation and BMPs

If construction work uncovers buried archeological materials, work will be halted in the area of discovery and SHPO and the FAA Project Manager will be immediately notified.

**4.12 Land Use**

The direct study area is approximately 36 acres in size and is located entirely on airport-owned property that currently functions for aeronautical use. No changes in zoning or land use are planned within the direct study area.

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**4.13 Natural Resources and Energy**

This section provides an evaluation of the consumption of natural resources such as fuel, water, wood, asphalt, aggregate, and other construction material supplies as well as energy supply effects.

**4.13.1 Affected Environment**

Natural resources such as water, asphalt, and aggregate that would be utilized are located onsite and/or would be provided for the project from a clean authorized location. The study area is adjacent to electric utilities utilized by the taxiway lighting system, which will also be utilized in the Proposed Action.

**4.13.2 Environmental Consequences**

FAA Order 1050.1F Exhibit 4-1 shows that FAA has not established a significance threshold for this impact category. However, a factor to consider is if the action would have the potential to cause demand to exceed available or future supplies of these resources. The use of natural resources and energy consumption for the Proposed Action is not anticipated to exceed future supplies.

**No Action Alternative**

The No Action Alternative would not change the future supply of natural resources or energy demands at the airport.

**Proposed Action**

- Direct Impacts

No adverse effects or exceedances of local or regional natural resources and energy supplies are anticipated. As the Proposed Action would include minor extension of a taxiway and other proposed improvements do not require extensive energy demands, no substantial changes in energy requirements would result from the Proposed Action. Regardless, any additional energy uses are anticipated to be met by local energy suppliers. Petroleum fuel (for construction equipment) and consumable materials are not considered to be scarce and increased usage of these resources during construction would be met by current and/or future suppliers. Minor increases in fuel consumption associated with aircraft utilizing the extended taxiway are anticipated but not expected to adversely affect fuel suppliers.

- Indirect Impact

Indirect effects associated with the Proposed Action are also anticipated to be met by local energy and utility providers as the population of the region increases.

**4.14 Noise and Noise-Compatible Land Use**

A noise analysis is not deemed necessary because neither the Proposed Action or the No Action Alternative is expected to substantially alter existing noise levels or cause a change in operations

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**Taxiway E Extension**

or flight procedures. Additionally, the forecast does not exceed the threshold of 90,000 annual propeller operations, 700 annual jet operations, or 10 daily helicopter operations.

The Proposed Action will not result in any changes in aircraft operations, nighttime operations, runway use, or aircraft fleet mix during construction or after the project is completed. The airfield configuration will change to accommodate the extended taxiway but will not substantially alter aircraft use of the taxiway and therefore would not affect land uses around the airport. The Proposed Action would have no effect on surrounding land uses as it is located entirely on airport-owned property and is fully compatible with airport operations. Therefore, no noise or noise-compatible land use impacts will occur as a result of the Proposed Action or the No Action Alternative.

**4.15 Socioeconomics, Environmental Justice, and Children's Health and Safety Risks**

FAA Order 1050.1F, describes the socioeconomic impacts associated with relocation or other community disruption, transportation, planned development, and employment. This evaluation includes effects on Environmental Justice (EJ) and children's health and safety. As directed by Executive Order (EO) 12898, the demographic profile of the surrounding area is considered with regards to EJ concerns.

EO 13045, dated April 21, 1997, pertains to "Protection of Children for Environmental Health and Safety Risks". This mandate requires federal agencies to identify and assess environmental health and safety risks that may affect children. EO 13045 states that to the extent permitted by law and appropriate, each federal agency shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

**4.15.1 Affected Environment**

The study area used for the analysis of socioeconomics, EJ, and children's health and safety is considered the indirect study area as shown in **Figure 3**. There are no schools, daycares, parks, or children's health clinics within the indirect study area; therefore, no disproportionate risks to EJ populations and children would occur.

**4.16 Visual Effects**

Visual effects associated with the Proposed Action take into account light emissions and visual resources and character. From the desk reference the factors to consider are the extent the action would have the potential to:

- Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;
- Contrast with the visual resources and/or visual character in the study area; and
- Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.

## **Taxiway E Extension**

### **4.16.1 Light Emissions**

#### **4.16.1.1 Affected Environment**

The Proposed Action is located inside the airport's property boundary and over 0.25-mile from the nearest potentially sensitive receptor (an elementary school). The properties within the indirect study area include open airport property with some fragmented forested areas to the east and south. The airport is illuminated by lights from various sources on the airside and landside in compliance with FAA standards for security, apron flood lighting, obstruction clearance, and navigation lighting. According to FAA Order 1050.1F, Order 1050.1F Environmental Desk Reference, and Order 5050.4B, light emissions generated by the Proposed Action were evaluated. There are currently no special purpose laws or requirements for visual effects. Green, white, and red colored lights have been studied regarding bat species and how they respond. Some studies suggest that *Myotis* species, which occur in the area, are more sensitive to light emissions by making them more vulnerable to predators (Lara, et al. 2023).

#### **4.16.1.2 Environmental Consequences**

##### **No Action Alternative**

The No Action Alternative would not change the existing visual character or have any additional light emission impacts.

##### **Proposed Action**

- **Direct Impacts**

The Proposed Action would produce additional light emissions associated with taxiway edge lighting and markers. However, no direct impacts to sensitive receptors or wildlife are anticipated.

The overall setting of the airfield would not change drastically. Temporary and additional safety lighting during construction is anticipated and will comply with design plans as developed.

- **Indirect Impacts**

The Proposed Action light emissions are not anticipated to contribute substantially to the indirect nature of light emissions experienced surrounding the airport. The Proposed Action alone would not contribute to impacts to sensitive off-airport receptors, including wildlife species due to the already illuminated nature of the surrounding area.

- **Mitigation and BMPs**

Future lighting fixtures at the airport will comply with FAA standards in AC 150/5345-53 so as to not create adverse lighting conditions to aircraft and off-airport sensitive receptors. Proposed lighting and fixtures will be designed to current FAA and airport standards.



## **Taxiway E Extension**

### *4.16.2 Visual Resources and Character*

#### *4.16.2.1 Affected Environment*

According to FAA Order 1050.1F, Order 1050.1F Environmental Desk Reference, and Order 5050.4B, the visual character of the Proposed Action was evaluated. There are currently no special purpose laws or requirements for visual resources and character.

#### *4.16.2.2 Environmental Consequences*

##### **No Action Alternative**

The No Action Alternative would not change the existing visual character of the airport or surrounding properties.

##### **Proposed Action**

- Direct Impacts

The Proposed Action would not change the visual character of the direct study area and is compatible with the existing visual character of the airport.

- Indirect Impacts

The visual landscape as viewed looking toward the airport would not have a stark contrast to the visual character surrounding the airport.

- Mitigation and BMPs

As the Proposed Action is compatible with the visual character and resources within the study area, no mitigation is proposed.

## **4.17 Water Resources**

### *4.17.1 Affected Environment*

Water resources are surface waters and groundwater that are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. The study area was assessed for the presence of any wetlands, surface water resources, floodplains, and groundwater resources as these components function in concert as a single integrated system. Federal statutes or executive orders provide the framework to regulate potential impacts to surface water, groundwater, and wetlands. The following provides a list of statutes, regulations and executive orders established to protect these resources:

- EO 11990, Protection of Wetlands.
- EO 11988, Floodplain management.
- Fish and Wildlife Coordination Act (FWCA).
- Rivers and Harbors Act of 1899.



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**Taxiway E Extension**

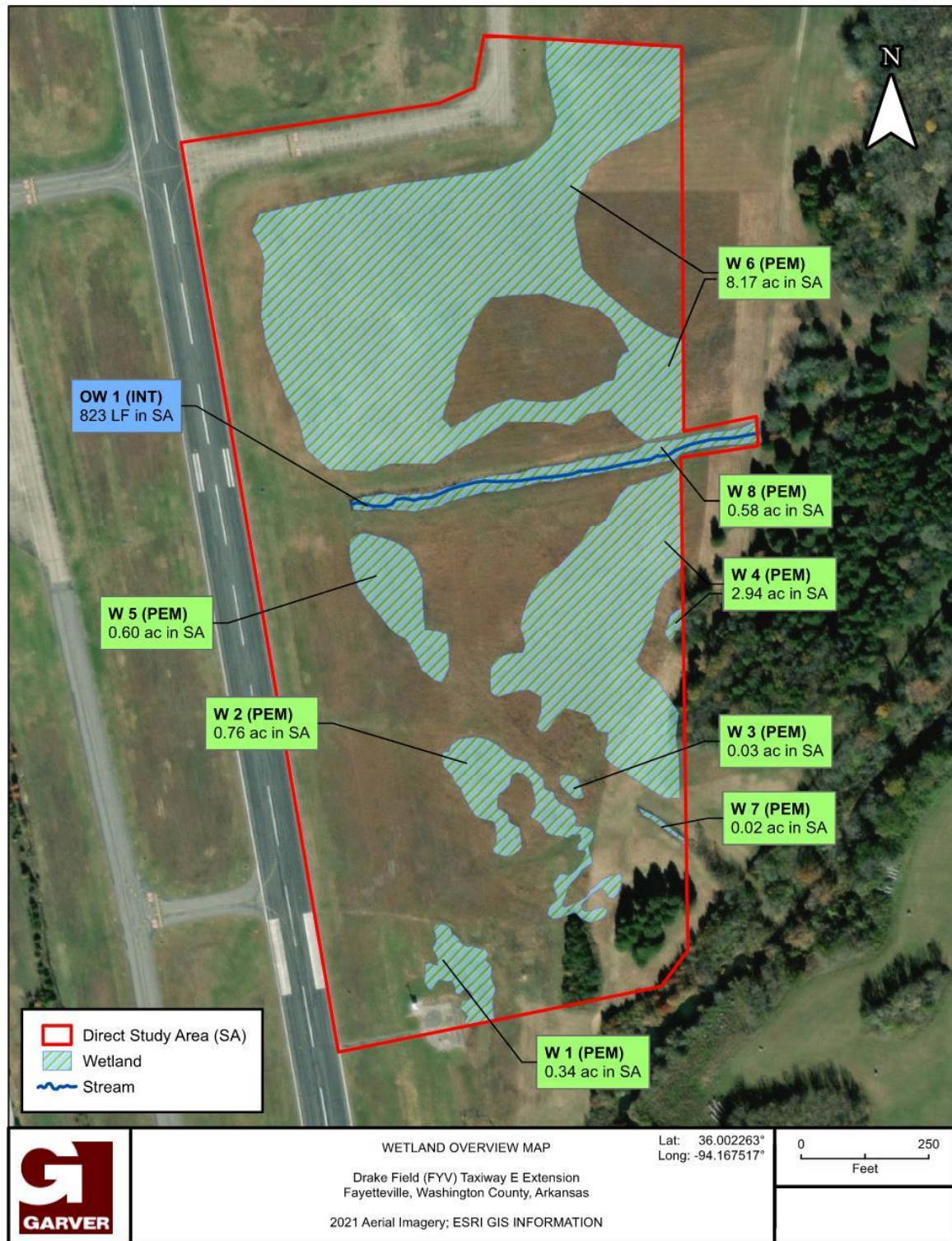
- Department of Transportation (DOT) Order 5620.2, Floodplain Management and Protection.
- National Flood Insurance Act.
- The Clean Water Act.
  - Section 401 of the Clean Water Act (CWA) requires that for any federally permitted project that may result in a discharge into water of the United States, a water quality certification be issued to ensure that the discharge complies with applicable water quality requirements.
  - Section 402 forms the National Pollutant Discharge Elimination System (NPDES), which regulates pollutant discharges, including stormwater, into waters of the United States. NPDES permits set specific discharge limits for point-source pollutants and outline special conditions and requirements for projects to reduce water quality impacts. Permits require that projects be designed to protect waters of the United States. Construction projects that will disturb more than one acre of land must comply with the requirements of the NPDES.
  - Section 404 regulates discharges of dredged or fill materials from construction activities into waters of the United States, including wetlands. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States.

These statutes prevent/minimize the loss of wetlands, control discharges and pollution sources, establish water quality standards, protect drinking water systems, and protect aquifers and other sensitive ecological areas. There are wetlands but no surface waters present within the study area.

**Wetlands**

A wetland delineation was completed for the study area and is located in **Appendix D**. Eight emergent wetlands were identified within the study area and shown on **Figure 5**. These wetlands contained hydric soils consisting of a depleted matrix. Hydrology indicators were identified by the presence of saturation, surface water, high-water table, poor hydrologic relief, and poorly drained soils. Vegetation was mowed and lacked natural diversity. Dominant vegetation observed included bushy bluestem (*Andropogon glomeratus* var. *hirsutior*), bristlegrass (*Setaria pumila*), sedge (*Carex* and *Cyperus* sp.), and soft rush (*Juncus effusus*). These wetlands exist as micro lows within the maintained airfield situated within the 100-year floodplain. A total of 13.44 acres of wetlands are considered jurisdictional by the U.S. Army Corps of Engineers (USACE) due to their surface water connection to Ward Slough through off-site wetlands. Ward Slough is a U.S. Geological Survey (USGS) mapped perennial stream located off-site to the south. USACE correspondence is located in **Appendix B**.

**Taxiway E Extension**



**Figure 5 – Wetlands Overview Map**

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**Taxiway E Extension**

**Surface Water**

Stormwater draining from the study area is conveyed to the southeast through a channelized intermittently flowing ditch (other waters (OW) 1), thence to Ward Slough, a tributary to the South Fork White River. An estimated 823 linear feet of OW1 occurs within the study area.

**Floodplains**

Approximately 7.8 acres of FEMA-mapped 100-year floodplains, 0.38 acre of FEMA-mapped 500-year floodplains, and 0.01 acre of floodway are present within the study area and associated with Ward Slough. **Figure 7** shows the floodplains overlaid with the Proposed Action.

Floodplain natural and beneficial values can include, but are not limited to, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality, maintenance, and groundwater recharge.

The City of Fayetteville participates in the National Flood Insurance Program (NFIP) for floodplain management and has a floodplain administrator. The NFIP establishes Flood Insurance Rate Maps (FIRM) and National Flood Hazard Layer (NFHL) for the use of Geographic Information System (GIS) for this area. The Proposed Action is located within the FIRM map panel 05143C0220F (effective 4/2/2008) according to the NFHL mapper.

**Groundwater**

The study area is underlain by Pitkin Limestone, Fayetteville Shale, and Batesville Sandstone. The Pitkin Limestone is approximately 100 feet thick, the Fayetteville Shale is interbedded sandstone and limestone that is approximately 200 feet thick, and the Batesville Sandstone contains interbedded shale and limestone and is approximately 200 feet thick (National Geologic Map Database, 2023). Depth to water table ranges from less than one foot to more than six feet (NRCS, Web Soil Survey). No public water supplies or sole source aquifers were identified in the study area. The study area was noted to exhibit a high-water table at the time of the wetland delineation.

**Wild and Scenic Rivers**

There are no wild and scenic rivers present in or near the direct study area; therefore, no impacts to these resources will occur as a result of the No Action Alternative or the Proposed Action.

**4.17.2 Environmental Consequences**

**No Action Alternative**

No impacts to wetlands, surface waters, downstream floodplains, or groundwater will occur as a result of the No Action Alternative.

## **Taxiway E Extension**

### **Proposed Action**

#### **Wetlands**

- Direct Impacts

The Proposed Action is anticipated to fill approximately 2.19 acres of emergent wetlands within the direct study area as identified in **Table 6** and shown on **Figure 6**. Potential impacts to water quality resulting from stormwater runoff during construction were also assessed. Temporary, short-term impacts to surface waters within the disturbed areas may occur from stormwater runoff during construction. These impacts, which may occur as a result of increased sedimentation and siltation resulting from land disturbance, may temporarily decrease water quality. However, these impacts are not anticipated to be significant as BMP measures and provisions and specifications of FAA Advisory Circular 150/5370-10F *Standards for Specifying Construction of Airports* will be implemented to avoid and/or minimize adverse construction activities. The appropriate Section 401 water quality certification shall be obtained in conjunction with the required Section 404 permit. No other construction-related impacts to wetlands are anticipated as a result of the Proposed Action.

**Table 6: Wetland Impacts Summary**

Feature No.	Cowardin*	Acreage within Study Area	Acreage Impacted
W-1	PEM1E	0.34	0
W-2		0.76	0.46
W-3		0.03	0
W-4		2.94	0.11
W-5		0.60	0.06
W-6		8.17	1.44
W-7		0.02	0
W-8		0.58	0.12
TOTALS:		13.44 acres	2.19 acres

\*Federal Geographic Data Committee's 2013 *Classification of Deepwater Habitats of the United States*.

#### **Surface Water**

- Direct Impacts

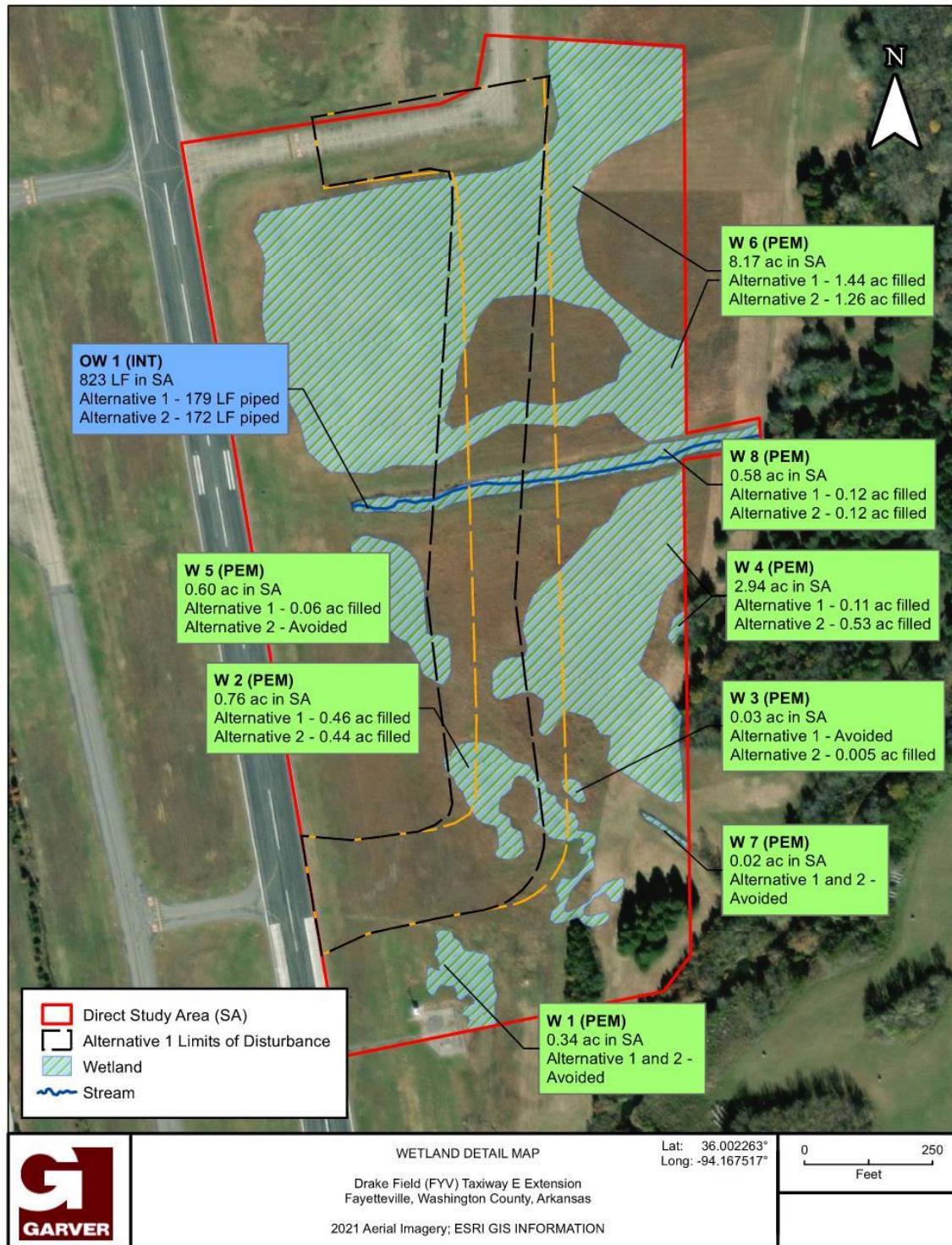
The Proposed Action would require extending an existing reinforced concrete pipe, which would impact the channelized drainage ditch. Approximately 212 linear feet (0.02 acre) of this feature would be impacted by placement of a drainage pipe.

- Indirect Impacts

Temporary indirect impacts could affect downstream portions of an unnamed tributary to West Fork White River if sediment-laden water resulting from erosion during grading activities traveled off-site during construction. The Proposed Action will not alter the airport's current drainage system or change outfall locations.



**Taxiway E Extension**



**Figure 6 – Wetland Impacts**

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## **Taxiway E Extension**

### **Floodplains**

- Direct Impacts

In accordance with EO 14030, the Proposed Action was evaluated using the Federal Flood Risk Management Standard (FFRMS). FFRMS guidance provides three methods for determining floodplain impacts: Climate Informed Science Approach, Freeboard Value Approach (FVA), and 500-year floodplain. The Proposed Action was evaluated using the FVA approach, which includes reviewing the base flood elevation (BFE) plus adding two feet of freeboard for non-critical actions. The Proposed Action is not considered a critical action by FAA. A significant floodplain encroachment would occur if any of the following construction or flood-related impacts are expected to occur:

- Considerable probability of loss of human life.
- Likely future damage that could be substantial in cost or extent and includes interruption of service on or loss of a vital transportation facility.
- Natural and beneficial floodplain values.

The Proposed Action is not anticipated to increase the probability of loss of human life. An updated Hydraulic Analysis for the existing conditions is currently being developed as of the date of this document. The Hydraulic Analysis will be updated with the Proposed Action during the detailed design stage of the project. The City of Fayetteville's floodplain administrator will review and evaluate floodplain impacts and the Hydraulic Analysis that will be prepared during design.

Floodplain encroachment regarding the Proposed Action was also evaluated to determine if any of the following factors would be impacted:

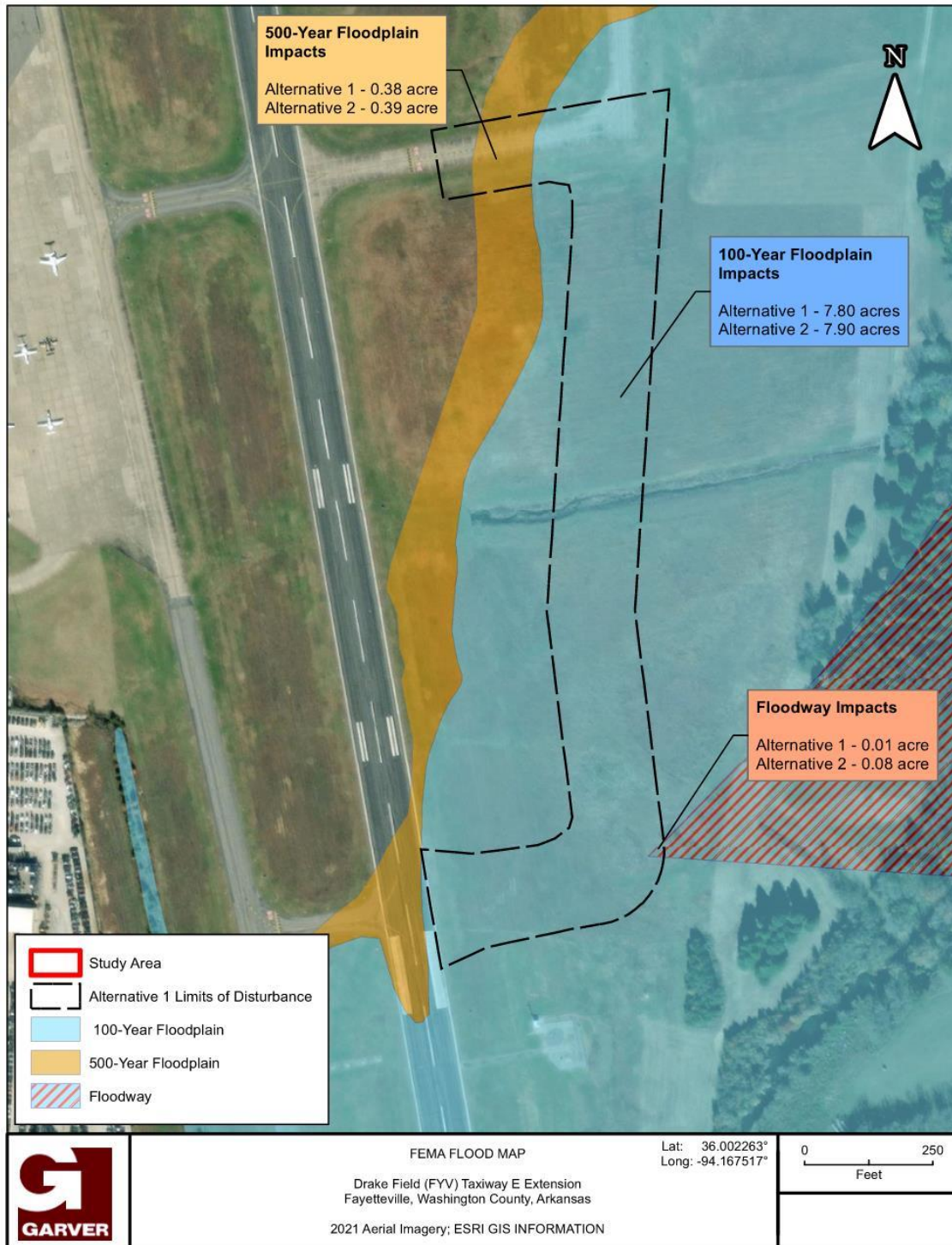
- Risk to or from the action.
- Does the action provide direct or indirect support for other development within the floodplain.

The Proposed Action would encroach on approximately 7.8 acres of FEMA-mapped 100-year floodplains, 0.38 acre of FEMA-mapped 500-year floodplains, and less than 0.01 acre of floodway as shown in **Figure 7**. The final grade of the proposed paved taxiway will match that of the existing elevation of the Taxiway B3 connector at Runway 16-34 (1237.5 feet above mean sea level (AMSL)) on the west end and the existing elevation of Taxiway E (1235.52 feet AMSL) on the east end. Direct impacts would occur from grading and paving activities within the floodplains for construction of the proposed taxiway. Required fill in the floodplains for the Proposed Action would reduce floodplain capacity/storage during significant rain events.

As portions of existing Taxiway E and portions of the runway are located within the existing mapped floodplains, no additional interruptions in service are anticipated as a result of the Proposed Action. Taxiway E and the runway would be unusable during flood events.



**Taxiway E Extension**



**Figure 7 – FEMA Floodplain Impacts**

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### **Taxiway E Extension**

The location of the Proposed Action would allow for future development on the east side of the airport. Any future development activities southeast of the current termination point of Taxiway E would be located within the 100-year and 500-year floodplains. Development of this area is not included in the airport's current 5-year capital improvement plan.

An opportunity for public review is required by EO 11988 and the Department of Transportation (DOT) Order 5650.2. Refer to **Section 5** for public involvement anticipated for the Proposed Action.

- Indirect Impacts

Potential indirect effects of the Proposed Action on the floodplain resulting from reductions in floodplain capacities may include effects on upstream and downstream flood flow volumes.

### **Groundwater**

- Direct Impacts

The Proposed Action is not expected to directly impact any public drinking water supplies, public water supply wells, or groundwater resources.

- Indirect Impacts

Indirect impacts to groundwater are not anticipated as no direct impacts to groundwater sources have been identified. The Proposed Action would have a negligible effect on recharge. Construction of the taxiway extension would not significantly reduce the amount of recharge area to the underlying aquifer. Decreases in surface water quality may not necessarily result in groundwater impact. Additionally, the implementation of local, state, and federal regulatory programs to protect water quality will help prevent and/or reduce potential impacts.

- Mitigation and BMPs

### **Surface Waters and Wetlands**

The Proposed Action will be subject to regulatory programs such as Sections 401 and 404 of the CWA which protect surface waters by requiring improvements to meet water quality standards. Additionally, as the Proposed Action cannot fully avoid alterations to waters, comprehensive mitigation to provide replacement of lost aquatic resource benefits will be required. To mitigate for wetland loss, FYV proposes to purchase wetland credits from a USACE-approved compensatory mitigation bank in order to satisfy mitigation requirements determined by the USACE during the permitting process. It is anticipated that all wetland impacts can be mitigated and therefore would not be considered significantly adverse.

Individual Section 401 water quality certification shall be obtained in conjunction with the anticipated Individual Section 404 permit.

Operational BMP measures and provisions and specifications of FAA AC 150/5370-10F *Standards for Specifying Construction of Airports* will be implemented to avoid and/or minimize adverse construction activities. Additionally, as required by the CWA Section 402 NPDES



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**Taxiway E Extension**

permitting process, a SWPPP for the Commission's Proposed Action will be developed and implemented. General construction BMPs (including silt fences, check dams, and other controls as appropriate) will be incorporated into construction plans to help prevent erosion, protect water quality, and ultimately to minimize potential impacts to surface water resulting from storm water runoff. In addition, BMPs will require measures to prevent or minimize the potential release of contaminants into surface waters, provide swift response to accidental spills, and define acceptable on-site storage of fuel and lubricants.

**Floodplains**

The final results of the Hydraulic Analysis will determine if the Proposed Action will cause a rise in the floodplain elevation. If a rise is determined, a Conditional Letter of Map Revision (CLOMR) or Letter of Map Revision (LOMR) will be coordinated with and obtained from the City of Fayetteville's floodplain administrator per City Code 168.10.U prior to construction. Overall, the project will be designed to minimize adverse impacts to the downstream floodplain's natural and beneficial values.

**5.0 Scoping and Public Involvement**

**5.1 Section Overview**

This section explains the steps taken to correspond with agencies, Tribes, and the public during the completion of this EA. A list of agencies and Tribes that were contacted is included in **Section 5.2** and the public notification process is provided in **Section 5.3**. In October 2023, scoping letters were sent to applicable local, state, and federal agencies and Tribes to assess the level of environmental consequences based on the purpose and need of the project.

**5.2 Agency Scoping**

The intent of the agency and Tribal coordination is to solicit input early in the process regarding potential environmental, cultural, and archeological resources which could be impacted by the Proposed Action. The below-listed agencies and Native American Tribes were consulted during the preparation of this EA. All agency coordination is provided in **Appendix C**.

**Agencies Consulted and Dates of Consultation:**

- Arkansas Historic Preservation Program (AHPP) – Responses received October 10 and October 23, 2023
- U.S. Army Corps of Engineers (USACE) – Initial response received October 18, 2023, Preliminary Jurisdictional Determination pending as of November 10, 2023
- U.S. Fish and Wildlife Service (USFWS) – Response received December 22, 2022
- Arkansas Natural Heritage Commission (ANHC) – Response received November 09, 2023
- City of Fayetteville Floodplain Administrator – Initial response received November 10, 2022.

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**Taxiway E Extension**

**Tribes Consulted** (Initial Tribal Consultation occurred in October, 2023):

- Cherokee Nation
- Osage Nation
- Shawnee Tribe

### **5.3 Environmental Assessment Public Notification and Distribution**

The Environmental Assessment was completed in February 2024 and was prepared for public review and comment prior to advertising a notice of opportunity to request a Public Hearing. On March 3, 2024, the Airport opened the public comment period by placing advertisements on their website (<https://www.fayetteville-ar.gov/4080/Airport>) and in the Northwest Arkansas Democrat-Gazette, a newspaper of general circulation throughout Fayetteville and Washington County, Arkansas. A copy of the advertisement and affidavit of publication are included in **Appendix E**. Hardcopies of the EA were made available for the public to review until April 2, 2024, at the Airport Terminal Building. Opportunities are provided to the public to respond to the EA via letter, email, website comment response, or by telephone.

No public comments were received during the public notification period and there were no requests for a public hearing.

### **6.0 Mitigation and Commitments**

- The airport will comply with all applicable federal, state, and local development regulations, Executive Orders, and permitting requirements.
- The airport will complete and maintain a construction Stormwater Pollution Prevention Plan throughout the duration of disturbance activities. BMPs such as silt fence, rolled fiber barriers, ditch checks, and other standard practices will be implemented according to the construction SWPPP and NPDES permit.
- Wetland mitigation is required for unavoidable impacts to 2.19 acre of emergent wetlands. Wetland credits will be coordinated and approved by USACE and will be purchased by FYV to compensate for these impacts through the Section 404 permit process.

### **7.0 Required Permits**

- A NPDES construction stormwater discharge permit.
- A Section 404 Individual Permit will be obtained.
- Individual Section 401 water quality certification will be obtained at the time the Section 404 permit is issued.

### **8.0 List of Preparers**

The individuals listed in the below tables assisted in the preparation of this EA. Resumes of each are provided in **Appendix F**.

## **Taxiway E Extension**

### **Garver, LLC**

Personnel	Degree	Years of Experience
Adam White	B.S. Civil Engineering	17
Kyle Bennett	M.S. Civil Engineering	19
Ryan Mountain	B.S. Fisheries and Wildlife Management	24
Colby Marshall	B.S. Biology	12

### **Flat Earth Archeology**

Personnel	Degree	Years of Experience
Chris Branam	A.B. D History Ph.D., M.A. Anthropology, B.A. Anthropology	24

## **9.0 References**

City of Fayetteville webpage: [Airport | Fayetteville, AR - Official Website \(fayetteville-ar.gov\)](https://www.fayetteville-ar.gov/).

Executive Order (EO) 11990, Protection of Wetlands. May 24, 1977. 42 FR 26961, 3 CFR, 1977 Comp., p. 121.

Environmental Protection Agency (EPA) Sole Source Aquifers. Webpage:  
<https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b>.

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FAA. 2020. FAA Advisory Circular 150/5200-33C, *Hazardous Wildlife Attractants on or Near Airports*. US Department of Transportation, Federal Aviation Administration.

FAA. 2020. FAA 1050.1F Desk Reference. US Department of Transportation, Federal Aviation Administration Office of Environment and Energy.

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***Taxiway E Extension***

Federal Register (FR) Vol. 86, No. 89, Tuesday, May 11, 2021, Rules and Regulations.

Hutto, R.S., and Hatzell, G.A., 2017, [\*Geologic Map of the Durham Quadrangle, Madison and Washington Counties, Arkansas\*](#): Arkansas Geological Survey, Digital Geologic Quadrangle Map DGM-AR-00285, scale 1:24,000.

Ulaszek, Eric. USDA, U.S. Forest Service. Plant of the Week web page. Royal Catchfly (*Silene regia*). Available online at: [https://www.fs.usda.gov/wildflowers/plant-of-the-week/silene\\_regia.shtml](https://www.fs.usda.gov/wildflowers/plant-of-the-week/silene_regia.shtml)

U.S. Census Bureau. 2021. Available online at <https://data.census.gov/cedsci/>.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2021. Web Soil Survey. Web. <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

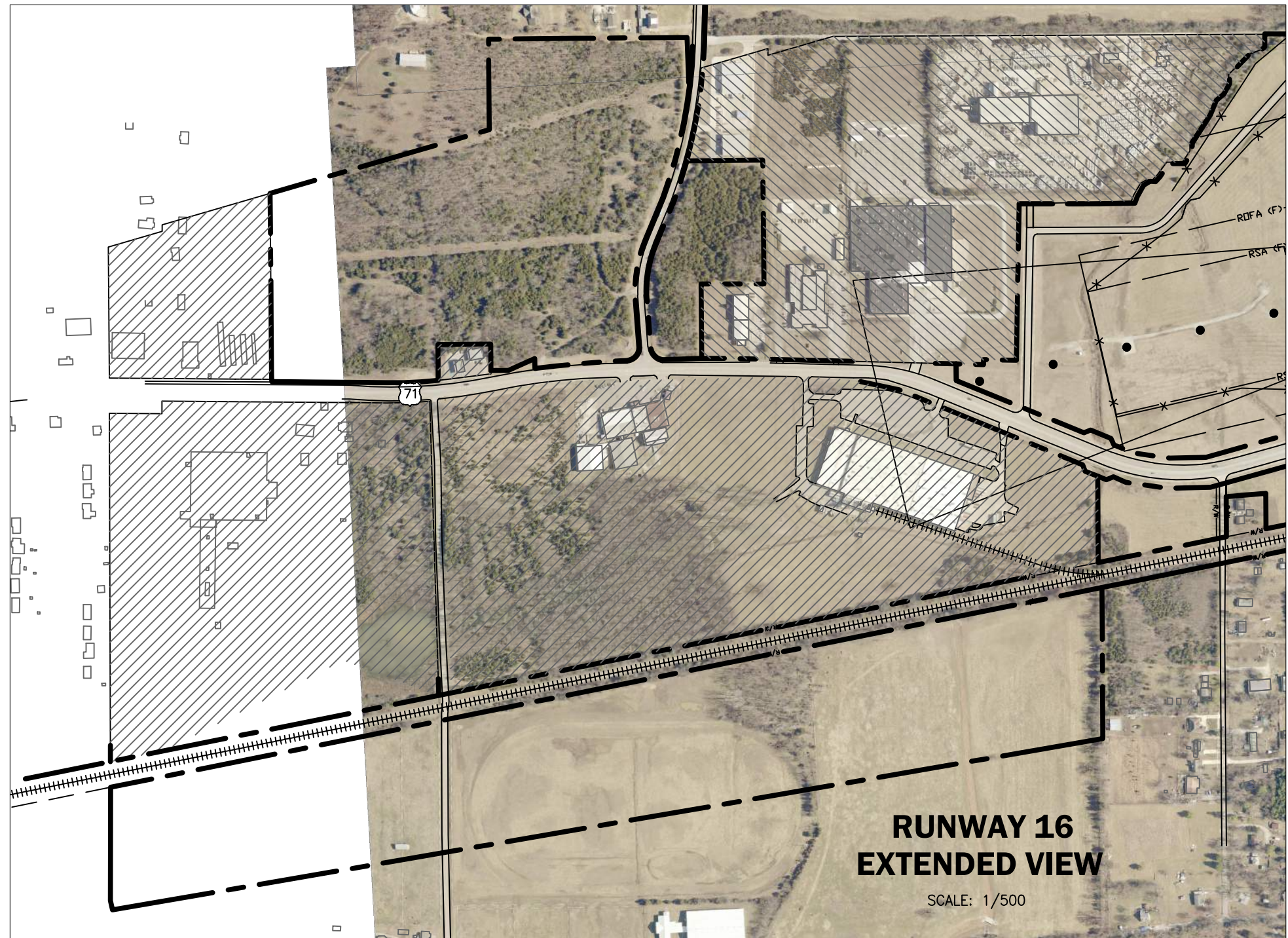
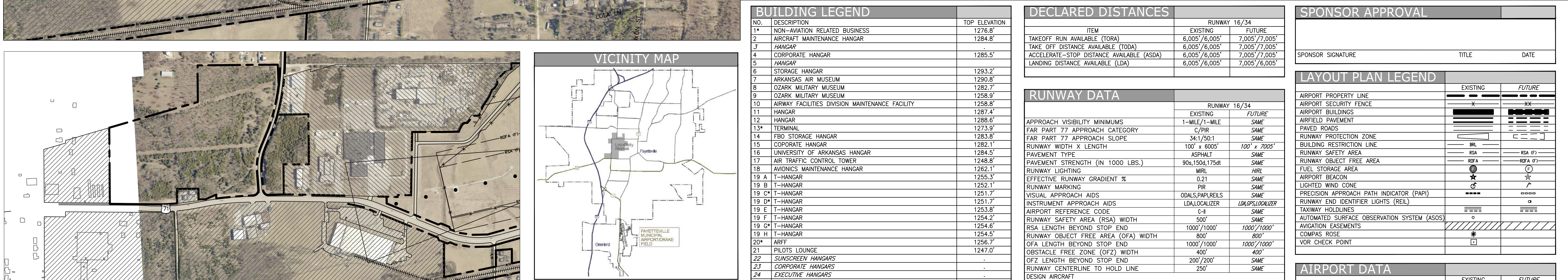
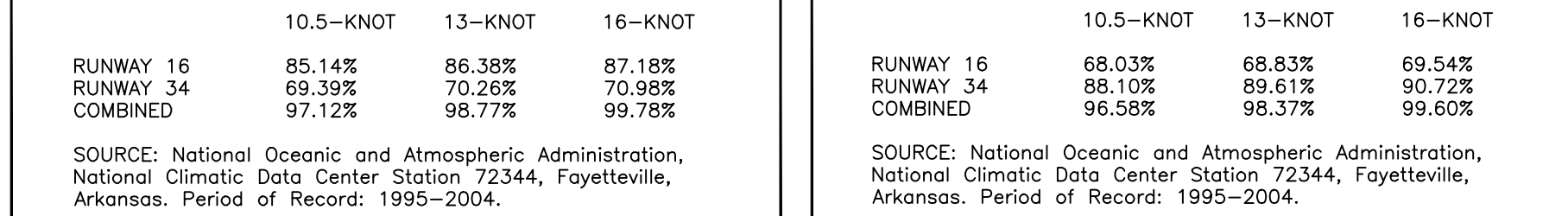
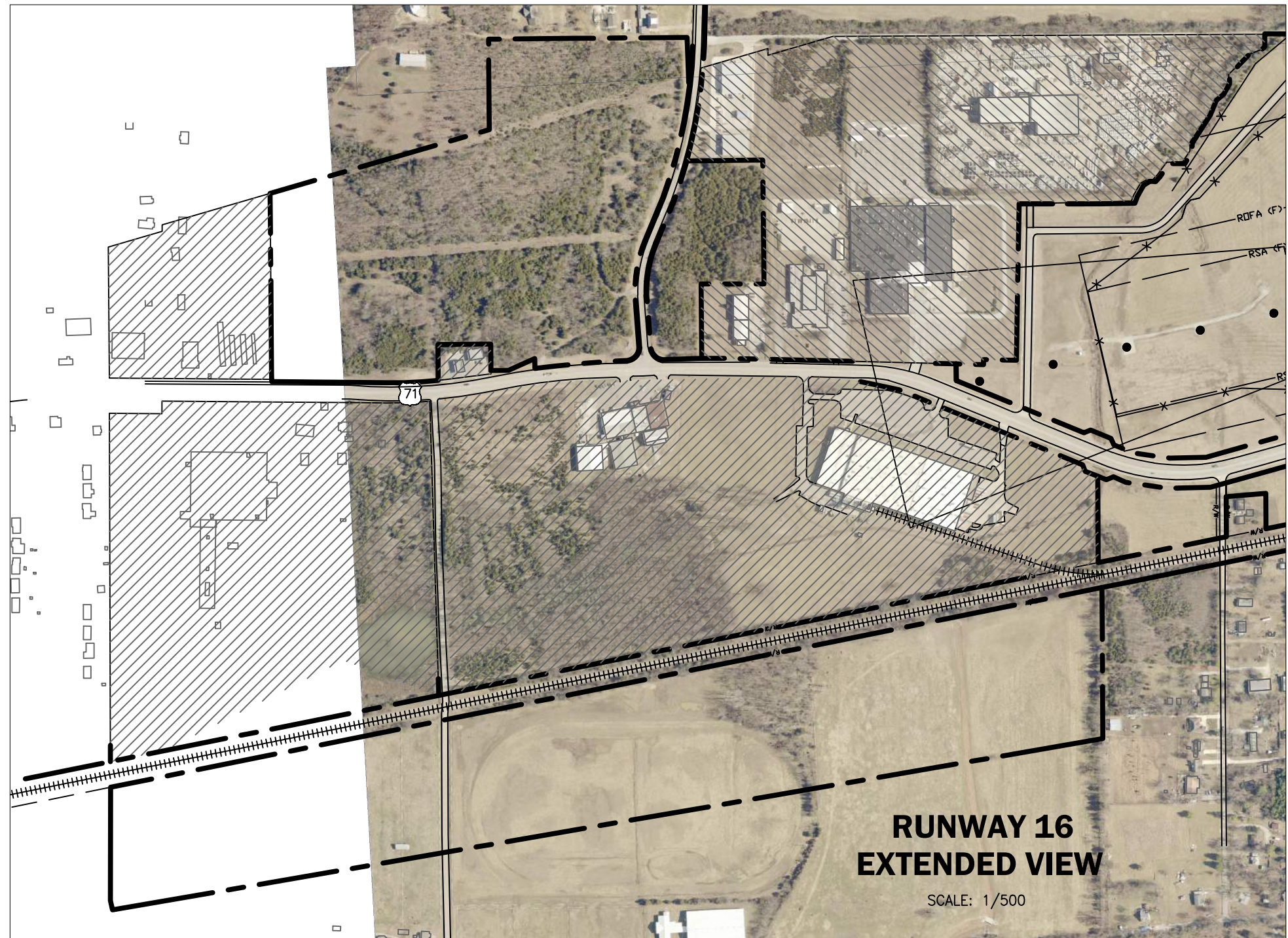
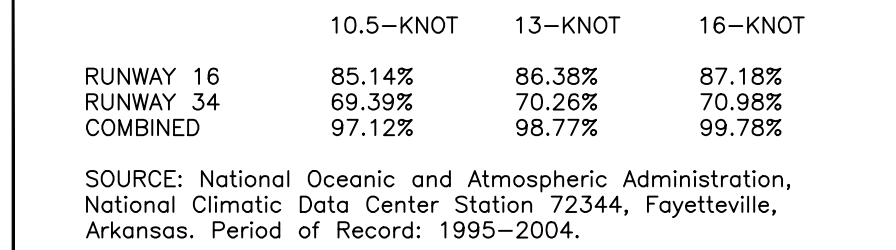
U.S. Geological Survey (USGS). ESRI. 7.5 minute, 1:24,000 scale Fayetteville, Arkansas. Topographic Quadrangle Map.

U.S. Geological Survey (USGS). ESRI. 7.5 minute, 1:24,000 scale West Fork, Arkansas. Topographic Quadrangle Map.

# APPENDIX A

## 2015 Airport Layout Drawing



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NOTES:			
1.	This drawing reflects planning standards specific to this airport and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.		
2.	ALP base information obtained from McClelland Consulting Engineers, April 2005.		
3.	Aerial obtained from Aerial Data Service, November 2005.		
4.	Horizontal coordinate is NAD 83, vertical data is NAVD 88. NOS survey dated December 2007.		
5.	Magnetic declination data obtained from NADC, April 8, 2011.		
6.	Bunding Restriction Line (BRL) based on future runway conditions and encompasses the Runway Protection Zones and the Runway Object Free Area (ROFA).		

AIRPORT DATA				
AIRPORT ELEVATION (AMSL) NOS 405 (NAVD 88)	EXISTING		FUTURE	
AIRPORT REFERENCE POINT (ARP) NOS 405 (NAVD 83)	1251.3'		SAME	
AIRPORT REFERENCE CODE	1AV N 35° 00' 15.35" E 10K W 89° 10' 12.22" S		1AV N 35° 00' 15.35" E 10K W 89° 10' 12.22" S	
NPIAS CATEGORY	C-II		SAME	
MEAN MAX. TEMPERATURE (HOTTEST MONTH)	GA		SAME	
TAXIWAY LIGHTING	89.3"		SAME	
TAXIWAY MARKING	MITL		SAME	
AIRPORT & TERMINAL NAVAIDS	CENTERLINE LDA,LOCALIZER		LDA,GPS,LOCALIZER	

REVISIONS		
NO.	DESCRIPTION	DATE
1	GENERAL REVISION	7/2011

REV.	DATE	DESCRIPTION	BY



# APPENDIX B

## Agency Coordination and Tribal Consultation



**DEPARTMENT OF THE ARMY**  
**LITTLE ROCK DISTRICT, CORPS OF ENGINEERS**  
**POST OFFICE BOX 867**  
**LITTLE ROCK, ARKANSAS 72203-0867**  
[www.swl.usace.army.mil/](http://www.swl.usace.army.mil/)

November 14, 2023

Regulatory Division

**FILE No. SWL 1995-12804**

Mr. Colby Marshall  
2049 E. Joyce Blvd  
Suite 400  
Fayetteville, AR 72703

Dear Mr. Marshall:

Please refer to your request dated October 4, 2023, on behalf of Jared Rabren, concerning a waters of the United States (WOTUS) determination of an approximately 25-acre subject property (Drake Field Airport Taxiway E extension), in section 4, T. 15 N., R. 30 W., Fayetteville, Washington County, Arkansas. In response to your informed, voluntary request, this letter provides a preliminary jurisdictional determination (PJD) that identifies aquatic resources that may be WOTUS on the property and the Department of the Army (DA) permit requirements pursuant to Section 404 of the Clean Water Act (33 U.S. Code 1344).

My review revealed that the property may contain areas that may be WOTUS. Approximately 13.44 acre of wetlands and 823 linear feet of stream were identified. The approximate location of these areas is shown on the enclosed map of the site.

This PJD is advisory in nature. If you wish to receive an approved jurisdictional determination (AJD) for the property, you must request one. In order to expedite the review, we suggest you provide our office with a delineation of all WOTUS within the property using Corps approved methodology. An AJD is generally valid for a 5-year period, incorporates administrative appeal rights, and specifically identifies the presence or absence, the location, and the extent of WOTUS on the property. Delineations done by consultants are not official until approved by the Corps of Engineers.

Please be advised that the discharge of dredged or fill material in WOTUS, requires a DA permit prior to beginning work in most situations. A permit is required pursuant to Section 404 of the Clean Water Act. The clearing of wetlands with mechanized equipment; landleveling; construction of ditches, dikes, and dams; placement of fill to raise the elevation of a site; and stabilization of banks are examples of activities that may require a permit. All of these activities typically involve the discharge of dredged or fill material in WOTUS.

Your cooperation in the Regulatory Program is appreciated. If you have any questions, please contact me at (501) 340-1377 and refer to No. **SWL 1995-12804**.



Sincerely,

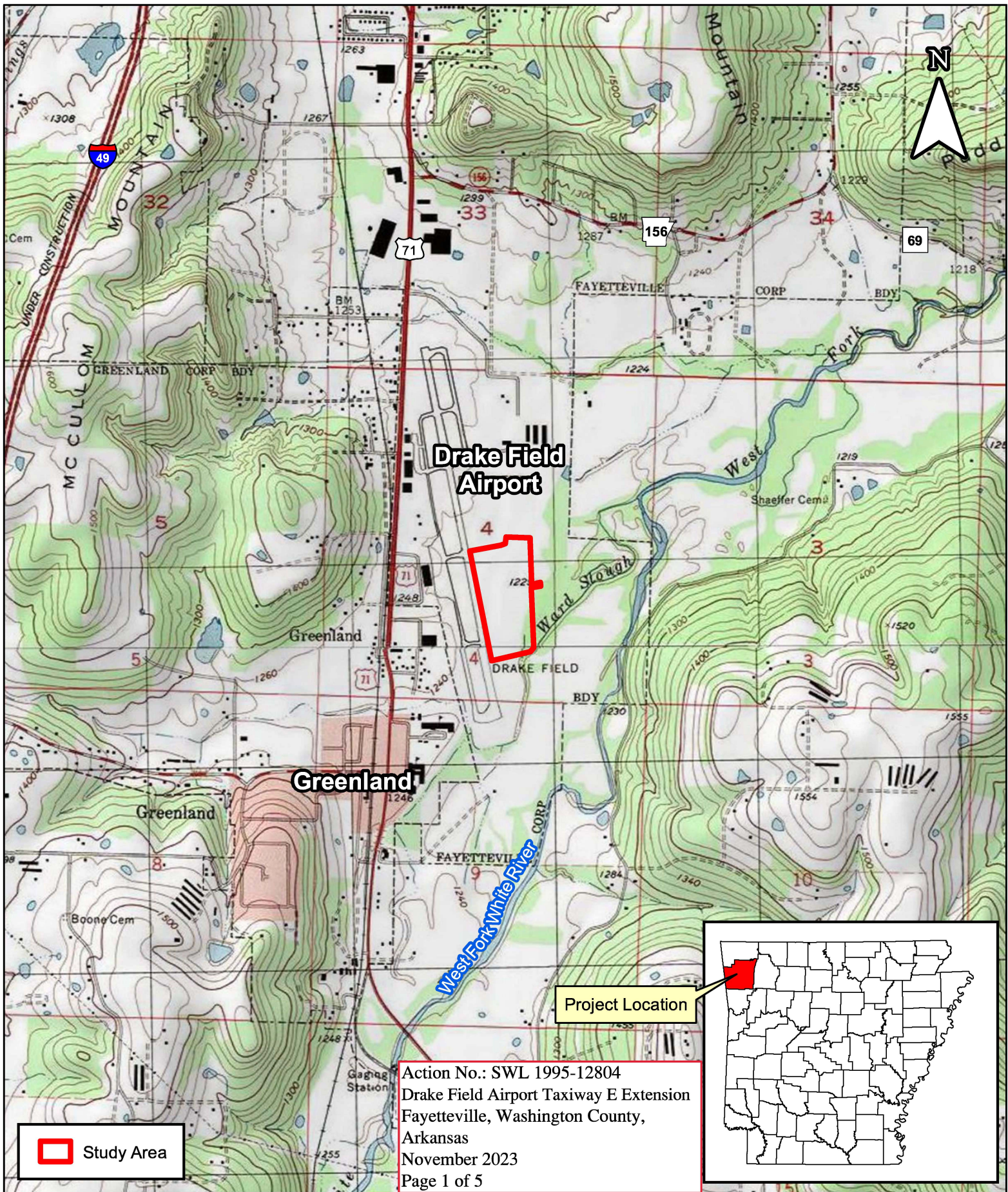
A handwritten signature in dark ink, appearing to read "John Glynn". The signature is fluid and cursive, with the first name "John" and last name "Glynn" clearly distinguishable.

John Glynn  
Regulatory Specialist

Enclosures

cc:  
Beaver Lake PO  
Ch, Regulatory Enf





# SITE LOCATION MAP

Drake Field (FYV) Taxiway E Extension  
 Fayetteville, Washington County, Arkansas

USGS Topographic Image; ESRI GIS INFORMATION

Lat: 36.002263°  
 Long: -94.167517°

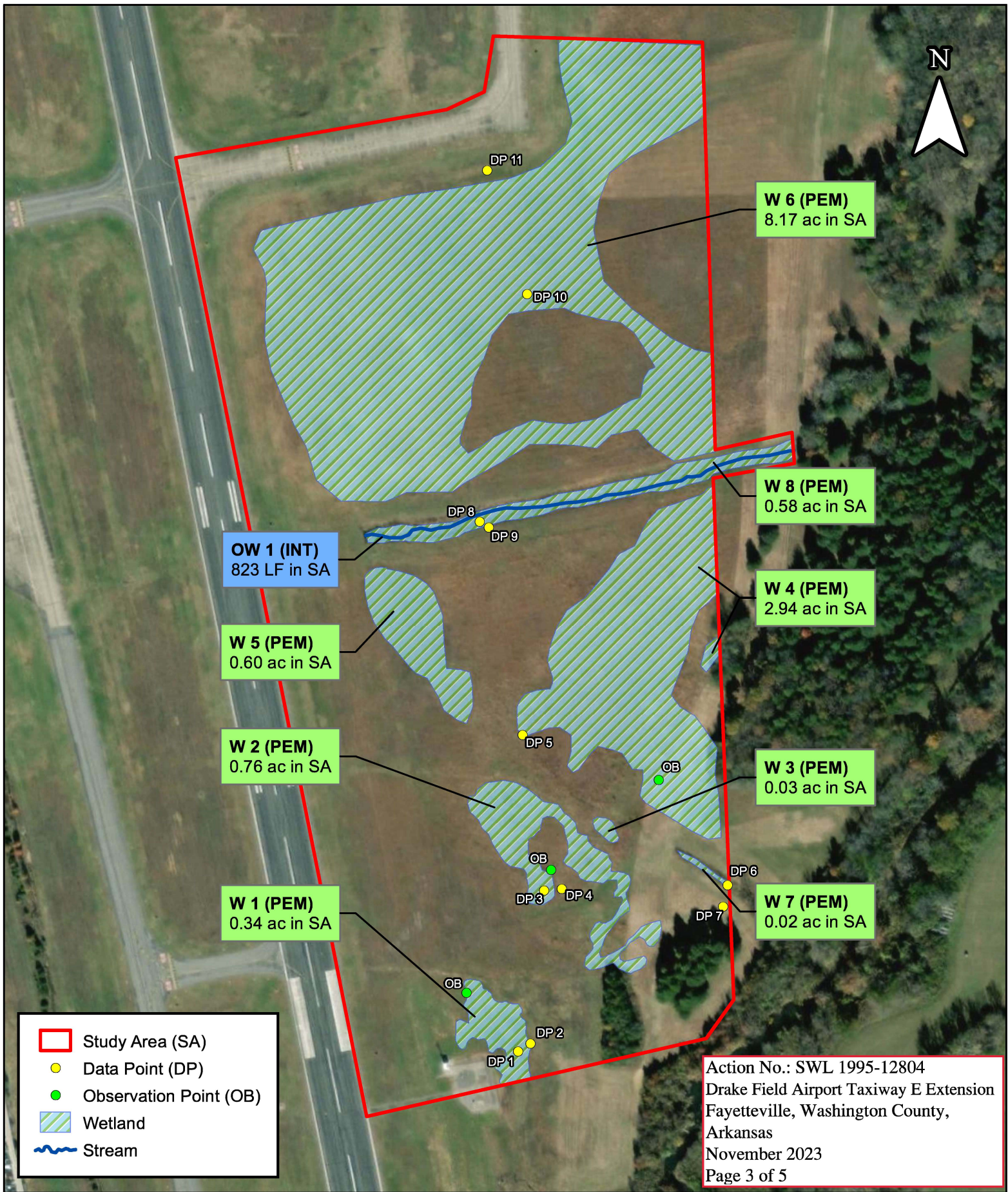
0 0.25  
 Miles

Figure 1









#### WETLAND DETAIL MAP

Drake Field (FYV) Taxiway E Extension  
Fayetteville, Washington County, Arkansas

2021 Aerial Imagery; ESRI GIS INFORMATION

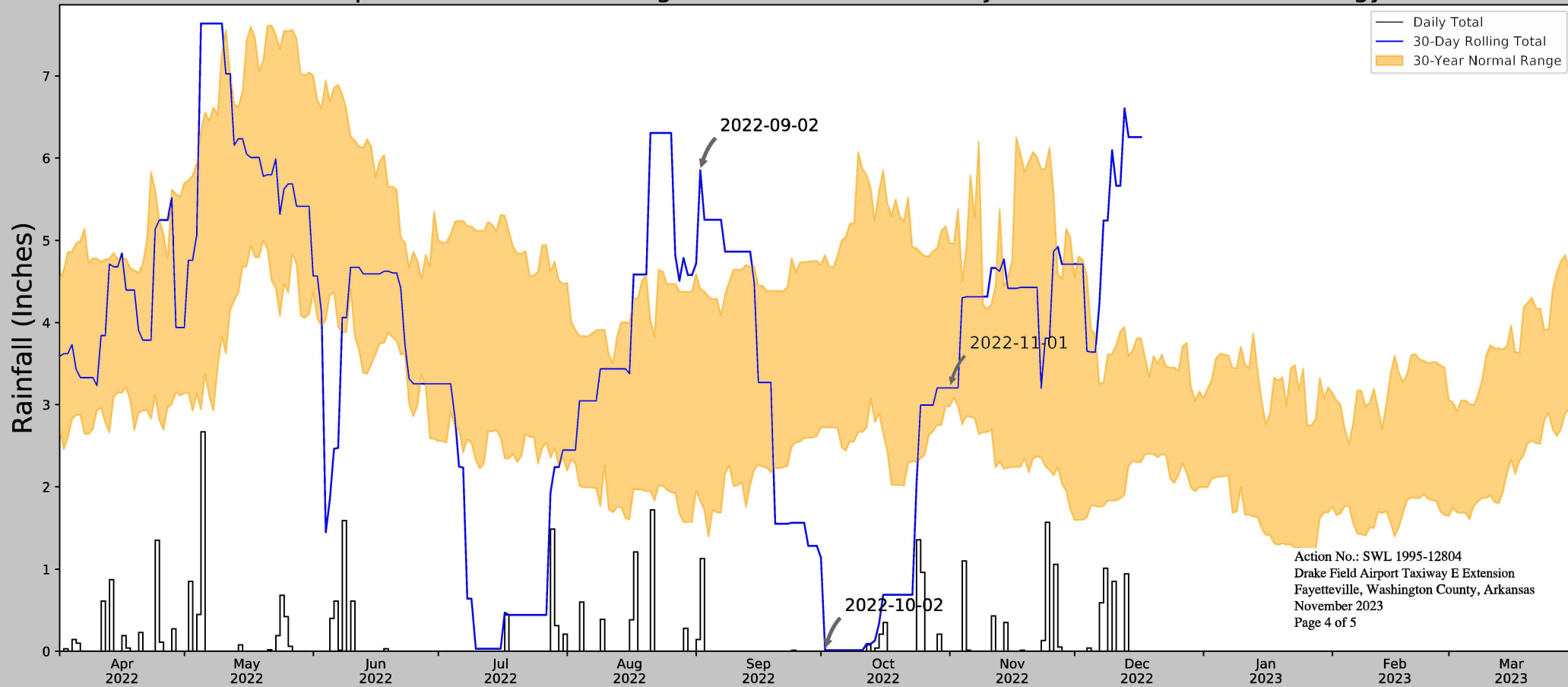
Lat: 36.002263°  
Long: -94.167517°

0 250  
Feet

Figure 3



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.002542, -94.167343
Observation Date	2022-11-01
Elevation (ft)	1230.92
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Wet Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-11-01	2.978347	4.968504	3.204725	Normal	2	3	6
2022-10-02	2.721654	4.820866	0.011811	Dry	1	2	2
2022-09-02	1.829528	4.414173	5.850394	Wet	3	1	3
Result							Normal Conditions - 11

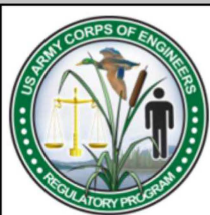


Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
FAYETTEVILLE DRAKE FLD	36.0103, -94.1683	1236.877	0.539	5.957	0.246	11257	90
FAYETTEVILLE 3.9 W	36.0651, -94.2246	1231.955	4.922	4.922	2.239	1	0
FAYETTEVILLE EXP STN	36.1011, -94.1736	1270.013	6.281	33.136	3.035	69	0
FAYETTEVILLE 1.0 E	36.0741, -94.1374	1653.871	4.734	416.994	4.104	4	0
PRAIRIE GROVE	35.9828, -94.3061	1310.039	7.934	73.162	4.151	5	0
DEVILS DEN SP	35.78, -94.2517	1339.895	16.583	103.018	9.171	17	0

**Record of Climatological  
Observations**  
**These data are quality controlled and may not  
be identical to the original observations.**  
Generated on 12/16/2022

Observation Time Temperature: Unknown Observation Time Precipitation: 2400

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2022	11	01	78	38		0.00		0.0		0.0								
2022	11	02	75	40		0.00		0.0		0.0								
2022	11	03	77	53		0.00		0.0		0.0								
2022	11	04	78	47		1.10		0.0		0.0								
2022	11	05	59	42		0.01		0.0		0.0								
2022	11	06	75	48		0.00		0.0		0.0								
2022	11	07	76	45		0.00		0.0		0.0								
2022	11	08	80	59		0.00		0.0		0.0								
2022	11	09	82	60		0.00		0.0		0.0								
2022	11	10	78	63		0.00		0.0		0.0								
2022	11	11	65	32		0.43		0.3		0.0								
2022	11	12	42	24		T		T		0.0								
2022	11	13	50	18		0.00		0.0		0.0								
2022	11	14	47	24		0.35		2.3		0.0								
2022	11	15	38	27		0.00		0.0		0.0								
2022	11	16	43	21		0.00		0.0		0.0								
2022	11	17	51	18		0.00		0.0		0.0								
2022	11	18	37	26		0.01		0.3		0.0								
2022	11	19	45	21		0.00		0.0		0.0								
2022	11	20	49	15		0.00		0.0		0.0								
2022	11	21	56	19		0.00		0.0		0.0								
2022	11	22	61	25		0.00		0.0		0.0								
2022	11	23	61	27		0.13		0.0		0.0								
2022	11	24	54	49		1.57		0.0		0.0								
2022	11	25	60	36		0.00		0.0		0.0								
2022	11	26	55	34		1.06		0.0		0.0								
2022	11	27	51	41		0.05		0.0		0.0								
2022	11	28	60	32		T		T		0.0								
2022	11	29	73	34		0.00		0.0		0.0								
2022	11	30	45	23		0.00		0.0		0.0								
Summary			60	35		4.71		2.9										

Empty, or blank, cells indicate that a data observation was not reported.  
\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown  
"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation  
"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.  
"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.  
Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

**PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM**  
**U.S. Army Corps of Engineers**

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PJD:**

**B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:**

Mr. Colby Marshall  
2049 E. Joyce Blvd  
Suite 400  
Fayetteville, AR 72703

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER:** CESWL-RD, Taxiway E Extension-Drake  
Field Airport, SWL 1995-12804

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**

*(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)*

State: Arkansas County/parish/borough: Washington City: Fayetteville

Center coordinates of site (lat/long in degree decimal format):

Lat: 36.008352° Long: -94.163141°

Universal Transverse Mercator: NAD 83/UTM Zone 15, Northing: Easting:

Name of nearest waterbody: Ward Slough

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: November 10, 2023

☐ Field Determination. Date(s):

**TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.**

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resources (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Wetland 1	35.999910	-94.167664	0.34 acre	wetland	Section 404
Wetland 2	36.000704	-94.167231	0.76 acre	wetland	Section 404
Wetland 3	36.000898	-94.167015	0.03 acre	wetland	Section 404
Wetland 4	36.001678	-94.166841	2.94 acre	wetland	Section 404
Wetland 5	36.001899	-94.167882	0.60	wetland	Section 404
Wetland 6	36.003412	-94.167882	8.17	wetland	Section 404

*Table Continued on next page*





1. The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "*may be*" waters of the U.S. and/or that there "*may be*" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

**SUPPORTING DATA. Data reviewed for PJD (check all that apply)**

Checked items should be included in subject file. Appropriate reference sources below where indicated for all checked items:

☒ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:

Map: Wetland Identification & Jurisdictional Resource Eval: Taxiway E Extension October 2023

☒ Data sheets prepared/submitted by or on behalf of the PJD requestor:

☒ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report. Rationale:

☐ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☒ U.S. Geological Survey Hydrologic Atlas: NHD layer accessed on National Regulatory Viewer

☒ USGS NHD data.

☒ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name: Fayetteville, AR (1:24K)

☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Viewed/ accessed November 2023

☒ National wetlands inventory map(s). Cite name: Viewed/accessed November 2023

☐ State/Local wetland inventory map(s):

☐ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation is:

*(National Geodetic Vertical Datum of 1929)*

☒ Photographs: ☒ Aerial (Name & Date): Google Earth (1994-2022)

or

☒ Other (Name & Date): Site photos provided by Agent in delineation report.

☐ Previous determination(s). File no. and date of response letter:

☐ Other information (please specify):

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**



\_\_\_\_\_  
Signature and date of  
Regulatory staff member  
completing PJD

\_\_\_\_\_  
Signature and date of  
person requesting PJD  
(REQUIRED, unless obtaining  
the signature is impracticable)<sup>1</sup>

<sup>1</sup> Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.



Sarah Huckabee Sanders  
Governor  
Shea Lewis  
Interim Secretary

October 20, 2023

Ms. Kelly Oliver-Amy  
Environmental Protection Specialist  
FAA-Southwest Region, Arkansas/Oklahoma Airports District Office  
10101 Hillwood Pkwy  
Fort Worth, TX 76177

Re: Washington County: General  
Section 106 Review: FAA  
Proposed Undertaking: Drake Field Taxiway E Extension  
Archeological Monitoring Report: *A Cultural Resources Survey of the Proposed Drake Field Taxiway E Extension in Washington County, Arkansas*  
Flat Earth Archeology Report Number: 2023-98  
AHPP Tracking Number: 111482.01

Dear Ms. Oliver-Amy:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the cultural resources survey for the above-mentioned project located in Section 4, Township 15 North, Range 30 West in Washington County, Arkansas. The proposed project entails extending a taxiway at the Drake Field Airport. Flat Earth Archeology conducted a Phase I cultural resources survey of the area of potential effect (APE) to determine if any historic properties were present in the tract and if so, to make management recommendations regarding these properties.

A total of 446 shovel tests were excavated, seven of which were positive for cultural materials and resulted in the recording of one new archeological site, 3WA1599. Based on the analysis of site 3WA1599 and the lack of diagnostic artifacts, the AHPP concurs that this new site is not eligible for listing on the National Register of Historic Places (NRHP).

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

Tribes that have expressed an interest in the area include the Cherokee Nation, the Osage Nation, and the Shawnee Tribe. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

We appreciate the opportunity to review this undertaking. If you have any questions, please contact Kathryn Bryles at (501) 324-9784 or [Kathryn.Bryles@arkansas.gov](mailto:Kathryn.Bryles@arkansas.gov). Please refer to the AHPP Tracking Number above in any correspondence.

Sincerely,

Kathryn  
Bryles

Digitally signed by  
Kathryn Bryles  
Date: 2023.10.20  
09:31:00 -05'00'

for

Scott Kaufman  
AHPP Director and State Historic Preservation Officer

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey



Sarah Huckabee Sanders  
Governor  
Shea Lewis  
Secretary

September 18, 2023

Ms. Kelly Oliver-Amy  
Environmental Protection Specialist  
FAA Southwest Region  
Arkansas/Oklahoma Airports District Office  
10101 Hillwood Pkwy.  
Fort Worth, TX 76177

RE: Washington County: General  
Section 106 Review: FAA  
Proposed Undertaking: Drake Field Airport Taxiway Extension  
AHPP Tracking Number: 111482

Dear Ms. Oliver-Amy:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the submission for the above referenced undertaking in Section 4, Township 15 North, Range 30 West in Washington County, Arkansas, at the Drake Field Airport. The proposed undertaking entails the extension of Taxiway E from the intersection of Taxiway D and Taxiway E to Runway 34. The project will include grading, drainage, pavement section construction, lighting, and signage.

There are numerous previously recorded archeological sites located within the area of potential effect (APE), and one site is located proximal to the APE. The nearby presence of the Ward Slough also indicates a potential to encounter unrecorded archeological sites.

Based on the provided information, the AHPP requests that a cultural resources survey be conducted of the APE. We request the survey conform to the *Arkansas State Plan*, Appendix B: Guidelines for Archeological Fieldwork and Report Writing in Arkansas (revised 2010). Personnel supervising the investigation should meet the Secretary of the Interior's Professional Qualifications Standards found in 36 CFR Part 61.

Tribes that have expressed an interest in the area include the Cherokee Nation, the Osage Nation, and the Shawnee Tribe. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

We appreciate the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, call Kathryn Bryles at 501-324-9784 or email [kathryn.bryles@arkansas.gov](mailto:kathryn.bryles@arkansas.gov).

Sincerely,

**Kathryn  
Bryles**

Digitally signed by  
Kathryn Bryles  
Date: 2023.09.18  
14:18:24 -05'00'

for  
Scott Kaufman  
AHPP Director and State Historic Preservation Officer

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey



**Sarah Huckabee Sanders**

Governor

**Shea Lewis**

Secretary

Date: November 8, 2023  
Subject: Elements of Special Concern  
FYV Taxiway E Extension  
Drake Field Airport, Fayetteville, Arkansas  
ANHCC No.: P-CF..-23-117

Mr. Colby Marshall  
Garver  
2049 E. Joyce Blvd.  
Suite 400  
Fayetteville, AR 72703

Dear Mr. Marshall:

Staff members of the Arkansas Natural Heritage Commission have reviewed our files for records indicating the occurrence of rare plants and animals, outstanding natural communities, natural or scenic rivers, or other elements of special concern within or near the proposed Drake Field Taxiway E Extension project in Fayetteville, Washington County, Arkansas. We find no records at present time. It is of note that the site drains into the West Fork of the White River which is known to support species of conservation concern. Water quality issues could be an important consideration.

A Washington County Element list is enclosed for your reference. Represented on this list are elements for which we have records in our database. The list has been annotated to indicate those elements known to occur within a one and a five-mile radius of the project site. The list is further annotated to indicate those elements recorded in and along the West Fork of the White River. A legend is enclosed to help you interpret the codes used on this list.

Please keep in mind that the project area may contain important natural features of which we are unaware. Staff members of the Arkansas Natural Heritage Commission have not conducted a field survey of the study site. Our review is based on data available to the program at the time of the request. It should not be regarded as a final statement on the elements or areas under consideration. Because our files are updated constantly, you may want to check with us again at a later time.

Thank you for consulting us. It has been a pleasure to work with you on this study.

Sincerely,

A handwritten signature in cursive script that reads 'Cindy Osborne'.

Cindy Osborne  
Data Manager/Environmental Review Coordinator

Enclosures: Legend, Washington County Element List (annotated), Invoice



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Arkansas Ecological Services Field Office  
110 South Amity Suite 300  
Conway, AR 72032-8975  
Phone: (501) 513-4470 Fax: (501) 513-4480



In Reply Refer To:  
Project code: 2023-0027759  
Project Name: FYV Taxiway E Extension

December 22, 2022

Subject: Concurrence verification letter for 'FYV Taxiway E Extension' 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 Garver LLC:

The U.S. Fish and Wildlife Service (Service) received on **December 22, 2022** your effect determination(s) for the 'FYV Taxiway E Extension' (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 ( <i>Laterallus jamaicensis ssp. jamaicensis</i> )	Threatened	NLAA
Gray Bat ( <i>Myotis grisescens</i> )	Endangered	NLAA
Indiana Bat ( <i>Myotis sodalis</i> )	Endangered	NLAA
Missouri Bladderpod ( <i>Physaria filiformis</i> )	Threatened	No effect
Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	Endangered	No effect
Ozark Big-eared Bat ( <i>Corynorhinus (=Plecotus) townsendii ingens</i> )	Endangered	NLAA
Piping Plover ( <i>Charadrius melodus</i> )	Threatened	NLAA
Red Knot ( <i>Calidris canutus rufa</i> )	Threatened	NLAA

**Status**



The Service concurs with the NLAA determination(s) for the species listed above. No further consultation for this project is required for these species. Your agency has met consultation requirements by informing the Service of your “No Effect” determinations. No consultation for this project is required for species that you determined will not be affected by this action.

This concurrence verification letter confirms you may rely on effect determinations you reached by considering the Arkansas DKey to satisfy agency consultation requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.; ESA). No further consultation for this project is required for species that you determined will not be affected by this action.

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

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

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

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

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**Action Description**

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

**1. Name**

FYV Taxiway E Extension

**2. Description**

The following description was provided for the project 'FYV Taxiway E Extension':

This project will include a partial extension of Taxiway E from the intersection of Taxiway D and Taxiway E to Runway 34 opposite of the Taxiway B3 connector as shown in the attached ALD. This project will include grading, drainage, pavement section construction, lighting and signage.

Design of the project shall be completed under an AIP grant in 2023. The project is expected to start construction in 2023.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@36.002193649999995,-94.1677603484163,14z>



## **Species Protection Measures**

Gray Bat

<https://www.fws.gov/southeast/pdf/species-protective-measures/gray-bat.pdf>

Ozark Big-eared Bat

<https://www.fws.gov/southeast/pdf/species-protective-measures/ozark-big-eared-bat.pdf>

Indiana Bats

<https://www.fws.gov/southeast/pdf/species-protective-measures/indiana-bat.pdf>

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## Qualification Interview

1. Have you made an effects determination of "no effect" for all species in the area of the project? A "no effect" determination means the project will have no beneficial effect, no short-term adverse effects, and no long-term adverse effects on any of the species on the IPaC-generated species list for the proposed project or those species habitat. A project with effects that cannot be meaningfully measured, detected or evaluated, effects that are extremely unlikely to occur, or entirely beneficial effects should not have a "no effect" determination. (If unsure, select "No").  
*No*
  2. Is the action authorized, funded, or being carried out by a Federal agency?  
*Yes*
  3. Are you the the action agency or the designated non-federal representative?  
*Yes*
  4. Choose the agency you represent in this consultation with the U.S. Fish and Wildlife Service:  
*g. All other federal agencies or agency designees*
  5. [Semantic] Does the project intersect designated critical habitat for the Leopard Darter?  
**Automatically answered**  
*No*
  6. [Semantic] Does the project intersect designated critical habitat for the Neosho Mucket?  
**Automatically answered**  
*No*
  7. [Semantic] Does the project intersect designated critical habitat for Yellowcheek Darter?  
**Automatically answered**  
*No*
  8. [Semantic] Does the project intersect designated critical habitat for Rabbitsfoot?  
**Automatically answered**  
*No*
  9. [Semantic] Does the project intersect the American burying beetle consultation area?  
**Automatically answered**  
*No*
  10. [Semantic] Does the project intersect the red-cockaded woodpecker AOI?  
**Automatically answered**  
*No*
  11. [Semantic] Does the project intersect the Eastern black rail AOI?  
**Automatically answered**  
*Yes*
-

12. Will the project take place in freshwater herbaceous wetlands and/or wet prairies?  
*Yes*
  13. Will any part of the project take place between March 15 and May 15 OR between July 15 and October 1?  
*Yes*
  14. [Semantic] Does the project intersect the red knot AOI?  
**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?  
*Yes*
  17. [Semantic (same answer as "8.3")] Will any part of the project take place between March 15 and May 15 OR between July 15 and October 1?  
**Automatically answered**  
*Yes*
  18. [Semantic] Does the project intersect the Piping Plover AOI?  
**Automatically answered**  
*Yes*
  19. [Semantic (same answer as "8.3" or "9.9")] Will any part of the project take place between March 15 and May 15 OR between July 15 and October 1?  
**Automatically answered**  
*Yes*
  20. [Semantic] Does the project intersect the Whooping Crane AOI?  
**Automatically answered**  
*No*
  21. [Semantic] Does the project intersect the interior least tern AOI?  
**Automatically answered**  
*No*
  22. [Semantic] Does the project intersect the Gray Bat AOI?  
**Automatically answered**  
*Yes*
  23. Are there any caves within 0.5 mile of the project area?  
*No*
  24. Does the project occur in a subdivision or urban area (housing on 0.5 acres or less and/or structures present)?  
*No*
  25. Does the project involve blasting of any type or tree removal of greater than 10 acres?  
*No*
-



26. [Semantic] Does the project intersect the Gray Bat 1-mile buffer?  
**Automatically answered**  
No
27. Will the activity affect the roosting environment of cave or karst feature-dwelling bats (e.g., prescribed fire where smoke may enter hibernacula, filling of karst feature with material or liquid of any type, change in the structure or opening of the cave or feature)?  
No
28. Will the project proponents follow all applicable species [protective measures](#) for Gray Bats?  
Yes
29. [Semantic] Does the project intersect the Ozark Big-eared Bat AOI?  
**Automatically answered**  
Yes
30. [Semantic (same answer as question "13.2")] Is there a cave known on the site or within 0.5 mile of the project area?  
**Automatically answered**  
No
31. [Semantic (same answer as question "13.2.1")] Does the project occur in a subdivision or urban area?  
**Automatically answered**  
No
32. [Semantic (same answer as question "13.3")] Does the project involve blasting of any type or tree removal of greater than 10 acres?  
**Automatically answered**  
No
33. [Semantic] Does the project intersect the Ozark Big-eared Bat cAOI?  
**Automatically answered**  
No
34. [Semantic (same as answer as question "13.5" )] Will the activity affect the roosting environment of cave-dwelling bats (e.g., prescribed fire where smoke may enter hibernacula, filling of karst feature with material or liquid of any type, change in the structure or opening of the cave or feature)?  
**Automatically answered**  
No
35. Will the project proponents follow all applicable species [protective measures](#) for Ozark Big-eared Bats?  
Yes
36. [Semantic] Does the project intersect the Indiana bat AOI?  
**Automatically answered**  
Yes
-

37. [Sematic (same answer as question "13.2" or "14.4")] Are there any caves within 0.5 mile of the project area?

**Automatically answered**

No

38. [Sematic (same answer as question "13.2.1" or ""14.7")] Does the project occur in a subdivision or urban area?

**Automatically answered**

No

39. [Sematic (same answer as question "13.3" or "14.10)] Does the project involve blasting of any type or tree removal of greater than 10 acres?

**Automatically answered**

No

40. [Semantic] Does the project intersect the Indiana Bat cAOI?

**Automatically answered**

No

41. Does the project involve tree removal (e.g., forestry management practices, timber stand improvement, wildlife stand improvement, prescribed fire, midstory removal, thinning) of trees greater than 3 inches diameter at breast height occurring within suitable habitat?

No

42. [Semantic (same as answer as question "13.5" or "14.4" )] Will the activity affect the roosting environment of cave-dwelling bats (e.g., prescribed fire where smoke may enter occupied caves, filling of karst feature with material or liquid of any type, change in the structure or opening of the cave or feature)?

**Automatically answered**

No

43. Will the project proponents follow all applicable species [protective measures](#) for Indiana Bats?

Yes

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

**Automatically answered**

Yes

45. Have you determined that the proposed action will have “no effect” on the northern long-eared bat? (If you are unsure select "No")

Yes

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

**Automatically answered**

No

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

**Automatically answered**

No

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

**Automatically answered**

*No*

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

**Automatically answered**

*Yes*

50. Is the proposed project in or near an open glade (an area with thin, poor soil and bedrock close to the surface or in rocky outcrops) or in shale barrens (Ouachita Mountains ecoregion)?

*No*

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

**Automatically answered**

*No*

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

**Automatically answered**

*No*

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

**Automatically answered**

*No*

---

**IPaC User Contact Information**

Agency: Department of Agriculture  
Name: Garver LLC  
Address: 4300 South J.B Hunt Drive, Suite 240  
Address Line 2: Suite 240  
City: Rogers  
State: AR  
Zip: 72758  
Email: arbiologist@garverusa.com  
Phone: 4792874628

**Lead Agency Contact Information**

Lead Agency: Federal Aviation Administration

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## Mountain, Ryan C.

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**From:** Bennett, Kyle A.  
**Sent:** Monday, October 16, 2023 12:05 PM  
**To:** Mountain, Ryan C.  
**Subject:** FW: FYV Drake Field Airport Improvements - West Fork White River Floodplain

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Ryan,

See below for correspondence between Kathryn and Alan with COF.

**Kyle Bennett, PE**  
Garver  
479-287-4614

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**From:** McCoy, Kathryn L. <KLMcCoy@GarverUSA.com>  
**Sent:** Thursday, November 10, 2022 11:20 AM  
**To:** Bennett, Kyle A. <KABennett@GarverUSA.com>; White, Adam T. <ATWhite@GarverUSA.com>  
**Subject:** FW: FYV Drake Field Airport Improvements - West Fork White River Floodplain

Kyle and Adam,

I reached out to Alan Pugh at the City of Fayetteville about the extension project. See his response below. My one concern would be the requirement for no impact to velocities; however, we should be able to mitigate for that if the need arises.

**Kathryn L. McCoy, PE, CFM**  
Garver  
501-553-9975

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**From:** Pugh, Alan <[apugh@fayetteville-ar.gov](mailto:apugh@fayetteville-ar.gov)>  
**Sent:** Thursday, November 10, 2022 11:08 AM  
**To:** McCoy, Kathryn L. <[KLMcCoy@GarverUSA.com](mailto:KLMcCoy@GarverUSA.com)>  
**Subject:** RE: FYV Drake Field Airport Improvements - West Fork White River Floodplain

You would need to show a no adverse impact. That would include no increase in BFE, velocity and flows. You can look at 168.10.U for that information. To my knowledge, the effective FEMA model may not exist. I've not had any luck finding one. The only thing we have is an old PDF file. I think it's an old HEC2 output file but would have to look to make sure.

Alan



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**From:** McCoy, Kathryn L. <[KLMcCoy@GarverUSA.com](mailto:KLMcCoy@GarverUSA.com)>  
**Sent:** Friday, October 28, 2022 12:07 PM  
**To:** Pugh, Alan <[apugh@fayetteville-ar.gov](mailto:apugh@fayetteville-ar.gov)>  
**Subject:** FYV Drake Field Airport Improvements - West Fork White River Floodplain

**CAUTION:** This email originated from outside of the City of Fayetteville. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Alan,

Hope your week has been going well. I am working with our Aviation group at Garver to scope a taxiway extension project at Drake Field. The proposed extension will encroach on the West Fork White River floodplain on the southeast end of the airport. As part of our H&H scope, we are planning to request the Effective FEMA model and perform an updated hydraulic analysis on the river for existing and proposed conditions. If we meet a no-rise condition for the 1% AEP event, we plan to provide a no-rise certification that would accompany a floodplain development permit. If slight rises occur due to the project, we plan to submit a CLOMR.

Does our scope meet the City's requirements with regard to floodplain development? Are there any additional requirements we should meet in terms of our hydraulic analysis and certification process?

If you would like to discuss the project in more detail, I'm happy to set up a call. Thanks!



**Kathryn L. McCoy, PE, CFM**  
Project Manager - Hydrology & Hydraulics  
*Transportation Team*

📞 501-376-3633

## Mountain, Ryan C.

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**From:** Marshall, John C (Colby)  
**Sent:** Monday, November 13, 2023 10:24 AM  
**To:** Glynn, John Z CIV USARMY CESWL (USA)  
**Cc:** Mountain, Ryan C.  
**Subject:** Re: FYV - Taxiway E Extension Wetland Report and PJD Request - SWL-1995-12804

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

**Categories:** Filed by Newforma

Thank you, sir!

Colby Marshall

**Colby Marshall**  
Garver  
479-879-9746

On Nov 13, 2023, at 08:46, Glynn, John Z CIV USARMY CESWL (USA) <John.Glynn@usace.army.mil> wrote:

Good morning Sir,

Thank you for reaching out in regards to the below described project. I will have my draft PJD completed by close of business today for my supervisors review. The delineation report was excellent, thank you for your time and work getting this together. I should be able to get the document packet to you shortly.

Respectfully,

John Glynn  
Regulatory Specialist  
U.S. Army Corps of Engineers

---

**From:** Marshall, John C (Colby) <JCMarshall@GarverUSA.com>  
**Sent:** Friday, November 10, 2023 10:35 AM  
**To:** Glynn, John Z CIV USARMY CESWL (USA) <John.Glynn@usace.army.mil>  
**Subject:** [Non-DoD Source] RE: FYV - Taxiway E Extension Wetland Report and PJD Request - SWL-1995-12804

Mr. Glynn,

I just wanted to reach out to see if you have everything you need for your review. Is there anything additional I can provide to assist you?

Thank you,



**Colby Marshall**  
Environmental Specialist  
Transportation Team

📞 479-527-9100  
📠 479-879-9746

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**From:** CESWL-Regulatory <[PR-R.CESWL-PR-R@usace.army.mil](mailto:PR-R.CESWL-PR-R@usace.army.mil)>  
**Sent:** Wednesday, October 18, 2023 12:19 PM  
**To:** Marshall, John C (Colby) <[JCMarshall@GarverUSA.com](mailto:JCMarshall@GarverUSA.com)>  
**Subject:** RE: FYV - Taxiway E Extension Wetland Report and PJD Request

This is official notification that we have received your project and are now assigning it to our Regulatory Project Manager, Mr. John Glynn. You can contact him either through email at [John.glynn@usace.army.mil](mailto:John.glynn@usace.army.mil) or on the phone at 501-340-1377.

The Administrative Record Number assigned to this project is: SWL-1995-12804. Please use this number when communicating with us about your project.

For more information on the Regulatory Program, visit our website at:  
<http://www.swl.usace.army.mil/Missions/Regulatory.aspx>

Please let us know how we are doing by submitting your comments or suggestions on our Customer Service Survey: <https://regulatory.ops.usace.army.mil/customer-service-survey/>

Willis A. Bullard  
Legal Instruments Examiner  
Regulatory Division

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**From:** Marshall, John C (Colby) <[JCMarshall@GarverUSA.com](mailto:JCMarshall@GarverUSA.com)>  
**Sent:** Wednesday, October 4, 2023 1:58 PM  
**To:** CESWL-Regulatory <[PR-R.CESWL-PR-R@usace.army.mil](mailto:PR-R.CESWL-PR-R@usace.army.mil)>  
**Cc:** Rupe, David M CIV USARMY CESWL (USA) <[David.M.Rupe@usace.army.mil](mailto:David.M.Rupe@usace.army.mil)>; Mountain, Ryan C. <[RCMountain@GarverUSA.com](mailto:RCMountain@GarverUSA.com)>; Bennett, Kyle A. <[KABennett@GarverUSA.com](mailto:KABennett@GarverUSA.com)>  
**Subject:** [Non-DoD Source] FYV - Taxiway E Extension Wetland Report and PJD Request

To Whom It May Concern:

Please find attached the wetland report for the FYV – Taxiway E Extension project in Fayetteville, Washington County, Arkansas. We are also requesting a PJD for potentially jurisdictional aquatic resources on site. I have copied Mr. David Rupe as we have conducted preliminary coordination with him. Please let me know if you have any questions or need additional information.

Respectfully,

Colby Marshall



**Colby Marshall**

Environmental Specialist

*Transportation Team*

📞 479-879-9746

📠 479-879-9746

# APPENDIX C

## Federal and State Listed Species Lists





## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Arkansas Ecological Services Field Office  
110 South Amity Suite 300  
Conway, AR 72032-8975  
Phone: (501) 513-4470 Fax: (501) 513-4480



In Reply Refer To:  
Project Code: 2023-0027759  
Project Name: FYV Taxiway E Extension

October 17, 2023

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

### To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

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

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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

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## PROJECT SUMMARY

Project Code: 2023-0027759

Project Name: FYV Taxiway E Extension

Project Type: Airport - New Construction

Project Description: This project will include a partial extension of Taxiway E from the intersection of Taxiway D and Taxiway E to Runway 34 opposite of the Taxiway B3 connector as shown in the attached ALD. This project will include grading, drainage, pavement section construction, lighting and signage.

Design of the project shall be completed under an AIP grant in 2023. The project is expected to start construction in 2023.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@36.0013627,-94.16764161623871,14z>



Counties: Washington County, Arkansas

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## ENDANGERED SPECIES ACT SPECIES

There is a total of 11 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<sup>1</sup>, 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.

- 
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
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6329">https://ecos.fws.gov/ecp/species/6329</a>	Endangered
Indiana Bat <i>Myotis sodalis</i> There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5949">https://ecos.fws.gov/ecp/species/5949</a>	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Endangered
Ozark Big-eared Bat <i>Corynorhinus (=Plecotus) townsendii ingens</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7245">https://ecos.fws.gov/ecp/species/7245</a>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

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## BIRDS

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

## REPTILES

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4658">https://ecos.fws.gov/ecp/species/4658</a>	Proposed Threatened

## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## FLOWERING PLANTS

NAME	STATUS
Missouri Bladderpod <i>Physaria filiformis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/5361">https://ecos.fws.gov/ecp/species/5361</a>	Threatened

## 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: Garver  
Name: Garver LLC  
Address: 4300 South J.B Hunt Drive, Suite 240  
Address Line 2: Suite 240  
City: Rogers  
State: AR  
Zip: 72758  
Email: arbiologist@garverusa.com  
Phone: 4792874628

**LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Federal Aviation Administration

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

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
<b>Animals-Invertebrates</b>					
✓ Allocapnia jeanae*	a winter stonefly	-	INV	G3	S1?
Allocapnia warreni	a winter stonefly	-	INV	GH	SH
Amblyscirtes aesculapius*	Lace-winged Roadside-Skipper	-	INV	G3G4	S1S3
Amblyscirtes belli	Bell's Roadside-Skipper	-	INV	G4	S3S4
Amblyscirtes carolina	Carolina Roadside-Skipper	-	INV	G3G4	S1S3
Amblyscirtes linda	Linda's Roadside-Skipper	-	INV	G2G3	S1S3
Apochthonius diabolus	Devil's Den cave pseudoscorpion	-	INV	G1	S1
Argynnis diana	Diana Fritillary	-	INV	G2G3	S2S3
Argynnis idalia	Regal Fritillary	-	INV	G3?	S1
Caecidotea ancyla	a cave isopod	-	INV	G3G4	S2
✓ Caecidotea macropropoda	bat cave isopod	-	INV	G3	S2
✓ Caecidotea simulator	a cave isopod	-	INV	G2G3	S1
✓ Caecidotea stiladactyla	a cave isopod	-	INV	G3G4	S3
Calephelis muticum	Swamp Metalmark	-	INV	G3	S1
Cambarunio hesperus	Western Rainbow	-	INV	GNR	S3
Cambarus aculabrum	Benton County Cave Crayfish	LE	SE	G1	S1
Celastrina nigra	Dusky Azure	-	INV	GU	S2
Chlosyne gorgone	Gorgone Checkerspot	-	INV	G5	S3
Cicindela duodecimguttata	twelve-spotted tiger beetle	-	INV	G5	S3S4
Cylindera unipunctata	woodland tiger beetle	-	INV	G4G5	S2
Dendrocoelopsis americana	a cave flatworm	-	INV	G3	S1
Derops divalis	a beetle	-	INV	GNR	S1
Ellipsoptera lepida	little white tiger beetle	-	INV	G3G4	S2S3
Ellipsoptera macra	sandy stream tiger beetle	-	INV	G5	S2S3
Erynnis martialis	Mottled Duskywing	-	INV	G3	S2S3
Euphydryas phaeton ozarkae	Ozark Baltimore Checkerspot	-	INV	G4T3	S3
Euphyes dion	Dion Skipper	-	INV	G5	S3
Faxonius difficilis	Painted Crayfish	-	INV	G3	S1
✓★ Faxonius longidigitus*	Longpincer Crayfish	-	INV	G3G4	S3S4
Faxonius meeki brevis	Meek's Short Pointed Crayfish	-	INV	G4T3	S3
✓ Faxonius nana	Midget Crayfish	-	INV	G3	S3
✓ Faxonius williamsi	Williams' Crayfish	-	INV	G3	S3
Fusconaia ozarkensis	Ozark Pigtoe	-	INV	G3G4	S3
Fusconaia sp. cf flava	Elongate Pigtoe	-	INV	GNR	S1
Gomphurus ozarkensis	Ozark clubtail	-	INV	G4	S1
Hesperia leonardus	Leonard's Skipper	-	INV	G4	S3
Hesperia metea	Cobweb Skipper	-	INV	G4	S3
✓ Hesperohermes occidentalis	a cave pseudoscorpion	-	INV	G5	S1
✓ Heterosternuta ouachita	Ouachita diving beetle	-	INV	GNR	S2
Heterosternuta sulphur	Sulphur Springs diving beetle	-	INV	G3	S1?
Lampsilis rafinesqueana	Neosho Mucket	LE	SE	G1	S1
Lethe creola	Creole Pearly-Eye	-	INV	G4	S3
Lucanus elaphus	giant stag beetle	-	INV	G3G5	S2
Nicrophorus americanus	American burying beetle	LT	SE	G3	S1
Paduniella nearctica	nearctic paduniellan caddisfly	-	INV	G2	S1?
Papilio joanae	Ozark Swallowtail	-	INV	G2?	S2
Pleurobema sintoxia	Round Pigtoe	-	INV	G4G5	S3
Poanes yehl	Yehl Skipper	-	INV	G4	S1S3
Polygonia progne	Gray Comma	-	INV	G5	S2S3
Problema byssus*	Byssus Skipper	-	INV	G4	S3

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
✓ <i>Procambarus liberorum</i>	Osage Burrowing Crayfish	-	INV	G3G4	S3S4
✓ <i>Pseudosinella dubia</i>	a cave springtail	-	INV	G3	SNR
✓ <i>Pseudosinella testa</i>	Shelled Cave Springtail	-	INV	G2G3	SNR
<i>Ptychobranhus occidentalis</i>	Ouachita Kidneyshell	-	INV	G3G4	S3
✓ <i>Pygmarrhopalites clarus</i>	a cave springtail	-	INV	G4	S1S2
✓ <i>Rhadine ozarkensis</i>	Ozark ground beetle	-	INV	GH	SH
<i>Satyrium favonius ontario</i>	Oak Hairstreak	-	INV	G4G5T4	S3
<i>Stygobromus ozarkensis</i>	Ozark cave amphipod	-	INV	G4	S2
<i>Tartarocreagris ozarkensis</i>	a pseudoscorpion	-	INV	GNR	S1
<i>Telegonus cellus</i>	Golden Banded-Skipper	-	INV	G4	S2S3
<i>Theliderma cylindrica</i>	Rabbitsfoot	LT	SE	G3G4	S3
<i>Toxolasma lividum</i>	Purple Lilliput	-	INV	G3	S3
<i>Toxolasma parvum</i>	Lilliput	-	INV	G5	S3
✓ <i>Trigenotyla parca</i>	a millipede	-	INV	G2	S1
<i>Venustaconcha ellipsiformis</i>	Ellipse	-	INV	G4	S2
<i>Venustaconcha pleasii</i>	Bleedingtooth Mussel	-	INV	G3G4	S3
<i>Villosa</i> sp. cf <i>lienosa</i>	little spectaclecase	-	INV	G5	S2S3

#### Animals-Vertebrates

✓ <i>Ambystoma annulatum</i>	Ringed Salamander	-	INV	G4	S3
<i>Ambystoma tigrinum</i>	Eastern Tiger Salamander	-	INV	G5	S3
<i>Asio flammeus</i>	Short-eared Owl	-	INV	G5	S3S4N
<i>Carphophis amoenus</i>	Common Wormsnake	-	INV	G5	S2
<i>Cariodes velifer</i>	highfin carpsucker	-	INV	G4G5	S3
<i>Centronyx henslowii</i>	Henslow's Sparrow	-	INV	G4	S1B,S2N
<i>Corynorhinus townsendii ingens</i>	Ozark big-eared bat	LE	SE	G4T1	S1
<i>Crotaphytus collaris</i>	Eastern Collared Lizard	-	INV	G5	S2
<i>Crystallaria asprella</i>	crystal darter	-	INV	G3	S2
<i>Cyprinella camura</i>	bluntnose shiner	-	INV	G5	SH
<i>Cyprinella spiloptera</i>	spotfin shiner	-	INV	G5	S1?
✓★ <i>Etheostoma autumnale</i> *	autumn darter	-	INV	G4	S3
<i>Etheostoma cragini</i>	Arkansas darter	-	INV	G3G4	S1
<i>Etheostoma microperca</i>	least darter	-	INV	G5	S1
<i>Etheostoma mihileze</i>	sunburst darter	-	INV	G4	S3
✓★ <i>Etheostoma teddyroosevelti</i> *	highland darter	-	INV	GNR	S3
<i>Eurycea spelaea</i>	Western Grotto Salamander	-	INV	G4	S3
✓ <i>Limnodynastes swainsonii</i>	Swainson's Warbler	-	INV	G4	S3B
✓ <i>Lithobates areolatus</i>	Crawfish Frog	-	INV	G4	S2
<i>Lithobates sylvaticus</i>	Wood Frog	-	INV	G5	S3
✓ <i>Myotis grisescens</i> *	gray bat	LE	SE	G3G4	S2S3
<i>Myotis leibii</i> *	eastern small-footed bat	-	INV	G4	S1
✓ <i>Myotis lucifugus</i>	little brown bat	-	SE	G3G4	S1
<i>Myotis septentrionalis</i>	northern long-eared bat	LE	SE	G2G3	S1S2
<i>Myotis sodalis</i>	Indiana bat	LE	SE	G2	S1
<i>Nocomis asper</i>	redspot chub	-	INV	G4	S3
<i>Notiosorex crawfordi</i>	Crawford's gray shrew	-	INV	G4	S2
<i>Notropis ozarcus</i>	Ozark shiner	-	INV	G3	S3
✓ <i>Ophisaurus attenuatus</i>	Slender Glass Lizard	-	INV	G5	S3
<i>Percina eides</i>	gilt darter	-	INV	G4	S3
<i>Percina nasuta</i>	longnose darter	-	INV	G3	S3
✓ <i>Perimyscus subflavus</i>	tricolored bat	PE	INV	G3G4	S1
<i>Phrynosoma cornutum</i>	Texas Horned Lizard	-	INV	G4G5	SH
<i>Polyodon spathula</i>	paddlefish	-	INV	G4	S3
✓ <i>Regina grahamii</i>	Graham's Crayfish Snake	-	INV	G5	S2
✓ <i>Reithrodontomys montanus</i>	plains harvest mouse	-	INV	G5	S1
<i>Setophaga cerulea</i>	Cerulean Warbler	-	INV	G4	S3B
<i>Sorex longirostris</i>	southeastern shrew	-	INV	G5	S2
<i>Spilogale putorius</i>	eastern spotted skunk	-	INV	G4	S2S3



Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
✓ Taxidea taxus	American badger	-	INV	G5	S1S2
✓ Terrapene ornata	Ornate Box Turtle	-	INV	G5	S2
✓ Thryomanes bewickii	Bewick's Wren	-	INV	G5	S1B,S1S2N
Troglichthys rosae	Ozark cavefish	LT	SE	G3	S1

#### Plants-Vascular

Agalinis auriculata	ear-leaf false foxglove	-	INV	G3	S1
Alisma triviale	northern water-plantain	-	INV	G5	S1
✓ Androsace occidentalis	rock-jasmine	-	INV	G5	S1
✓ Antennaria neglecta	field pussytoes	-	INV	G5	S1
Apocynum androsaemifolium	spreading dogbane	-	INV	G5	S1
Arabis hirsuta var. adpressipilis	hairy rockcress	-	INV	G5T4	S1?
✓ Argyrochosma dealbata	powdery cloak fern	-	INV	G4G5	S2
✓ Artemisia ludoviciana ssp. mexicana	white sagebrush	-	INV	G5T5?	S1S2
Asplenium x ebenoides	Scott's spleenwort	-	INV	GNA	S1
✓ Callirhoe alcaeoides	plains poppy-mallow	-	INV	G5?	S1?
Callirhoe bushii	Bush's poppy-mallow	-	INV	G3	S3
✓ Carex aggregata*	cluster sedge	-	INV	G5	S1
Carex alata	broad-wing sedge	-	INV	G5	S1
✓ Carex arkansana*	Arkansas sedge	-	INV	G4	S1
Carex careyana*	Carey's sedge	-	INV	G4G5	S3
Carex comosa	bottle-brush sedge	-	INV	G5	S1S2
✓ Carex conjuncta*	soft fox sedge	-	INV	G4G5	S1
Carex emoryi	Emory's sedge	-	INV	G5	S1
Carex fissa var. fissa	hammock sedge	-	INV	G4?T3T4	S1
Carex gracilescens	slender wood sedge	-	INV	G5?	S2
Carex gracillima	graceful sedge	-	INV	G5	S1
Carex hitchcockiana*	Hitchcock's sedge	-	INV	G5	S1S2
Carex lupuliformis	false hop sedge	-	INV	G4	S1S2
Carex normalis	spreading oval sedge	-	INV	G5	S1
✓ Carex opaca*	opaque prairie sedge	-	SE	G4	S2S3
Carex pellita	woolly sedge	-	INV	G5	S1S2
Carex scoparia var. scoparia*	pointed broom sedge	-	INV	G5T5	S1S2
Carex sparganioides	bur-reed sedge	-	INV	G5	S3
Carex stricta	tussock sedge	-	INV	G5	S3
Carex suberecta	prairie straw sedge	-	INV	G4	S2
Carex willdenowii	Willdenow's sedge	-	INV	G5	S1
Caulophyllum thalictroides	blue cohosh	-	INV	G5	S2
Crataegus coccinioides	Kansas hawthorn	-	INV	G4?Q	SH
Crataegus palmeri	Palmer's hawthorn	-	INV	GNR	SNR
Crataegus phaenopyrum	Washington hawthorn	-	INV	G4?	S1
Crocanthemum bicknellii	hoary frostweed	-	INV	G5	SH
Cuscuta coryli	hazel dodder	-	INV	G5?	SU
✓ Cuscuta glomerata*	rope dodder	-	INV	G5	S1
Delphinium treleasei	Trelease's larkspur	-	INV	G3	S3
Dichanthelium helleri	rosette grass	-	INV	GNR	SNR
Didiplis diandra	water-purslane	-	INV	G5	S1S3
Draba aprica	open-ground whitlow-grass	-	ST	G3	S2
Dulichium arundinaceum var. arundinaceum	three-way sedge	-	INV	G5T5	S2S3
✓ Elymus churchii	Church's wild rye	-	INV	G3	S2?
Elymus glaucus ssp. mackenzii	Mackenzie's blue wild rye	-	INV	G5TNR	S1
✓ Elymus riparius*	river-bank wild rye	-	INV	G5	S1S2
Epilobium coloratum	willow-herb	-	INV	G5	S1
Euthamia graminifolia	grass-leaf flat-top goldenrod	-	INV	G5	S1
Gentiana puberulenta	downy gentian	-	INV	G4G5	S2
Gillenia trifoliata	Bowman's-root	-	INV	G4G5	S1
✓ Helianthus pauciflorus ssp. pauciflorus	prairie sunflower	-	INV	G5T5?	S1

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
Heuchera villosa var. arkansana	Arkansas alumroot	-	INV	G5T3Q	S3
Hexalectris spicata var. spicata	crested-coralroot	-	INV	G5T4T5	S2
Hieracium scabrum	rough hawkweed	-	INV	G5	S2
✓ Humulus lupulus var. pubescens*	wild hop	-	INV	G5T4?	S1S2
Koeleria macrantha	prairie June grass	-	INV	G5	S2
Limnodea arkansana	Ozark grass	-	INV	G4?	S1
✓ Lithospermum incisum	fringed puccoon	-	INV	G5	S2S3
Lysimachia hybrida	lowland yellow-loosestrife	-	INV	G5	S1
Malvastrum hispidum	yellow false mallow	-	INV	G3G5	S2
Mentzelia oligosperma	stick-leaf	-	INV	G4	S1
Mimulus floribundus	yellow monkey-flower	-	INV	G5	S2S3
Mimulus ringens var. ringens	Allegheny monkey-flower	-	INV	G5T5	S1S2
Minuartia drummondii	Drummond's sandwort	-	INV	G5	S2S3
Muhlenbergia glaberrima	inland muhly	-	INV	G4?	S1
Nemastylis nuttallii	Nuttall's pleat-leaf	-	INV	G3	S2
✓ Osmorhiza claytonii	hairy sweet-cicely	-	INV	G5	S1S3
Paspalum boscianum	bull paspalum	-	INV	G5	S1
✓ Perideridia americana	eastern yampah	-	INV	G4	S2
Phlox amplifolia	broad-leaf phlox	-	INV	G3G5	S1
Phlox bifida	sand phlox	-	INV	G5?	S3
✓ Physalis missouriensis*	Missouri ground-cherry	-	INV	G2	S1
Physalis pumila	prairie ground-cherry	-	INV	G5	S1
Physaria filiformis	Missouri bladderpod	LT	INV	G3	S1
Plantago patagonica	woolly plantain	-	INV	G5	S2
Plantago wrightiana	Wright's plantain	-	INV	G5	S1
Polygala incarnata	pink milkwort	-	INV	G5	S1S2
✓ Prenanthes aspera	prairie rattlesnake-root	-	INV	G4?	S2S3
Rhynchospora macrostachya	prairie horned beaksedge	-	INV	G4	S2
Sagittaria rigida	stiff arrowhead	-	INV	G5	SH
Salix eriocephala	Missouri willow	-	INV	G5	S1
Schedonnardus paniculatus	tumble grass	-	INV	G5	S2
✓ Silene regia	royal catchfly	-	ST	G3	S2
Silphium integrifolium var. laeve	rosinweed	-	INV	G5T4?	S1
Solidago ptarmicoides	white flat-top goldenrod	-	INV	G5	S1S2
Tradescantia ozarkana	Ozark spiderwort	-	INV	G3	S3
Trifolium carolinianum	Carolina clover	-	INV	G5	S1?
Trillium ozarkanum	Ozark trillium	-	INV	G3	S3
Valerianella ozarkana	Ozark comsalad	-	INV	G3	S3
Veratrum virginicum	bunchflower	-	INV	G5	S2
Viola pedatifida	prairie violet	-	INV	G5	S2

#### Special Elements-Natural Communities

Ozark-Ouachita Dry Oak Woodland	-	INV	GNR	S5
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#### Special Elements-Other

Colonial nesting site, water birds	-	INV	GNR	SNR
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★ - These elements of special concern have been recorded within a 1-mile radius of the study area.

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

\* - These elements of special concern have been recorded in or along the West Fork of the White River

# APPENDIX D

## Stream and Wetland Assessment



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October 4, 2023

Sarah Chitwood  
Chief Regulatory Division  
U.S. Army Corps of Engineers  
ATTN: CESWL-RD, Rm 6323  
700 W. Capitol Avenue  
Federal Building 7th Floor  
Little Rock, AR 72203  
#501-324-5295; CESWL-Regulatory@usace.army.mil

Re: Taxiway E Extension – Drake Field Airport (FYV)  
Fayetteville, Washington County, Arkansas  
Preliminary Wetland Delineation Report & PJD Request

Ms. Chitwood,

Drake Field Airport (FYV) in Fayetteville, Washington County, AR (see **Figure 1**) is proposing the extension of Taxiway E southward toward the Runway 34 end of the airfield. This project will include grading, drainage, pavement section construction, lighting, and signage. Design of the project shall be completed under an Airport Improvement Program (AIP) grant in 2023. The proposed extension will require grading in emergent wetlands and the addition of reinforced pipe culvert in a tributary to Ward Slough. Garver, LLC has been retained to conduct a wetland delineation and develop National Environmental Policy Act (NEPA) documents. This wetland delineation report summarizes our investigation and requests a Preliminary Jurisdictional Determination (PJD) in concurrence with our findings.

### **Regulatory Basis**

Discharges of dredged or fill material into Waters of the United States are regulated under Section 404 of the Clean Water Act. Any such action proposed in wetlands or other Waters of the U.S. are subject to review by the U.S. Army Corps of Engineers (USACE) and other federal and state agencies and require authorization by USACE. For jurisdictional purposes, USACE and the U.S. Environmental Protection Agency (EPA) jointly define wetlands as follows: *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (USACE 1987).*

### **Methodology**

The U.S. Fish and Wildlife Service (USFWS) in cooperation with Cowardin, et al. (1979), have identified a classification system that is widely accepted by the USACE in relation to classifying wetland and stream habitats (i.e., Classification of Wetlands and Deepwater Habitats of the United States). Wetlands and



streams in the study area have been identified utilizing the methodology presented in this classification system.

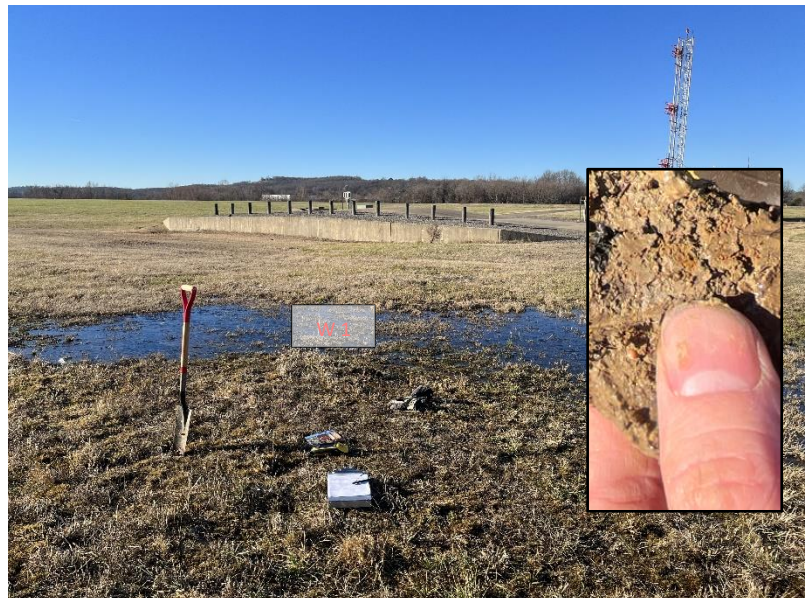
Prior to the site visit, Garver performed a desktop review of the approximately 36-acre study area (**Figure 2**). The review included the National Wetlands Inventory (NWI) produced by the USFWS. and U.S. Geological Survey (USGS) topographic quadrangle maps and the National Hydrography Database (NHD) for the presence of streams and other waterbodies. Federal Emergency Management Agency (FEMA) Floodplain data and Natural Resources Conservation Service (NRCS) soil data were also reviewed. A site visit was conducted on November 30, 2022. According to the Fayetteville Drake Field weather station (USW00093993) in Fayetteville, AR, the area received approximately 2.81 inches of rainfall within the previous week of the site visit. Inquiry into the USACE's Antecedent Precipitation Tool demonstrated normal precipitation conditions for the area. Other conditions on site appeared to be normal for an airfield; however, there are disturbances to vegetation and hydrology due to groundskeeping and drainage improvements, respectively. According to the NRCS Web Soil Survey, a total of three soil map units exists within the study area. Each unit is categorized as hydric soil and includes Leaf Silt Loam, Savannah fine sandy loam, 1 to 3 percent slopes, and Toloka silt loam, 0 to 1 percent slopes, are present within the study area (**Figure 2**). Additionally, a review of the NWI Mapper exhibited no wetlands while FEMA flood maps exhibited 100-year floodplain (Zone AE) in the study area (**Figure 2**).

## **Results**

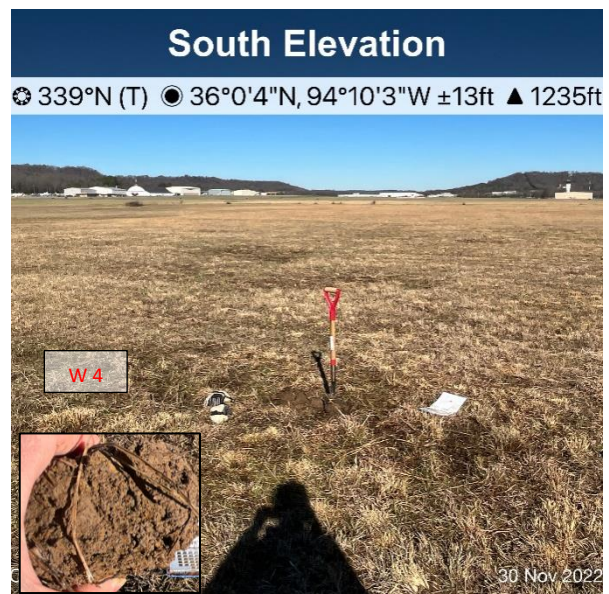
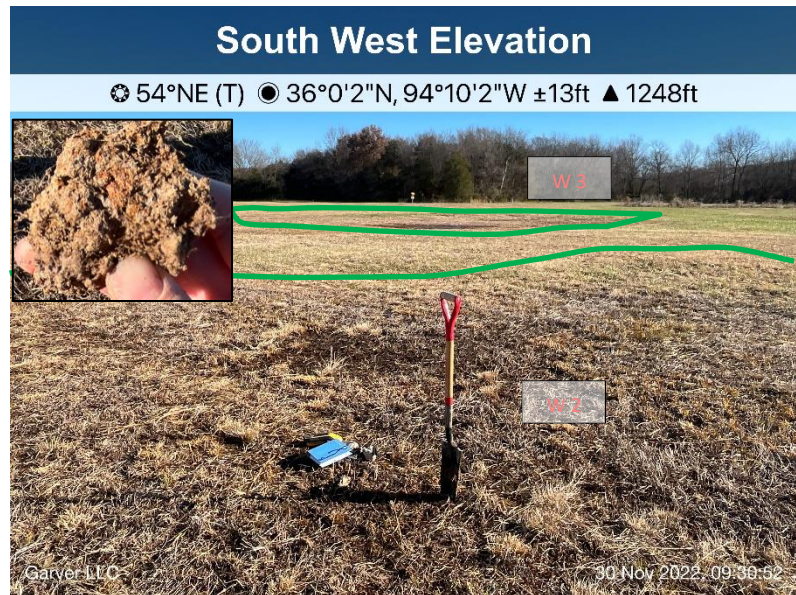
Eight emergent wetlands (W) and one stream were delineated within the study area (**Figure 3**). The wetlands, associated with a high water table and floodplain, convey water east to Ward Slough by way of surface runoff, streams, and the airport's storm water drainage system. Although not indicated on USGS maps, one intermittent stream (OW) was identified. Below are details regarding each feature delineated at the site with summarized data in **Table 1** and **Table 2**. Additionally, wetland data points (data forms attached) and observation points were recorded to characterize and define the boundaries between wetland and upland features.

### **Wetlands 1-6 ►**

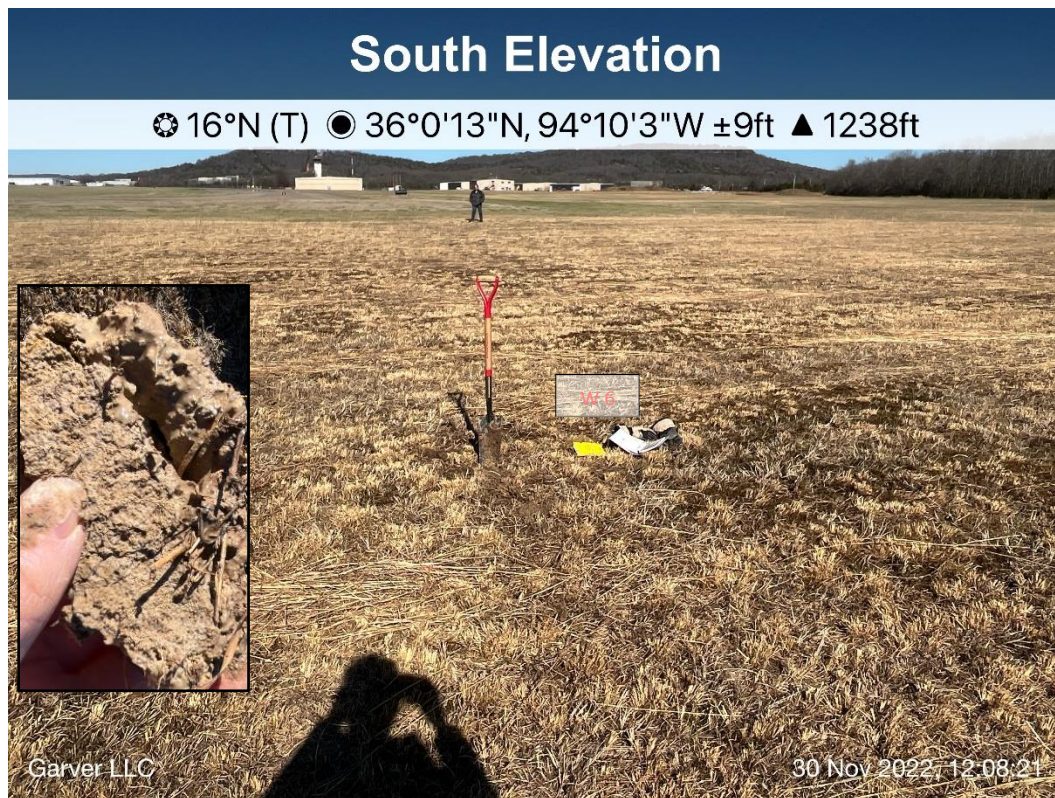
Wetlands 1-6 are classified as a PEM1E (Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated Wetland). The wetlands, all very similar, were present within microlows and concave surfaces. Wetland hydrology is the result of stormwater runoff, high water table, poor hydrologic relief, and poorly drained soils as described by NRCS. Observed primary hydrology indicators included surface water at some locations, high water table, and saturated soils. Vegetation was mowed and lacked diversity. Dominant vegetation observed included



yellow bristly grass (*Setaria pumila*) and flatsedge (*Cyperus* sp.). Sphagnum moss was common within wetlands while Bermudagrass (*Cynodon dactylon*) and broom-sedge (*Andropogon virginicus*) dominated the upland areas. Each wetland exhibited hydric soils (depleted matrix) as shown in insets within wetland photos. A total of 12.84 acres of Wetlands 1-6 occur within the study area.







#### Wetland 7 ►

Wetland 7 is classified as a PEM1E and is an artificial swale which drains water from airport property. Observed hydrology indicators included drainage patterns, geomorphic position, and a positive FAC-Neutral Test. Dominant vegetation observed included fall panic grass (*Panicum dichotomiflorum*). The inset photo (right) shows hydric soils (depleted matrix) from Wetland 7. Approximately 0.02 ac of Wetland 1 occurs within the study area.





### Wetland 8 ►

Wetland 8 is classified as a PEM1E and is a linear fringe wetland associated with OW 1 and a highwater table. Observed primary hydrology indicators included surface water, high water table, and saturated soils. Dominant vegetation within the sample plot included tapered rosette grass (*Dichanthelium acuminatum*). The inset photo (right) shows hydric soils (depleted matrix) from Wetland 1. Approximately 0.58 ac of Wetland 8 occurs within the study area. This feature is likely subject to regulation by the USACE due to surface hydrology connection to OW 1 and thence to Ward Slough, a USGS-mapped perennial stream.



### OW 1 ►

Other Water 1, not USGS-mapped, is an intermittent stream which flows east through the project area. Within the study area, OW 1 originates from a reinforced concrete pipe and flows east to Ward Slough and was flowing at the time of investigation. The stream substrate consists of silt and gravel, and the average OHWM is 4 ft wide by 0.25 ft deep. Fish, a *Cyprinid* sp., were present, and riparian vegetation included broad-leaf cattail (*Typha latifolia*), Bermudagrass, lamp rush (*Juncus effusus*), tapered rosette grass, and yellow bristly grass. A total of 823 linear feet (0.09 acre) are present within the study area. This feature is likely subject to regulation by the USACE due to surface hydrology connection to Ward Slough, a USGS-mapped perennial stream.





**Table 1: Preliminary Wetlands**

Wetland	Cowardin Classification	Latitude, Longitude	Area (acre) within Study Area
<b>Wetland 1</b>	PEM1E	35.999910°, -94.167664°	0.34
<b>Wetland 2</b>	PEM1E	36.000704°, -94.167231°	0.76
<b>Wetland 3</b>	PEM1E	36.000898°, -94.167015°	0.03
<b>Wetland 4</b>	PEM1E	36.001678°, -94.166841°	2.94
<b>Wetland 5</b>	PEM1E	36.001899°, -94.168207°	0.60
<b>Wetland 6</b>	PEM1E	36.003412°, -94.167882°	8.17
<b>Wetland 7</b>	PEM1E	36.002625°, -94.166963°	0.02
<b>Wetland 8</b>	PEM1E	36.000693°, -94.166394°	0.58
		<b>Total</b>	<b>13.44</b>

**Table 2: Preliminary Other Waters**

Other Water (OW) Identification No.	Stream Classification	Latitude, Longitude	Ordinary High Water Mark (width x depth)	Length within Study Area (Linear Feet)	Area (acre) within Study Area
<b>OW 1</b>	Int.	36.002539°, -94.167522°	4 ft. x 0.25 ft.	823	0.09
			<b>Total</b>	<b>823</b>	<b>0.09</b>

## **Conclusion**

As described in this report, a total of 13.44 acres of wetlands and 823 linear feet of stream were identified within the study area. No other aquatic features were located within the study area. In total, 2.47 acres of emergent wetlands will be filled and 212 linear feet or 0.02 acre of intermittent stream will be piped to accommodate the taxiway extension. These features are likely regulated by the USACE due to their position within a floodplain and an occasional surface water connection to Ward Slough. We respectfully request USACE issue a PJD and in concurrence with these preliminary determinations.

Enclosed with this wetland report are several attachments to aid in your review, including site maps, data forms, and weather data. Please call me at 479-879-9746 or email me at JCMarshall@GarverUSA.com if you have any questions.

Sincerely,

GARVER



Colby Marshall  
Environmental Scientist

U.S. Army Corps of Engineers  
October 4, 2023  
Page 7 of 7

cc: Adam White, PE - Garver  
Ryan Mountain, PWS – Garver

Attachments: Figure 1 - Site Location Map  
Figure 2 - NRCS Soil & FEMA Flood Detail Map  
Figure 3 - Wetland Delineation & NWI Map  
Wetland Data Forms  
Weather Data

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region</b> See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Drake Field Airport (FYV) Taxiway E Extension City/County: Fayetteville / Washington Sampling Date: 11/30/2022  
 Applicant/Owner: City of Fayetteville, AR State: AR Sampling Point: DP 1  
 Investigator(s): Colby Marshall, Joe Rujawitz Section, Township, Range: S4 T15N R30W  
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <1  
 Subregion (LRR or MLRA): LRR N Lat: 35.999778° Long: -94.167581° Datum: WGS 84  
 Soil Map Unit Name: Savannah fine sandy loam, 1 to 3 percent slopes NWI classification: n/a  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes      No      (If no, explain in Remarks.)  
 Are Vegetation   X  , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes   X   No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>  X  </u> No <u>    </u> Hydric Soil Present? Yes <u>  X  </u> No <u>    </u> Wetland Hydrology Present? Yes <u>  X  </u> No <u>    </u>	<table style="width: 100%;"> <tr> <td style="width: 60%;"><b>Is the Sampled Area within a Wetland?</b></td> <td style="width: 40%;">Yes <u>  X  </u> No <u>    </u></td> </tr> </table>	<b>Is the Sampled Area within a Wetland?</b>	Yes <u>  X  </u> No <u>    </u>
<b>Is the Sampled Area within a Wetland?</b>	Yes <u>  X  </u> No <u>    </u>		
Remarks: Site mowed. Site meets all three wetland criteria and is in a wetland.			

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <u>  X  </u> Surface Water (A1)  <u>  X  </u> High Water Table (A2)  <u>  X  </u> Saturation (A3)  <u>    </u> Water Marks (B1)  <u>    </u> Sediment Deposits (B2)  <u>    </u> Drift Deposits (B3)  <u>    </u> Algal Mat or Crust (B4)  <u>    </u> Iron Deposits (B5)  <u>    </u> Inundation Visible on Aerial Imagery (B7)  <u>    </u> Water-Stained Leaves (B9)  <u>    </u> Aquatic Fauna (B13)           </div> <div style="width: 45%;"> <u>    </u> True Aquatic Plants (B14)  <u>    </u> Hydrogen Sulfide Odor (C1)  <u>    </u> Oxidized Rhizospheres on Living Roots (C3)  <u>    </u> Presence of Reduced Iron (C4)  <u>    </u> Recent Iron Reduction in Tilled Soils (C6)  <u>    </u> Thin Muck Surface (C7)  <u>    </u> Other (Explain in Remarks)           </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>    </u> Surface Soil Cracks (B6) <u>    </u> Sparsely Vegetated Concave Surface (B8) <u>    </u> Drainage Patterns (B10) <u>    </u> Moss Trim Lines (B16) <u>    </u> Dry-Season Water Table (C2) <u>    </u> Crayfish Burrows (C8) <u>  X  </u> Saturation Visible on Aerial Imagery (C9) <u>    </u> Stunted or Stressed Plants (D1) <u>  X  </u> Geomorphic Position (D2) <u>  X  </u> Shallow Aquitard (D3) <u>    </u> Microtopographic Relief (D4) <u>    </u> FAC-Neutral Test (D5)		
<b>Field Observations:</b> Surface Water Present? Yes <u>  X  </u> No <u>    </u> Depth (inches): <u>  1  </u> Water Table Present? Yes <u>  X  </u> No <u>    </u> Depth (inches): <u>  2  </u> Saturation Present? Yes <u>  X  </u> No <u>    </u> Depth (inches): <u>  0  </u> (includes capillary fringe)	<table style="width: 100%;"> <tr> <td style="width: 60%;"><b>Wetland Hydrology Present?</b></td> <td style="width: 40%;">Yes <u>  X  </u> No <u>    </u></td> </tr> </table>	<b>Wetland Hydrology Present?</b>	Yes <u>  X  </u> No <u>    </u>
<b>Wetland Hydrology Present?</b>	Yes <u>  X  </u> No <u>    </u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Site meets wetland hydrology criteria.			

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: DP 1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum</b> (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum</b> (Plot size: <u>5'</u> )																				
1. <i>Setaria pumila</i>	45	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Carex sp.*</i>	10	No	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
55 =Total Cover																				
50% of total cover: <u>28</u> 20% of total cover: <u>11</u>																				
<b>Woody Vine Stratum</b> (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Hydrophytic Vegetation Present?</b> <b>Yes</b> <u>X</u> <b>No</b> _____																				

Remarks: (Include photo numbers here or on a separate sheet.)  
 \*Of the 92 species of Carex listed in the 2020 USACE Plants List for EMP Region in AR, 82% are FAC or wetter with the majority being FACW. Remainder of ground cover was sphagnum moss. Site maintained by mowing. Site meets all three wetland criteria and is in a wetland.



## SOIL

Sampling Point: DP 1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR 3/2	100					Loamy/Clayey	
1-3	10YR 4/3	96	10YR 4/6	4	C	M	Loamy/Clayey	Distinct redox concentrations
3-5	10YR 4/2	70	10YR 4/6	4	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (MLRA 136)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 122, 136)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147, 148)
<input type="checkbox"/> Dark Surface (S7)	

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Red Parent Material (F21) (outside MLRA 127, 147, 148)
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: bedrock

Depth (inches): 5

Hydric Soil Present? Yes ☒ No ☐**Remarks:**

3-5" layer also contains 26% 10YR 4/3 matrix color. Site meets hydric soil criteria.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region</b> See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Drake Field Airport (FYV) Taxiway E Extension City/County: Fayetteville / Washington Sampling Date: 11/30/2022

Applicant/Owner: City of Fayetteville, AR State: AR Sampling Point: DP 2

Investigator(s): Colby Marshall, Joe Rujawitz Section, Township, Range: S4 T15N R30W

Landform (hillside, terrace, etc.): shoulder slope Local relief (concave, convex, none): convex Slope (%): <1

Subregion (LRR or MLRA): LRR N Lat: 35.999817° Long: -94.167504° Datum: WGS 84

Soil Map Unit Name: Savannah fine sandy loam, 1 to 3 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)

Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No     

Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
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Remarks:  
 Site mowed. Site does not meet all three criteria and is not in a wetland.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>    </u> Surface Water (A1)  <u>X</u> High Water Table (A2)  <u>X</u> Saturation (A3)  <u>    </u> Water Marks (B1)  <u>    </u> Sediment Deposits (B2)  <u>    </u> Drift Deposits (B3)  <u>    </u> Algal Mat or Crust (B4)  <u>    </u> Iron Deposits (B5)  <u>    </u> Inundation Visible on Aerial Imagery (B7)  <u>    </u> Water-Stained Leaves (B9)  <u>    </u> Aquatic Fauna (B13)           </div> <div style="width: 48%;"> <u>    </u> True Aquatic Plants (B14)  <u>    </u> Hydrogen Sulfide Odor (C1)  <u>    </u> Oxidized Rhizospheres on Living Roots (C3)  <u>    </u> Presence of Reduced Iron (C4)  <u>    </u> Recent Iron Reduction in Tilled Soils (C6)  <u>    </u> Thin Muck Surface (C7)  <u>    </u> Other (Explain in Remarks)           </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>    </u> Surface Soil Cracks (B6) <u>    </u> Sparsely Vegetated Concave Surface (B8) <u>    </u> Drainage Patterns (B10) <u>    </u> Moss Trim Lines (B16) <u>    </u> Dry-Season Water Table (C2) <u>    </u> Crayfish Burrows (C8) <u>    </u> Saturation Visible on Aerial Imagery (C9) <u>    </u> Stunted or Stressed Plants (D1) <u>    </u> Geomorphic Position (D2) <u>    </u> Shallow Aquitard (D3) <u>    </u> Microtopographic Relief (D4) <u>    </u> FAC-Neutral Test (D5)
--	--

<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>X</u> No <u>    </u> Depth (inches): <u>12</u> Saturation Present? Yes <u>X</u> No <u>    </u> Depth (inches): <u>10</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No <u>    </u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Site meets wetland hydrology criteria.

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: DP 2

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5'</u> )																				
1. <i>Cynodon dactylon</i>	60	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is $\leq 3.0^1$ <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Setaria pumila</i>	30	Yes	FAC																	
3. <i>Andropogon virginicus</i>	10	No	FACU																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ 100 = Total Cover																				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																				
(Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (Include photo numbers here or on a separate sheet.) Site does not meet hydrophytic vegetation criteria.																				

**Definitions of Four Vegetation Strata:**  
  
**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  
  
**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  
  
**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  
  
**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**      Yes             No   X

## SOIL

Sampling Point: DP 2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 3/2	100					Loamy/Clayey	
3-10	10YR 3/2	90					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10) (**LRR N**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)  
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)  
☐ Loamy Mucky Mineral (F1) (**MLRA 136**)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)  
☐ Umbric Surface (F13) (**MLRA 122, 136**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)  
☐ Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

☐ 2 cm Muck (A10) (**MLRA 147**)  
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)  
☐ Red Parent Material (F21) (**outside MLRA 127, 147, 148**)  
☐ Very Shallow Dark Surface (F22)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

**Remarks:**

3-10" layer also contains 10% 10YR 5/3 matrix color. Site does not meet hydric soil criteria.



<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region</b> See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Drake Field Airport (FYV) Taxiway E Extension City/County: Fayetteville / Washington Sampling Date: 11/30/2022  
 Applicant/Owner: City of Fayetteville, AR State: AR Sampling Point: DP3  
 Investigator(s): Colby Marshall, Joe Rujawitz Section, Township, Range: S4 T15N R30W  
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <1  
 Subregion (LRR or MLRA): LRR N Lat: 36.000595° Long: -94.167416° Datum: WGS 84  
 Soil Map Unit Name: Leaf silt loam NWI classification: n/a  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Remarks: Site mowed. Site meets all three criteria and is in a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>    </u> Surface Water (A1) <u>    </u> True Aquatic Plants (B14) <u>X</u> High Water Table (A2) <u>    </u> Hydrogen Sulfide Odor (C1) <u>X</u> Saturation (A3) <u>    </u> Oxidized Rhizospheres on Living Roots (C3) <u>    </u> Water Marks (B1) <u>    </u> Presence of Reduced Iron (C4) <u>    </u> Sediment Deposits (B2) <u>    </u> Recent Iron Reduction in Tilled Soils (C6) <u>    </u> Drift Deposits (B3) <u>    </u> Thin Muck Surface (C7) <u>    </u> Algal Mat or Crust (B4) <u>    </u> Other (Explain in Remarks) <u>    </u> Iron Deposits (B5) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u>    </u> Water-Stained Leaves (B9) <u>    </u> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <u>    </u> Surface Soil Cracks (B6) <u>    </u> Sparsely Vegetated Concave Surface (B8) <u>    </u> Drainage Patterns (B10) <u>    </u> Moss Trim Lines (B16) <u>    </u> Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) <u>    </u> Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) <u>    </u> Shallow Aquitard (D3) <u>    </u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>X</u> No <u>    </u> Depth (inches): <u>8</u> Saturation Present? Yes <u>X</u> No <u>    </u> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No <u>    </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Site meets wetland hydrology criteria.	

Sampling Point: DP3

Eastern Mountains and Piedmont – Version 2.0

## SOIL

Sampling Point: DP3**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 4/1	80	10YR 4/6	6	C	PL/M	Loamy/Clayey	Prominent redox concentrations
5-10	10YR 4/1	92	10YR 3/6	8	C	PL	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>MLRA 136</b> )
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> )
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 122, 136</b> )
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147, 148</b> )
<input type="checkbox"/> Dark Surface (S7)	

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )
<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> ( <b>MLRA 136, 147</b> )
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> ( <b>outside MLRA 127, 147, 148</b> )
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_Hydric Soil Present? Yes ☒ No ☐**Remarks:**

5-10" layer also contains 14% 10YR 4/3. Site meets hydric soil criteria.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region</b> See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Drake Field Airport (FYV) Taxiway E Extension City/County: Fayetteville / Washington Sampling Date: 11/30/2022

Applicant/Owner: City of Fayetteville, AR State: AR Sampling Point: DP4

Investigator(s): Colby Marshall, Joe Rujawitz Section, Township, Range: S4 T15N R30W

Landform (hillside, terrace, etc.): shoulder slope Local relief (concave, convex, none): convex Slope (%): <1

Subregion (LRR or MLRA): LRR N Lat: 36.000603° Long: -94.167305° Datum: WGS 84

Soil Map Unit Name: Leaf silt loam NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)

Are Vegetation X, Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X No       

Are Vegetation       , Soil       , or Hydrology        naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>      </u> Hydric Soil Present? Yes <u>      </u> No <u>X</u> Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>      </u> No <u>X</u>
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Remarks:  
 Site mowed. Site does not meet all three criteria and is not in a wetland.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <u>      </u> Surface Water (A1)  <u>      </u> High Water Table (A2)  <u>      </u> Saturation (A3)  <u>      </u> Water Marks (B1)  <u>      </u> Sediment Deposits (B2)  <u>      </u> Drift Deposits (B3)  <u>      </u> Algal Mat or Crust (B4)  <u>      </u> Iron Deposits (B5)  <u>      </u> Inundation Visible on Aerial Imagery (B7)  <u>      </u> Water-Stained Leaves (B9)  <u>      </u> Aquatic Fauna (B13)           </div> <div style="width: 48%;"> <u>      </u> True Aquatic Plants (B14)  <u>      </u> Hydrogen Sulfide Odor (C1)  <u>      </u> Oxidized Rhizospheres on Living Roots (C3)  <u>      </u> Presence of Reduced Iron (C4)  <u>      </u> Recent Iron Reduction in Tilled Soils (C6)  <u>      </u> Thin Muck Surface (C7)  <u>      </u> Other (Explain in Remarks)           </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>      </u> Surface Soil Cracks (B6) <u>      </u> Sparsely Vegetated Concave Surface (B8) <u>      </u> Drainage Patterns (B10) <u>      </u> Moss Trim Lines (B16) <u>      </u> Dry-Season Water Table (C2) <u>      </u> Crayfish Burrows (C8) <u>      </u> Saturation Visible on Aerial Imagery (C9) <u>      </u> Stunted or Stressed Plants (D1) <u>      </u> Geomorphic Position (D2) <u>      </u> Shallow Aquitard (D3) <u>      </u> Microtopographic Relief (D4) <u>      </u> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> Water Table Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> Saturation Present? Yes <u>      </u> No <u>X</u> Depth (inches): <u>      </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>      </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Site does not meet wetland hydrology criteria.



**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: DP4

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
50% of total cover: _____		20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: _____)</b>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: _____		20% of total cover: _____																		
<b>Herb Stratum (Plot size: 5')</b>																				
1. <i>Andropogon virginicus</i>	70	Yes	FACU	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.																
2. <i>Setaria pumila</i>	15	No	FAC																	
3. <i>Plantago lanceolata</i>	5	No	UPL																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
90 =Total Cover																				
50% of total cover: 45		20% of total cover: 18																		
<b>Woody Vine Stratum (Plot size: _____)</b>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (Include photo numbers here or on a separate sheet.) <5% mix of unknown herbs also present. Vegetation disturbed by mowing. Site does not meet hydrophytic vegetation criteria.																				

## SOIL

Sampling Point: DP4**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-9	10YR 3/2	100					Loamy/Clayey	top soil
9-12	10YR 5/2	98	10YR 5/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>MLRA 136</b> )
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> )
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 122, 136</b> )
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147, 148</b> )
<input type="checkbox"/> Dark Surface (S7)	

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )
<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> ( <b>MLRA 136, 147</b> )
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> ( <b>outside MLRA 127, 147, 148</b> )
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_Hydric Soil Present? Yes \_\_\_\_\_ No X

Remarks:

Site does not meet hydric soil criteria.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region</b> See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Drake Field Airport (FYV) Taxiway E Extension City/County: Fayetteville / Washington Sampling Date: 11/30/2022  
 Applicant/Owner: City of Fayetteville, AR State: AR Sampling Point: DP5  
 Investigator(s): Colby Marshall, Joe Rujawitz Section, Township, Range: S4 T15N R30W  
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <1  
 Subregion (LRR or MLRA): LRR N Lat: 36.001386° Long: -94.167547° Datum: WGS 84  
 Soil Map Unit Name: Leaf silt loam NWI classification: n/a  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> <b>Is the Sampled Area within a Wetland?</b> </td> <td style="width: 40%; padding: 5px;"> <b>Yes <u>X</u> No <u>    </u></b> </td> </tr> </table>	<b>Is the Sampled Area within a Wetland?</b>	<b>Yes <u>X</u> No <u>    </u></b>
<b>Is the Sampled Area within a Wetland?</b>	<b>Yes <u>X</u> No <u>    </u></b>		
Remarks: Site mowed. DP in transition zone. Site meets all three criteria and is in a wetland.			

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <u>    </u> Surface Water (A1)  <u>    </u> High Water Table (A2)  <u>  X  </u> Saturation (A3)  <u>    </u> Water Marks (B1)  <u>    </u> Sediment Deposits (B2)  <u>    </u> Drift Deposits (B3)  <u>    </u> Algal Mat or Crust (B4)  <u>    </u> Iron Deposits (B5)  <u>    </u> Inundation Visible on Aerial Imagery (B7)  <u>    </u> Water-Stained Leaves (B9)  <u>    </u> Aquatic Fauna (B13)         </div> <div style="width: 45%;"> <u>    </u> True Aquatic Plants (B14)  <u>    </u> Hydrogen Sulfide Odor (C1)  <u>    </u> Oxidized Rhizospheres on Living Roots (C3)  <u>    </u> Presence of Reduced Iron (C4)  <u>    </u> Recent Iron Reduction in Tilled Soils (C6)  <u>    </u> Thin Muck Surface (C7)  <u>    </u> Other (Explain in Remarks)         </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <u>    </u> Surface Soil Cracks (B6) <u>    </u> Sparsely Vegetated Concave Surface (B8) <u>    </u> Drainage Patterns (B10) <u>    </u> Moss Trim Lines (B16) <u>    </u> Dry-Season Water Table (C2) <u>    </u> Crayfish Burrows (C8) <u>  X  </u> Saturation Visible on Aerial Imagery (C9) <u>    </u> Stunted or Stressed Plants (D1) <u>  X  </u> Geomorphic Position (D2) <u>    </u> Shallow Aquitard (D3) <u>    </u> Microtopographic Relief (D4) <u>    </u> FAC-Neutral Test (D5)		
<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>  X  </u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>  X  </u> Depth (inches): <u>    </u> Saturation Present? Yes <u>  X  </u> No <u>    </u> Depth (inches): <u>  8  </u> (includes capillary fringe)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> <b>Wetland Hydrology Present?</b> </td> <td style="width: 40%; padding: 5px;"> <b>Yes <u>  X  </u> No <u>    </u></b> </td> </tr> </table>	<b>Wetland Hydrology Present?</b>	<b>Yes <u>  X  </u> No <u>    </u></b>
<b>Wetland Hydrology Present?</b>	<b>Yes <u>  X  </u> No <u>    </u></b>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Site meets wetland hydrology criteria.			

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: DP5

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum</b> (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum</b> (Plot size: <u>5'</u> )																				
1. <u>Setaria pumila</u>	90	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Andropogon virginicus</u>	10	No	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ 100 = Total Cover																				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																				
<b>Woody Vine Stratum</b> (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Hydrophytic Vegetation Present?</b> <b>Yes</b> <u>X</u> <b>No</b> _____																				
Remarks: (Include photo numbers here or on a separate sheet.) <5% ground cover is sphagnum moss. Andropogon virginicus become more dominant away from DP. Site meets hydrophytic vegetation criteria.																				



## SOIL

Sampling Point: DP5

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 4/2	85	10YR 4/6	5	C	PL	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) ( <b>MLRA 136</b> )
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> )
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 122, 136</b> )
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147, 148</b> )
<input type="checkbox"/> Dark Surface (S7)	

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )
<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> ( <b>MLRA 136, 147</b> )
<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> ( <b>outside MLRA 127, 147, 148</b> )
<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_
Hydric Soil Present? Yes ☒ No ☐**Remarks:**

0-8" layer also contains 10% 10YR 5/1 matrix. Site meets hydric soil criteria.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region</b> See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp: 11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Drake Field Airport (FYV) Taxiway E Extension City/County: Fayetteville / Washington Sampling Date: 11/30/2022  
 Applicant/Owner: City of Fayetteville, AR State: AR Sampling Point: DP 6  
 Investigator(s): Colby Marshall, Joe Rujawitz Section, Township, Range: S4 T15N R30W  
 Landform (hillside, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR or MLRA): LRR N Lat: 36.000620° Long: -94.166266° Datum: WGS 84  
 Soil Map Unit Name: Leaf silt loam NWI classification: n/a  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Remarks: Site is mowed. Site meets all three criteria and is in a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input checked="" type="checkbox"/> Surface Water (A1)  <input checked="" type="checkbox"/> High Water Table (A2)  <input checked="" type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)         </div> <div style="width: 45%;"> <input type="checkbox"/> True Aquatic Plants (B14)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No <u>    </u> Depth (inches): <u>3</u> Water Table Present? Yes <u>X</u> No <u>    </u> Depth (inches): <u>2</u> Saturation Present? Yes <u>X</u> No <u>    </u> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No <u>    </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks: Surface water present nearby. Site meets wetland hydrology criteria.	

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: DP 6

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
50% of total cover: _____		20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: _____)</b>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5'</u>)</b>																				
1. <i>Panicum dichotomiflorum</i>	100	Yes	FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>																		
<b>Woody Vine Stratum (Plot size: _____)</b>																				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation is disturbed by mowing. Site meets hydrophytic vegetation criteria.																				

# APPENDIX E

## Public Involvement, Comments, and Responses

**NOTICE OF OPPORTUNITY TO REVIEW DRAFT ENVIRONMENTAL  
ASSESSMENT AND/OR REQUEST FOR A PUBLIC HEARING**

**City of Fayetteville, Arkansas  
Drake Field Airport (FYV) Taxiway E Extension  
Fayetteville, Washington County, Arkansas**

The City of Fayetteville, Arkansas is providing public notice of the availability of the draft Environmental Assessment (EA) for the Drake Field Airport (FYV) Taxiway E Extension.

The purpose of the Proposed Action is to extend the partial parallel taxiway on the east side of Runway 16/34. Selection criteria used to evaluate the Proposed Action (Alternative 1) and other alternatives included wetland and floodplain impacts.

The draft EA is available as a hardcopy or online for public review and comment for 30 days through **Tuesday, April 2, 2024**.

- Website: [FYVTaxiwayE.AirportPlans.com](https://FYVTaxiwayE.AirportPlans.com)
- Hard Copy Location: Drake Field Terminal Building, 4500 S. School Avenue, Suite F, Fayetteville, AR 72701 (Open 8 a.m. to 5 p.m. Monday through Friday)

Use the following contact information to provide comments. Any comments should be received or postmarked by **Tuesday, April 2, 2024**.

Kyle Bennett  
2049 East Joyce Boulevard, Suite 400  
Fayetteville, AR 72703  
479.287.4614  
[KABennett@GarverUSA.com](mailto:KABennett@GarverUSA.com)

A public hearing will only be held if requested. Those wishing to request a public hearing on the project must make their request by email or letter no later than **Tuesday, April 2, 2024**, which is 30 days after the publication of this notice. In the event a request for a public hearing is made by the specified date and FAA approves, a Notice of Public Hearing will be published in this same newspaper.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

Anyone needing project information or special accommodations under the Americans with Disabilities Act (ADA) is encouraged to contact Caitlin Hetzel, at (501) 823-0730, mail at Garver, Attn: Caitlin Hetzel, 4701 Northshore Drive, North Little Rock, AR 72118, or email at [PublicInvolvement@GarverUSA.com](mailto:PublicInvolvement@GarverUSA.com). Hearing or speech impaired, please contact the Arkansas Relay System at (Voice/TTY 711). Requests should be made at least four days prior to the end of the comment period. Free language assistance for Limited English Proficient individuals is available upon request.





Account #: STNG3

Company: NWC GARVER

4701 NORTSHORE DR

NORTH LITTLE ROCK, AR 72118-5325

Ad number #: 380547

PO #:

Matter of: NOTICE OF OPPORTUNITY

### AFFIDAVIT • STATE OF ARKANSAS

I, Carla Gardner, do solemnly swear that I am the Finance Director of the **NWA Democrat Gazette**, a daily newspaper printed and published in WASHINGTON/BENTON county, State of ARKANSAS; that I was so related to this publication at and during the publication of the annexed legal advertisement in the matter of :

#### NOTICE OF OPPORTUNITY

Pending in the court, in said County, and at the dates of the several publications of said advertisement stated below, and that during said periods and at said dates, said newspaper was printed and had a bona fide circulation in said County, that said newspaper had been regularly printed and published in said county, and had a bona fide circulation therein for the period of one month before the date of the first publication of said advertisement; and that said advertisement was published in the regular daily issues of said newspaper as stated below.

And that there is due or has been paid the **NWA Democrat Gazette** for publication the sum of \$180.88.  
(Includes \$0.00 Affidavit Charge).

*NWA Democrat Gazette 03/03/24; NWA nwaonline.com 03/03/24*

Finance Director

State of ARKANSAS, County of WASHINGTON, Subscribed  
and sworn to before me on this 4th day of March, 2024

NOTARY PUBLIC



NOTICE OF OPPORTUNITY TO  
REVIEW DRAFT ENVIRONMEN-  
TAL ASSESSMENT AND/OR RE-  
QUEST FOR A PUBLIC HEARING  
City of Fayetteville, Arkansas  
Drake Field Airport (FYV) Taxi-  
way E Extension

Fayetteville, Washington  
County, Arkansas

The City of Fayetteville,  
Arkansas is providing public no-  
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The purpose of the Proposed  
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of Runway 16/34. Selection cri-  
teria used to evaluate the Pro-  
posed Action (Alternative 1) and  
other alternatives included wet-  
land and floodplain impacts.

The draft EA is available as a  
hardcopy or online for public re-  
view and comment for 30 days  
through Tuesday, April 2, 2024.

- Website: FYVTaxiwayE.Air-  
portPlans.com

- Hard Copy Location: Drake  
Field Terminal Building, 4500 S.  
School Avenue, Suite F, Fayette-  
ville, AR 72701 (Open 8 a.m.  
to 5 p.m. Monday through Fri-  
day)

Use the following contact in-  
formation to provide comments.  
Any comments should be re-  
ceived or postmarked by Tues-  
day, April 2, 2024.

Kyle Bennett  
2049 East Joyce Boulevard,  
Suite 400  
Fayetteville, AR 72703  
479.287.4614

KABennett@GarverUSA.com

A public hearing will only be  
held if requested. Those wishing  
to request a public hearing on  
the project must make their re-  
quest by email or letter no later  
than Tuesday, April 2, 2024,  
which is 30 days after the pub-  
lication of this notice. In the  
event a request for a public  
hearing is made by the specified  
date and FAA approves, a Notice  
of Public Hearing will be pub-  
lished in this same newspaper.

Before including your ad-  
dress, phone number, e-mail  
address, or other personal iden-  
tifying information in your com-  
ment, be advised that your  
entire comment – including your  
personal identifying information  
– may be made publicly avail-  
able at any time. While you can  
ask us in your comment to with-  
hold from public review your  
personal identifying information,  
we cannot guarantee that we  
will be able to do so.

Anyone needing project infor-  
mation or special accommoda-  
tions under the Americans with  
Disabilities Act (ADA) is encour-  
aged to contact Caitlin Hetzel, at  
(501) 823-0730, mail at Garver,  
Attn: Caitlin Hetzel, 4701  
Northshore Drive, North Little  
Rock, AR 72118, or email at  
PublicInvolvement@GarverUSA.  
com. Hearing or speech im-  
paired, please contact the  
Arkansas Relay System at  
(Voice/TTY 711). Requests  
should be made at least four  
days prior to the end of the  
comment period. Free language  
assistance for Limited English  
Proficient individuals is avail-  
able upon request.

March 3, 2024 380547







# APPENDIX F

## Preparer Resumes



## Adam White, PE

Senior Project Manager

Adam White is a senior project manager on Garver's Aviation Team and serves as the team leader for the Northwest Arkansas Aviation Team and serves as Aviation's Operations Manager. He has 16 years of experience specializing in design, evaluation, and maintenance of airfield pavements. Adam's responsibilities include airport design, project management, construction management, airport master planning, coordination with commercial service and general aviation clients, coordination with the FAA, and writing specifications. His project experience includes construction of runways, taxiways, aprons, hangars, perimeter fencing, parking lots, access roads, ARFF stations, and terminals. Adam has participated in the development of four greenfield airports. He also specializes in pavement rehabilitation and has inspected over 10 million square feet of airport pavement.

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<b>Education:</b>	Bachelor of Science in Civil Engineering
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<b>Licenses:</b>	Professional Engineer, AR, 15425
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<b>Experience:</b>	14 years (firm) 14 years (total)
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### Project Experience:

#### **Fort Smith Regional Airport Runway 25 Extension** (*Fort Smith, AR*)

Senior project manager responsible for coordinating all project processes associated with the planned runway extension, including civil design, electrical and NAVAID design, development and approval of an Environmental Assessment, and acquisition of aerial data surveys and approach changes.

#### **Northwest Arkansas National Airport Concourse B Construction** (*Bentonville, AR*)

Subconsultant design manager responsible for managing design of mechanical, electrical, and fire protection building systems in support of a new seven-gate concourse expansion. Also responsible for the site civil design associated with the concourse development. Coordinated with the prime architect to make sure the building systems and site civil design correlated with the architectural design.

#### **Northwest Arkansas National Airport Terminal Renovation and Improvement** (*Bentonville, AR*)

Project manager responsible for site civil design, including roadway relocation, signage, pavement markings, grading, and drainage designs. Also responsible for site utilities, including water service, sewer services, and electrical. Managed all scope of work completing by the Garver Team, including building electrical, mechanical, fire protection, and telecommunications design.

#### **Bill and Hillary Clinton National Airport Terminal Ramp Expansion and Rehabilitation** (*Little Rock, AR*)

Design Center manager responsible for managing civil and electrical design teams for expansion of the terminal apron. Responsible for managing civil airfield design, drainage design, utility design, and electrical design.

#### **Grand Junction Regional Airport West Terminal Apron Reconstruction** (*Grand Junction, CO*)

Performed quality control reviews and developed construction safety and phasing plans for the West Terminal Apron reconstruction. In this role, Adam was responsible for refining the phasing plans and designing temporary bridge layouts to ensure that the phasing plans were accurately developed within the extent of the bridge's movement.

### **Other Experience:**

- Northwest Arkansas National Airport Landside Pavement Management Plan
- Bentonville Municipal Airport Game Composites Maintenance Facility
- Bentonville Municipal Airport Corporate Hangar Construction
- Fayetteville Drake Field HVAC Replacement





## Ryan Mountain, PWS

Senior Environmental Scientist/Specialist

Ryan Mountain is an environmental special studies manager and senior environmental scientist with 22 years of environmental and project management experience.

Primary responsibilities include managing special environmental studies provided to Garver's aviation, transportation, industrial, federal, development, construction, and water business lines. This includes authoring and co-authoring NEPA documents, agency coordination, threatened and endangered species survey coordination, Phase I environmental site assessments, Section 404 permitting, wetland delineations, detailed wetland and stream mitigation planning and specifications,

biological evaluations and habitat assessments, and preparing spill prevention and stormwater pollution prevention plans. He has previous experience in fish rearing, distribution, spawning, identification, and aging. Ryan is a Professional Wetland Scientist (PWS) and has completed USACE wetland delineation training and the FHWA Section 4(f) overview course. He has also completed TNM 2.5 Noise Modeling and Noise Fundamentals courses AEDT airport noise training, TDEC qualified hydrologic professional training, and wildlife hazard management training required by the FAA for conducting wildlife hazard assessments. Additionally, he has received NEPA documents training and air/industrial stormwater permitting training.

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**Education:** Bachelor of Science, Fisheries and Wildlife Management

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**Licenses:** Professional Wetland Scientist, 2745

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**Experience:** 16 years (firm)  
22 years (total)

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### Project Experience:

#### **Fort Smith Regional Airport Runway 25 Extension Environmental Assessment** (*Fort Smith, AR*)

Senior environmental scientist and lead author of an environmental assessment (EA) for a major runway extension project. Responsibilities included environmental project management, quality assurance reviews, document preparation, coordination with the airport, client, local, state, and federal agencies, and consultant coordination for cultural resources and noise/air quality emissions. The project included a wetland delineation and Section 404 Individual permitting with mitigation planning and USACE field verification, and conducting a public meeting.

#### **Muhlenberg County Airport Environmental Assessment** (*Muhlenberg, KY*)

Senior environmental scientist and co-author of a short-form environmental assessment (EA) for a corporate hangar and fixed wing flight school facility project. Responsibilities included coordination with the airport director; local, state and federal agencies. Additionally, served as the primary field biologist for completion of a wetland delineation required by the FAA. The project includes alternatives analysis and completion of an EA with FAA as the lead federal agency.

#### **Northwest Arkansas National Airport Terminal Area Plan Categorical Exclusion** (*Bentonville, AR*)

Senior environmental scientist responsible for completion of a CATEX involving FAA approval of Concourse B expansion and skybridge construction. Concourse B is proposed to be expanded to eight gates and include partial demolition of Concourse C. The skybridge will connect the recently developed parking garage to the main terminal building and spans Airport Drive.

#### **Nashville International Airport Concourse and Gate Expansion Environmental Assessment** (*Nashville, TN*)

Environmental project manager and primary author of an Environmental Assessment (EA) involving major infrastructure improvements at BNA as part of Vision 2.0. Significant project elements include a new 16-gate concourse, 8-gate satellite concourse, north apron expansion, stream encapsulation, AOA fence relocation and main terminal interior improvements related to the ticket lobby expansion, baggage handling, and concession upgrades. Ryan coordinated the completion of all special environmental studies with subconsultants, lead agency coordination and coordinated with the FAA throughout EA development. Specific studies included socioeconomic analysis, noise, air quality, wetlands, streams, and biological surveys. Additionally, Ryan is coordinating the completion of Section 404 and Aquatic Resources Alteration Permit (ARAP) permitting and mitigation banking coordination for over 1,600 linear feet of stream impacts.



## Colby Marshall

Environmental Specialist

Colby Marshall is an environmental specialist at Garver responsible for performing wetland delineations, jurisdictional water evaluations, industrial and construction stormwater permitting, habitat assessments, and wildlife surveys. He has completed the USACE Stream Investigation, Stabilization, and Design Workshop, Tennessee's Hydrologic Determination Training Course, and has an EPA Watershed Management Training Certificate. His experience includes Trimble GPS and ArcGIS.

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**Education:** Bachelor of Science, Biology

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**Experience:** 4 years (firm)  
13 years (total)

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### **Project Experience:**

#### **Rogers Executive Airport Taxiway Construction (Rogers, AR)**

Environmental scientist responsible for delineating wetlands along a proposed taxiway project. Responsibilities included drafting a wetland report.

#### **Springdale Municipal Airport East Parallel Taxiway Extension (Springdale, AR)**

Environmental scientist responsible for delineating wetlands along proposed airport improvements and acquiring a construction stormwater permit. Responsibilities included assessing federally threatened and endangered species habitat, drafting a wetland report and Section 404 permit package, and drafting a Stormwater Pollution Prevention Plan.

#### **Fort Smith Regional Airport Runway 25 Extension (Fort Smith, AR)**

Environmental scientist responsible for delineating wetlands along proposed airport improvements. Responsibilities included assessing federally threatened and endangered species habitat, drafting a wetland report and Section 404 permit package, and acquiring required compensatory mitigation credits.

#### **Garnett Municipal Airport Environmental Assessment Update (Garnett, KS)**

Environmental scientist responsible for delineating wetlands along proposed airport improvements. Responsibilities included assessing federally threatened and endangered species habitat and drafting a wetland report and Section 404 permit package.

#### **Music City Executive Airport Midfield Apron Expansion (Gallatin, TN)**

Environmental scientist responsible for drafting a wetland report and hydrologic determination and acquiring a Section 404 permit.

#### **Centre-Piedmont-Cherokee County Regional Airport Parallel Taxiway (Centre, AL)**

Environmental scientist responsible for delineating wetlands along a proposed taxiway project. Responsibilities included assessing federally threatened and endangered species habitat, as well as drafting a wetland report and preliminary jurisdictional determination application.

### **Other Experience:**

- Fayetteville-Drake Field Airport Stormwater Pollution Prevention Plan
- Fayetteville-Drake Field Airport Wildlife Fencing Rehabilitation
- Fayetteville-Drake Field Airport Taxiway E Extension
- Clarksville Municipal Airport Runway Rehabilitation
- Clarksville Municipal Airport Runway Extension
- Bentonville Municipal Airport East Taxiway Extension
- Hope Municipal Airport Drainage Improvements



## Kyle Bennett, PE

*Geotechnical and Pavement Design Specialist*

Kyle Bennett is a project manager on the Aviation team with 19 years of combined experience providing aviation and geotechnical engineering, pavement design, construction materials testing, and project inspection services. His experience includes a diverse portfolio of projects comprised of airfields, highways, bridges, industrial complexes, parking structures, and large-scale commercial developments. His primary responsibilities currently include project coordination, developing plans and specifications, client services, and construction management. Areas of design expertise include pavement design, pavement rehabilitation, materials selection, and evaluation/mitigation of geotechnical considerations.

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**Education:** Master of Science in  
Civil Engineering,  
Geotechnical Emphasis

Bachelor of Science in  
Civil Engineering

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**Licenses:** Professional Engineer,  
AR, 14025

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**Experience:** 3 years (firm)  
19 years (total)

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### **Project Experience:**

#### **Fayetteville-Drake Field Airport Runway Pavement and Lighting Rehabilitation** (*Fayetteville, AR*)

Project manager responsible for design of a \$6M pavement and lighting rehabilitation of Runway 16-34 at Fayetteville-Drake Field. Responsible for managing internal civil and electrical design staff and subconsultants to complete design on an accelerated schedule to secure additional project funding. Rehabilitation alternatives were developed through a comprehensive pavement analysis program that included survey, pavement condition index, geotechnical, and non-destructive testing evaluations.

#### **Fayetteville-Drake Field Airport HVAC Replacement** (*Fayetteville, AR*)

Project manager responsible for construction management and administration services. The project included full replacement of the HVAC system in the terminal building including ductwork and controls, along with replacement of window glazing and storefront assemblies.

#### **Clarksville Municipal Airport Runway Rehabilitation** (*Clarksville, AR*)

Aviation engineer responsible for construction administration and construction observation associated with full-depth reclamation and microcracking of Runway 9-27 at Clarksville Municipal Airport. The project included rehabilitation of the runway pavement system using full depth reclamation techniques to construct a cement stabilized base course. Rehabilitation design included microcracking techniques to minimize the potential for future crack formation.

#### **Clarksville Municipal Airport Apron Rehabilitation** (*Clarksville, AR*)

Project manager responsible for construction administration for apron and parallel taxiway pavement rehabilitation. The project included a combination of mill and overlay and seal coat application. The project was completed on an accelerated schedule to coordinate paving with a concurrent runway rehabilitation.

#### **Bentonville Municipal Airport Runway 36 Extension** (*Bentonville, AR*)

Project manager for design of a privately funded 600 ft extension of Runway 18-36, which involved an environmental assessment, runway extension justification, and design services. Responsibilities included preparation of the runway extension justification report and managing internal civil and electrical design staff and subconsultants.

### **Other Experience:**

- Fayetteville-Drake Field Airport Wildlife Fencing Rehabilitation
- Fayetteville-Drake Field Airport Taxiway E Extension
- Fayetteville-Drake Field Airport Fuel Farm Rehabilitation