

US Army Corps of Engineers® Little Rock District

# **PUBLIC NOTICE**

CORPS OF ENGINEERS Application Number: SWL 2023-00167 Date: June 12, 2023 Comments Due: July 7, 2023

# TO WHOM IT MAY CONCERN: **Comments are invited on the work described below. Please see the <u>Public Involvement</u> section for details on submitting comments.**

<u>Point of Contact</u>. If additional information is desired, please contact the regulator, Johnny McLean, telephone number: (501) 340-1382, mailing address: Little Rock District Corps of Engineers, Regulatory Division, PO Box 867, Little Rock, Arkansas 72203-0867, email address: Johnny.L.McLean@usace.army.mil

<u>Project Information</u>. Pursuant to Section 404 of the Clean Water Act (33 U.S. Code 1344), notice is hereby given that

# Arkansas Department of Transportation PO Box 2261 Little Rock, Arkansas 72203-2261

has requested authorization for work, including the placement of dredged and fill material, in waters of the United States associated with constructing a new highway that will connect the Springdale Northern Bypass to the Northwest Arkansas National Airport. The proposed project will cross nine streams and two wetlands and is located in sections 4, 9, 14, 15, 16, and 23, T. 18 N., R. 31 W., Benton County, Arkansas.

The project purpose is to improve access from the future Springdale Northern Bypass (SNB) to the Northwest Arkansas National Airport (XNA). As the population increases in Northwest Arkansas, demand at XNA has increased for both passenger and freight flights. The proposed project would provide an improved connection between XNA and the SNB that reduces congestion and increases reliability.

The Environmental Assessment (EA) for the project was completed on January 21, 2021, and the finding of no significant impact (FONSI) was approved by the Federal Highway Administration (FHWA) on June 14, 2022. The EA evaluated the three following alternatives, Improve Existing Highways, Partial New Location and New Location. The New Location alternative was selected as the preferred alternative. This alternative is approximately 4 miles in length and will consist of a four-lane divided highway constructed entirely on new location. It will include overpasses or underpasses at Malone Lane, Holmes Road, Haden Road, and Wager Drive to provide continued connectivity for the public.

The project is located within the Illinois River watershed and will require the acquisition of approximately 240 acres of new right-of-way. Direct land use changes would primarily be the conversion of forest and pastureland with scattered low-density residential development to a maintained right-of-way for transportation use. The project will adversely impact 9 streams,

totaling approximately 4,984 linear feet, through embankment, bridge and culvert construction. The streams consist of two perennial (Osage Creek and Little Osage Creek), two intermittent and five ephemeral tributaries. Osage Creek and Little Osage Creek are designated as Ecologically Sensitive Waterbodies. The majority of the streams are moderately to fully functional. Two wetlands totaling approximately 0.07 acres will be adversely impacted. The wetlands are fringe wetlands associated with two ponds and are very impaired. Stream and wetland impacts could not be completely avoided but impacts were minimized by bridging floodplains and modifying the alignment. Shifting the alignment to the north would increase impacts to Osage Creek. Shifting the alignment to the south would have more stream impacts due to parallel stream crossings, requiring more linear feet of stream to be routed into the roadside ditches. ArDOT proposes to mitigate for the unavoidable stream and wetland impacts by purchasing 21,727 stream credits and 0.41 wetland credits from an approved mitigation bank(s) that services the watershed.

The new roadway would impact 247 acres of karst terrain and would directly impact two springs. Karst springs can serve as habitat for Federally listed species including the Ozark Cavefish (Amblyopsis rosae) and the Benton County Cave Crayfish (Cambaras aculabrum). There are no mapped spring recharge areas or caves within the project footprint. Six Federally listed species may be affected by the project but are not likely to be adversely affected. They include the Ozark Cavefish, Benton County Crayfish, Gray Bat (Myotis grisescens), Northern Long-eared Bat (Myotis septentrionalis), Ozark Big-eared Bat (Corynorhinus townsendii ingens) and Neosho Mucket (Lampsilis rafinesqueana). One Federally listed species, the Indiana Bat (Myotis sodalis), is likely to be adversely affected. The project would cross 15.6 acres of floodplain associated with Osage Creek and Little Osage Creek. These floodplains would be bridged and ArDOT determined this would result in only minor impacts to the floodplains. The bridge crossings of the floodplains would be constructed in a manner to cause zero rise in the 100-year flood elevations. Approximately 47 acres of important farmland would be converted to highway right-of-way. The project would require two residential and three business relocations. Three sites on the National Register of Historic Places would be impacted by the project and the impacts would be mitigated through a Memorandum of Agreement between the FHWA, ArDOT, the Arkansas State Historic Preservation Officer and the Osage Nation. The EA identified seven noise-sensitive receptors that would be impacted by the project and six hazardous material sites. Census data indicated that none of the census tracts or census block groups within the project area had median household incomes below the poverty guidelines or minority populations greater than 50%; therefore, no impacts to environmental justice populations are anticipated.

The Northwest Arkansas Regional Airport Authority was formed to evaluate, plan and develop a new commercial airport to serve the air trade area of Northwest Arkansas. To accomplish this, the Authority prepared a feasibility study, site selection study, master plan and an Environmental Impact Statement (EIS) to aid in a location for the new airport. The airport began operations at its current location in 1998. In 1999, an EIS was initiated to identify a better access road from Interstate 49 (I-49) to the airport. Work on this EIS continued through 2019. Over the course of the EIS study (19 years), the project area, population, property development and area roadways changed substantially. Because of these changes, especially the completion of the SNB from I-49 to State Highway 112, the scope of the project was reduced and, in 2019, the EIS was terminated, an EA was initiated, and the airport changed its named to the Northwest Arkansas

National Airport. Northwest Arkansas has experienced substantial population growth since 2000. The larger cities within these counties include Rogers, Fayetteville, Springdale and Bentonville. The smaller towns include Highfill, Elm Springs and Caves Springs. According to the U.S. Census Bureau, Northwest Arkansas experienced a considerable population growth from 2000 to 2019. Project area cities and towns experienced between 51% and 378% growth in population as compared to an average growth for the state of 13%. The Fayetteville-Springdale-Rogers area was the 14th fastest growing metro area in the United States in 2017. The population growth in Northwest Arkansas has resulted in the increased demand for air travel. In 2019, XNA saw a 17% increase in passengers, representing substantial growth for a small-hub airport. The number of passengers using XNA in 2019 was 64% higher than in 2011, and the airport has experienced eight consecutive years of passenger growth. A study conducted by Mead and Hunt (2020) predicts enplanements at XNA will double by 2033 and more than triple by the end of the 20-year planning period to approximately 2.9 million annually. As passenger volumes and airport-related employment have increased, so has the volume of traffic to and from the airport and on the local roadway network.

The New Location Alternative was identified as the Preferred Alternative because it provides the most direct and reliable route to the airport with environmental and social impacts comparable to the other build alternatives. The New Location Alternative best reduces the likelihood of congestion, accidents or extreme weather events interfering with airport access by providing a completely new route to the airport, allowing for the existing highways and the new access road to serve as redundant routes in the case of such events.

The location and general plan for the proposed work are shown on the enclosed sheets 1 through 12 of 12.

Water Quality Certification. The Clean Water Act (CWA) Section 401 Certification Rule (Certification Rule, 40 Code of Federal Regulations (CFR) Part 121), effective September 11, 2020, requires certification for any license or permit that authorizes an activity that may result in a discharge. The scope of a CWA Section 401 certification is limited to assuring that a discharge from a Federally licensed or permitted activity will comply with water quality requirements. The applicant is responsible for requesting certification and providing required information to the certifying agency. As of the date of this public notice, the applicant has not submitted a certification request to the Arkansas Department of Energy and Environment, Division of Environmental Quality (certifying authority). In accordance with Certification Rule Part 121.6, once the applicant submits a certification request the Corps will determine the reasonable period of time for the certifying agency to act upon the certification and provide written notification. In accordance with Certification Rule Part 121.12, the Corps will notify the U.S. Environmental Protection Agency Administrator when it has received the subject certification. The Administrator is responsible for determining if the discharge may affect water quality in a neighboring jurisdiction. The DA permit may not be issued pending the conclusion of the Administrator's determination of effects on neighboring jurisdictions.

<u>Cultural Resources</u>. ArDOT staff archeologists have reviewed topographic maps, the National Register of Historic Places, and other data on reported sites in the area. The FHWA has completed coordination with all associated Native American Nations and tribal governments.

The District Engineer invites responses to this public notice from Federal, State, and local agencies; historical and archeological societies; and other parties likely to have knowledge of or concerns with historic properties in the area.

<u>Endangered Species</u>. ArDOT determined that the project is not likely to adversely affect the Ozark Cavefish, Benton County Crayfish, Gray Bat, Northern Long-eared Bat, Ozark Big-eared Bat and Neosho Mucket, but is likely to adversely affect the Indiana Bat. A copy of this notice is being furnished to the U.S. Fish and Wildlife Service and appropriate state agencies and constitutes a request to those agencies for information on whether any other listed or proposed-to-be-listed endangered or threatened species may be present in the area which would be affected by the proposed activity.

<u>Floodplain</u>. ArDOT determined that the project will impact approximately 15.6 acres of the 100year floodplain. We are providing copies of this notice to appropriate floodplain officials in accordance with 44 Code of Federal Regulations (CFR) Part 60 (Floodplain Management Regulations Criteria for Land Management and Use) and Executive Order 11988 on Floodplain Management.

<u>Section 404(b)(1) Guidelines</u>. The evaluation of activities to be authorized under this permit, which involves the discharge of dredged or fill material will include application of guidelines promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act. These guidelines are contained in 40 Code of Federal CFR 230.

<u>Public Involvement</u>. Any interested party is invited to submit to the above-listed POC written comments or objections relative to the proposed work on or before **July 7, 2023**. Substantive comments, both favorable and unfavorable, will be accepted and made a part of the record and will receive full consideration in determining whether this work would be in the public interest. The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an

Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request in writing within the comment period specified in this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. The District Engineer will determine if the issues raised are substantial and whether a hearing is needed for making a decision.

**NOTE:** The mailing list for this Public Notice is arranged by state and county(s) where the project is located, and includes any addressees who have asked to receive copies of all public notices. Please discard notices that are not of interest to you. If you have no need for any of these notices, please advise us so that your name can be removed from the mailing list.

Enclosures

Approximate Coordinates of Project Center

Latitude: 36.234519 Longitude: -94.273226

UTM Zone: 15N North: 4010711 East: 385584

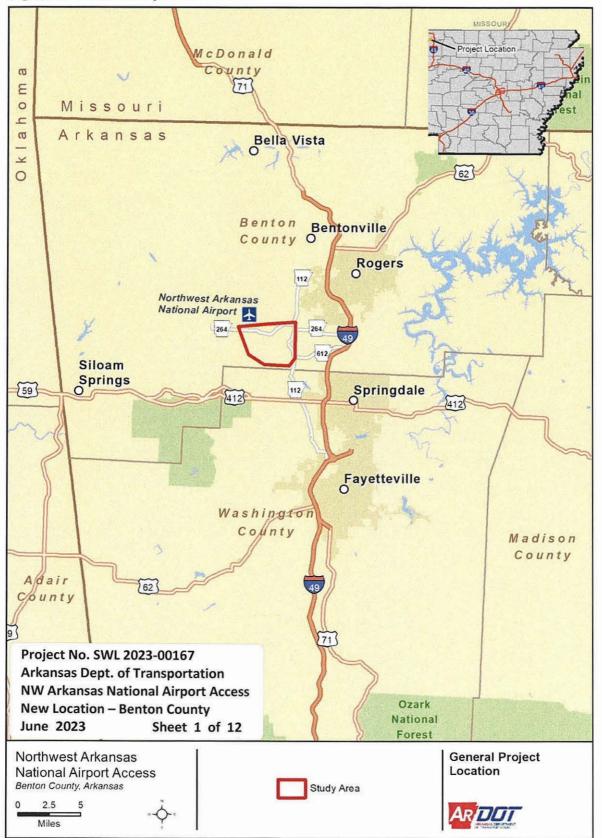


Figure 1: General Project Location

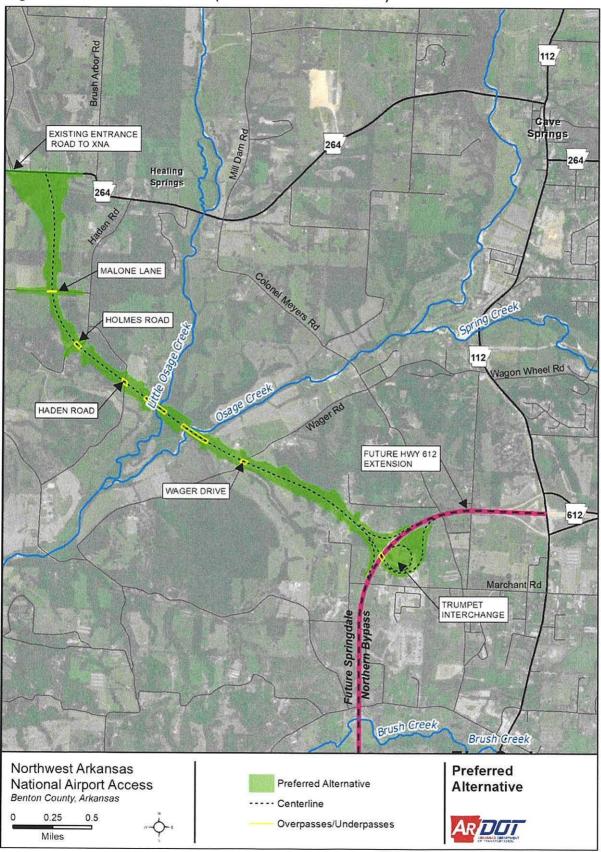
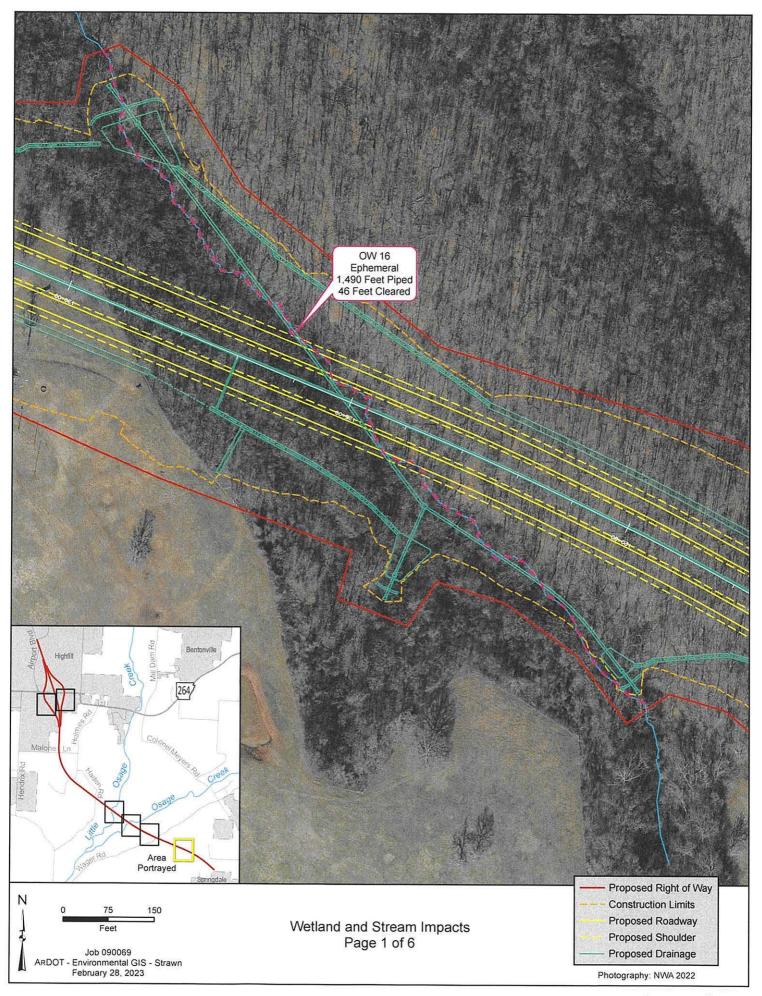
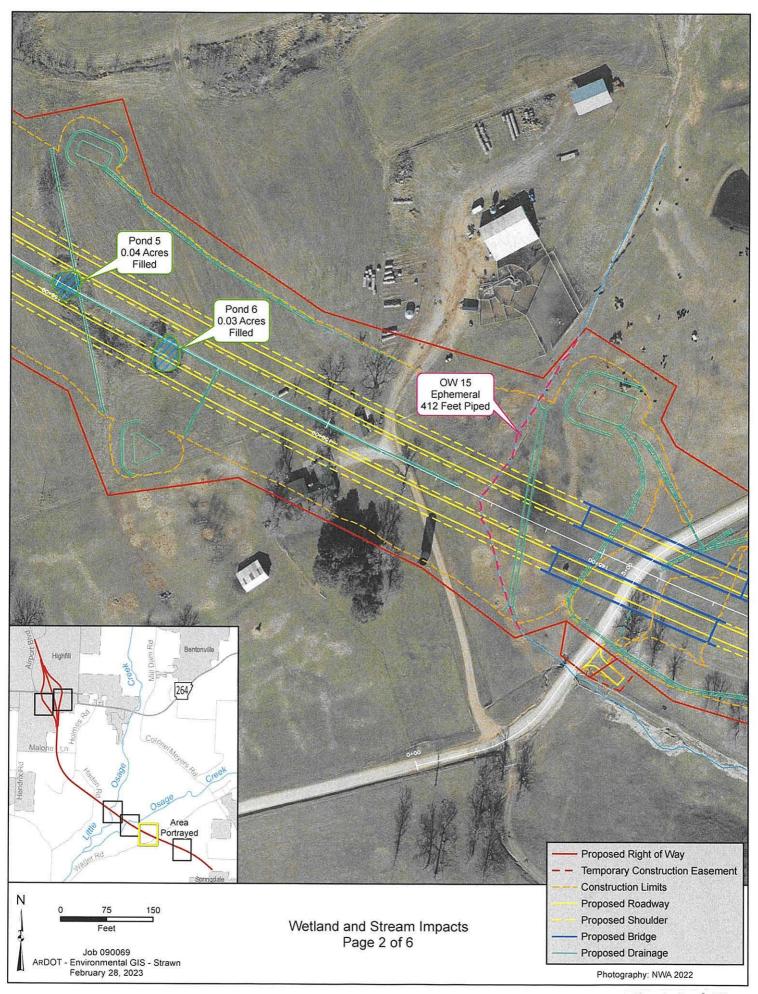
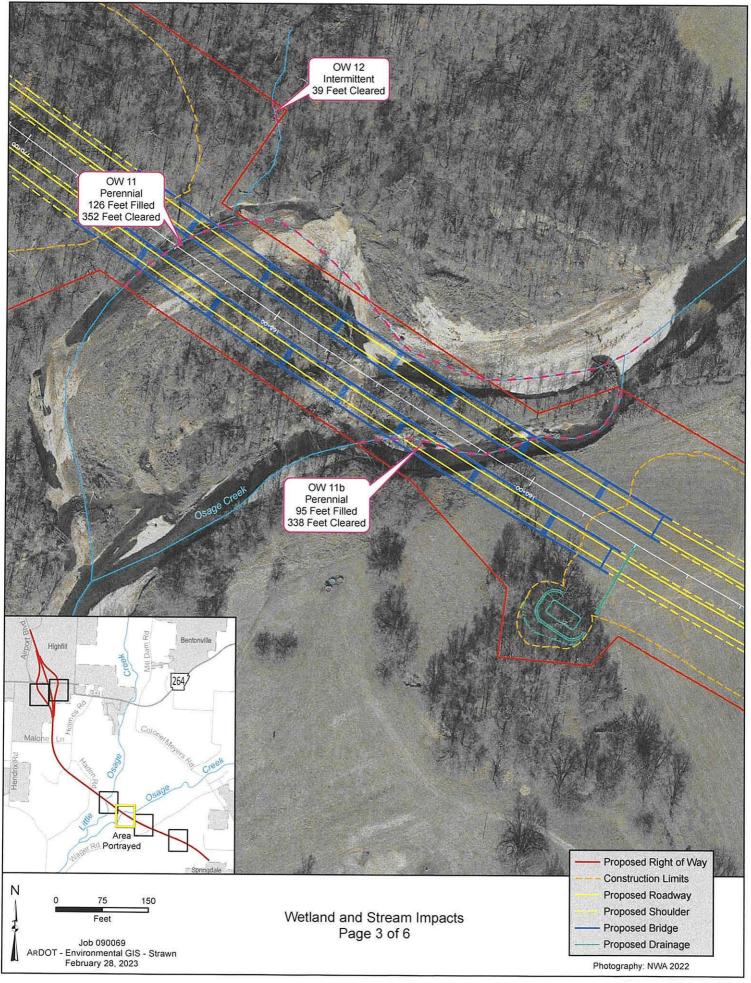
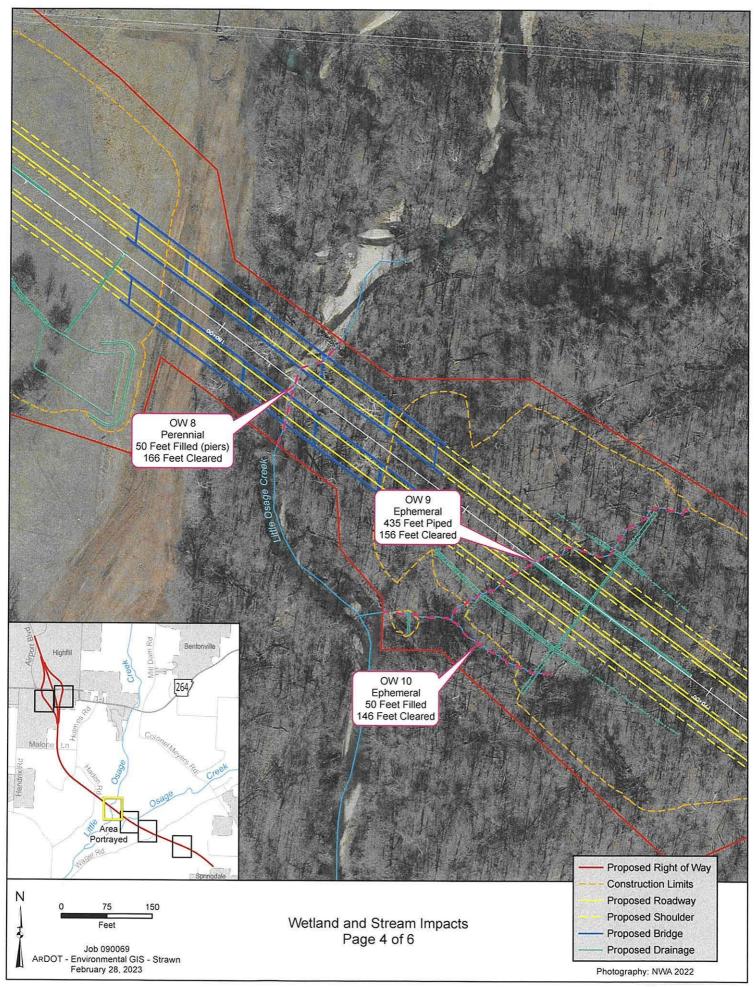


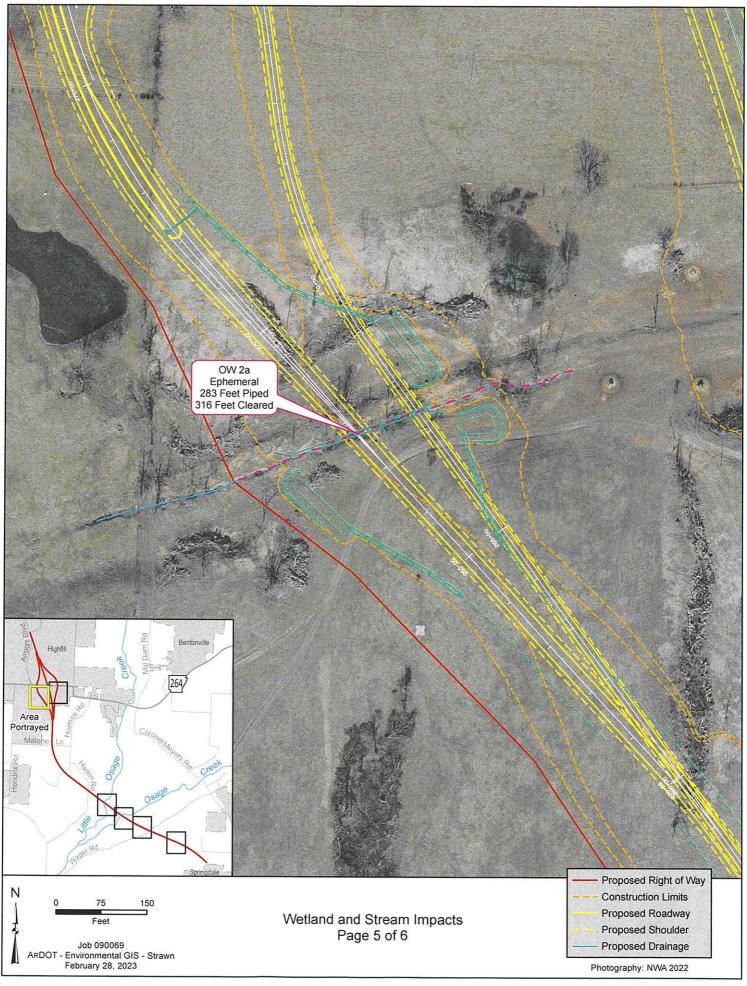
Figure 2: Preferred Alternative (New Location Alternative)

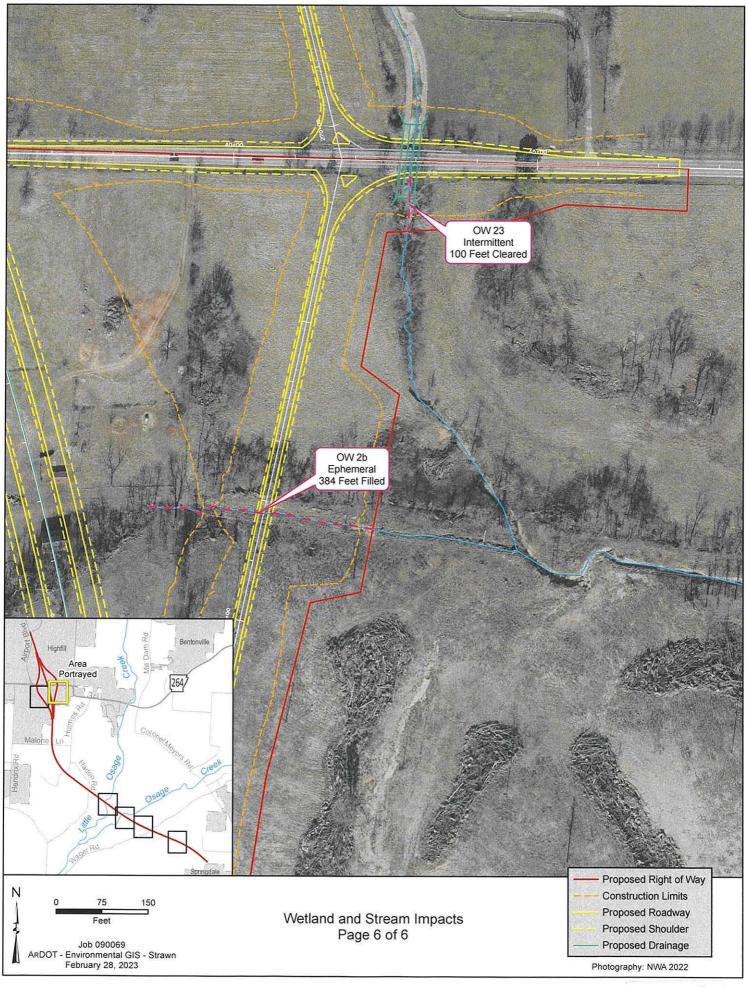












# CHARLESTON METHOD

## Mitigation for Wetlands

## 14. Tables and Worksheets.

14.1 Adverse Impacts Table.

## ADVERSE IMPACT FACTORS FOR WETLANDS AND OTHER WATERS OF THE U.S. EXCLUDING STREAMS

| Factors            | Options                 |          |                   |        |                  |         |  |  |
|--------------------|-------------------------|----------|-------------------|--------|------------------|---------|--|--|
| Logt Turns         | Туре                    | e C      | Тур               | e B    | Туре А           |         |  |  |
| Lost Type          | 0.2                     | 2        | 2.                | 0      | 3                | .0      |  |  |
| Duisnity Cotogony  | Terti                   | ary      | Secor             | ndary  | Prir             | nary    |  |  |
| Priority Category  | 0.5                     |          | l.                | 5      | 2                | .0      |  |  |
| Eviating Condition | Very Impaired           | Impaired | Slightly Impaired |        | Fully Functional |         |  |  |
| Existing Condition | 0.1                     | 1.0      | 2.0               |        | 2.5              |         |  |  |
| Duration           | Seasonal                | 0 to 1   | 1 to 3            | 3 to 5 | 5 to 10          | Over 10 |  |  |
| Duration           | 0.1                     | 0.2      | 0.5               | 1.0    | 1.5              | 2.0     |  |  |
| Deminant Immed     | Shade                   | Clear    | Dredge            | Drain  | Impound          | Fill    |  |  |
| Dominant Impact    | 0.2                     | 1.0      | 1.5               | 2.0    | 2.5              | 3.0     |  |  |
| Cumulative Impact  | $0.05 \times \sum AA_i$ |          |                   |        |                  |         |  |  |

<u>Note</u>: For the Cumulative Impact factor,  $\sum$  AA is stands for the sum of the acres of adverse impacts to acquatic areas for the overall project. When computing this factor, round to the nearest tenth decimal place using even number rounding. Thus 0.01 and 0.050 are rounded down to give a value of zero while 0.051 and 0.09 are rounded up to give 0.1 as the value for the cumulative impact factor. The cumulative impact factor for the <u>overall</u> project must be used in each area column on the Required Mitigation Credits Worksheet below.

#### **Required Mitigation Credits Sample Worksheet**

|                    |                   |                  | iguiton creates of |         |           |                   |
|--------------------|-------------------|------------------|--------------------|---------|-----------|-------------------|
| Factor             | Ponds<br>(Filled) |                  |                    |         |           |                   |
| Lost Type          | 0.2               |                  |                    |         |           |                   |
| Priority Category  | 0.5               |                  |                    |         |           |                   |
| Existing Condition | 0.1               |                  |                    |         |           |                   |
| Duration           | 2.0               |                  |                    |         |           |                   |
| Dominant Impact    | 3.0               |                  |                    |         |           |                   |
| Cumulative Impact  | 0.0               |                  |                    |         |           |                   |
| Sum of r Factors   | 5.8               | R <sub>2</sub> = | R <sub>3</sub> =   | $R_4 =$ | $R_{5} =$ | R <sub>6</sub> =  |
| Impacted Area      | 0.07              | AA2=             | AA3=               | AA4=    | AA5=      | AA <sub>6</sub> = |
| R x AA =           | 0.41              |                  |                    |         |           |                   |

Total Required Credits =  $\sum (\mathbf{R} \times \mathbf{AA}) = 0.41$ 

September 19, 2002

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#### Little Rock Stream Method

#### ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET

| Factors                  | Options                      |   |                                  |                      |                   |                                   |                                  |                      |             |             |
|--------------------------|------------------------------|---|----------------------------------|----------------------|-------------------|-----------------------------------|----------------------------------|----------------------|-------------|-------------|
|                          | E                            | Ephemeral                                   | r                                | Intermitten          | t                 | Per                               | ennial - OF                      | IWM wie              | ith         |             |
| Stream Type Impacted     |                              | 0.1   |                                  | 0.4                  |                   | <15'<br>0.4                       | 15'-30'<br>0.6                   |                      | ·30'<br>).8 |             |
| Priority Area            | Tertiary<br>0.1              |   | Secondary<br>0.4                 |                      | Primary<br>0.8    |                                   |                                  |                      |             |             |
| Existing Condition       | Functionally Impaired<br>0.1 |   | Moderately Functional<br>0.8     |                      | Fully Functional  |                                   |                                  |                      |             |             |
| Duration                 | Temporary<br>0.05            |   | Recurrent<br>0.1                 |                      | Permanent<br>0.3  |                                   |                                  | -                    |             |             |
| Activity                 | Clearing<br>0.05             | Utility Crossing<br>/Bridge Footing<br>0.15 | Below<br>Grade<br>Culvert<br>0.3 | Armor<br>0.5         | Detention<br>0.75 | Morpho-<br>logic<br>Change<br>1,5 | Impound-<br>ment<br>(dam)<br>2.0 | Pipe<br>>100'<br>2.2 | Fill        | 2.5         |
| Cumulative Linear Impact | <100'<br>0                   | 100'-200'<br>0.05                           | 201-500'<br>0.1                  | 501-<br>1000'<br>0.2 | reach 500         |                                   | F)<br>act (examp<br>F of impac   |                      |             | 0.1<br>ctor |

| Factor  | Ephemeral<br>Streams<br>(Functionally<br>Impaired; Pipe)<br>OW 2a & 2b | Intermittent<br>Stream<br>(Functionally<br>Impaired;<br>Clearing) OW 23 | Ephemeral Streams<br>(Functionally<br>Impaired; Clearing)<br>OW 2a | Ephemeral Streams<br>(Secondary, Fully<br>Functional; Fill)<br>OW 10 | Ephemeral<br>Streams<br>(Secondary,<br>Fully Functional;<br>Pipe) OW 9 | Ephemeral<br>Streams<br>(Tertiary, Fully<br>Functional;<br>Pipe) OW 16 |
|---|--|---|--|--|--|--|
| Stream Type Impacted                            | 0.1  | 0.4   | 0.1  | 0.1  | 0.1  | 0.1  |
| Priority Area                                   | 0.1  | 0.1   | 0.1  | 0.4  | 0.4  | 0.1  |
| Existing Condition                              | 0.1  | 0.1   | 0.1  | 1.6  | 1.6  | 1.6  |
| Duration  | 0.3  | 0.1   | 0.1  | 0.3  | 0.3  | 0.3  |
| Activity  | 2.2  | 0.05  | 0.05   | 2.5  | 2.2  | 2.2  |
| Cumulative Linear Impact                        | 1.0  | 1.0   | 1.0  | 1.0  | 1.0  | 1.0  |
| Sum of Factors (M)                              | 3.8  | 1.75  | 1.45   | 5.9  | 5.6  | 5.3  |
| Linear Feet of Stream<br>Impacted in Reach (LF) | 667  | 100   | 316  | 50   | 435  | 1,490  |
| $M \times LF =$                                 | 2,535  | 175   | 458  | 295  | 2,436  | 7,897  |

Mitigation Credits Required = (M x LF) =

13,796

November 26, 2011

### Job 090069 – XNA Access, Section 404 Wetland & Stream Credits Required 2023-02-28 Page 3 of 4

#### Little Rock Stream Method

#### ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET

| Factors                  |                              | Options                                     |                                  |                      |                   |  |                                  |                      |             |           |
|--------------------------|------------------------------|---|----------------------------------|----------------------|-------------------|--|----------------------------------|----------------------|-------------|-----------|
|                          | E                            | phemeral                                    |                                  | Intermittent         |                   |  | Perennial - OHWM width           |                      |             |           |
| Stream Type Impacted     |                              | 0.1   |                                  | 0.4                  |                   | <15'<br>0.4                                | 15'-30'<br>0.6                   |                      | •30'<br>).8 |           |
| Priority Area            | Tertiary<br>0.1              |   | Secondary<br>0,4                 |                      | Primary<br>0.8    |  |                                  |                      |             |           |
| Existing Condition       | Functionally Impaired<br>0.1 |   | Moderately Functional<br>0.8     |                      | Fully Functional  |  |                                  |                      |             |           |
| Duration                 | Temporary<br>0.05            |   | Recurrent<br>0.1                 |                      | Permanent<br>0.3  |  |                                  |                      |             |           |
| Activity                 | Clearing<br>0.05             | Utility Crossing<br>/Bridge Footing<br>0.15 | Below<br>Grade<br>Culvert<br>0.3 | Armor<br>0.5         | Detention<br>0.75 | Morpho-<br>logic<br>Change<br>1.5          | Impound-<br>ment<br>(dam)<br>2.0 | Pipe<br>>100'<br>2.2 | Fill        | 2.5       |
| Cumulative Linear Impact | <100'<br>0                   | 100'-200'<br>0.05                           | 201-500'<br>0.1                  | 501-<br>1000'<br>0.2 | reach 5           | near feet (1<br>00 LF of i<br>or for 5,280 | mpact (ex                        | •                    | calin       | 0.1<br>Ig |

| Factor  | Ephemeral<br>Streams<br>(Secondary, Fully<br>Functional;<br>Clearing) OW 9,<br>10 | Ephemeral<br>Stream (Teriary,<br>Fully Functional;<br>Clearing) OW 16 | Intermittent Stream<br>(Fully Functional;<br>Clearing) OW 12 | Little Osage Creek<br>(Primary Priority<br>Arca; Clearing)<br>OW 8, Little Osage | Little Osage<br>Creek (Primary<br>Priority Area;<br>Fill) OW 8, Little<br>Osage |
|---|---|---|--|--|---|
| Stream Type Impacted                            | 0.1   | 0.1   | 0.4  | 0.8  | 0.8   |
| Priority Area                                   | 0.4   | 0.1   | 0.1  | 0.8  | 0.8   |
| Existing Condition                              | 1.6   | 1.6   | 1.6  | 1.6  | 1.6   |
| Duration  | 0.1   | 0.1   | 0.1  | 0.1  | 0.3   |
| Activity  | 0.05  | 0.05  | 0.05   | 0.05   | 2.5   |
| Cumulative Linear Impact                        | 1.0   | 1.0   | 1.0  | 1.0  | 1.0   |
| Sum of Factors (M)                              | 3.25  | 2.95  | 3.25   | 4.35   | 7   |
| Linear Feet of Stream<br>Impacted in Reach (LF) | 302   | 46  | 39   | 166  | 50  |
| M x LF =  | 982   | 136   | 127  | 722  | 350   |

Mitigation Credits Required = (M x LF) =

2,316

November 26, 2011

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#### Little Rock Stream Method

#### ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET

| Factors                  | Options                      |   |                                  |                      |  |                                   |                                  |                      |             |     |
|--------------------------|------------------------------|---|----------------------------------|----------------------|--|-----------------------------------|----------------------------------|----------------------|-------------|-----|
|                          | E                            | phemeral                                    |                                  | Intermittent         |  | Perennial - OHWM width            |                                  |                      |             |     |
| Stream Type Impacted     |                              | 0.1   |                                  | 0.4                  |  | <15'<br>0.4                       | 15'-30'<br>0.6                   |                      | -30'<br>).8 |     |
| Priority Area            | Tertiary<br>0.1              |   | Secondary<br>0.4                 |                      | Primary<br>0.8   |                                   |                                  |                      |             |     |
| Existing Condition       | Functionally Impaired<br>0.1 |   | Moderately Functional<br>0.8     |                      | Fully Functional   |                                   |                                  |                      |             |     |
| Duration                 | Temporary<br>0.05            |   | Recurrent<br>0.1                 |                      | Permanent<br>0.3   |                                   |                                  |                      |             |     |
| Activity                 | Clearing<br>0.05             | Utility Crossing<br>/Bridge Footing<br>0.15 | Below<br>Grade<br>Culvert<br>0.3 | Armor<br>0.5         | Detention<br>0.75  | Morpho-<br>logic<br>Change<br>I.5 | Impound-<br>ment<br>(dam)<br>2.0 | Pipe<br>>100'<br>2.2 | Fill        | 2.5 |
| Cumulative Linear Impact | <100'<br>0                   | 100'-200'<br>0.05                           | 201-500'<br>0.1                  | 501-<br>1000'<br>0.2 | >1000 linear feet (LF) 0.<br>reach 500 LF of impact (example: scaling<br>factor for 5,280 LF of impacts = 1.1) |                                   |                                  |                      | 0.1<br>Ig   |     |

| Factor  | Perennial<br>Streams<br>(Moderately<br>Functional; Fill)<br>OW 11, Osage | Perennial Streams<br>(Moderately<br>Functional;<br>Clearing) OW 11,<br>Osage | Intermittent Stream<br>(Functionally<br>Impaired; Pipe)<br>OW 15 | Perennial Streams<br>(Fully Functional;<br>Fill) OW 11b | Perennial<br>Streams (Fully<br>Functional;<br>Clearing) OW<br>11b |
|---|--|--|--|---|---|
| Stream Type Impacted                            | 0.8  | 0.8  | 0.4  | 0.8   | 0.8   |
| Priority Area                                   | 0.4  | 0.4  | 0.4  | 0.4   | 0.4   |
| Existing Condition                              | 0.8  | 0.8  | 0.1  | 1.6   | 1.6   |
| Duration  | 0.3  | 0.1  | 0.3  | 0.3   | 0.1   |
| Activity  | 2.5  | 0.05   | 2.2  | 2.5   | 0.05  |
| Cumulative Linear Impact                        | 1.0  | 1.0  | 1.0  | 1.0   | 1.0   |
| Sum of Factors (M)                              | 5.8  | 3.15   | 4.4  | 6.6   | 3.95  |
| Linear Feet of Stream<br>Impacted in Reach (LF) | 126  | 352  | 412  | 95  | 338   |
| $M \times LF =$                                 | 731  | 1,109  | 1,813  | 627   | 1,335   |

Mitigation Credits Required = (M x LF) =

5,615

November 26, 2011

|  | TOTAL Mitigation Credits | Required = (M x LF) = | 21,727 |
|--|--------------------------|-----------------------|--------|
|--|--------------------------|-----------------------|--------|