

Appendix G – Aquatic Resources Assessment



2049 E. Joyce Blvd.
Suite 400
Fayetteville, AR 72703
TEL 479.527.9100
FAX 479.527.9101
www.GarverUSA.com

MEMORANDUM

Date: August 27, 2020

Prepared By: Colby Marshall, Environmental Scientist - Garver

RE: Aquatic Features
Arkansas Department of Transportation (ARDOT) – XNA Connector Road
ARDOT Job No. 090069
Cave Springs, Benton County, Arkansas

The Federal Highway Administration (FHWA), in cooperation with the Arkansas Department of Transportation (ARDOT), is preparing an Environmental Assessment (EA) for approximately four miles of new highway for a connector road from the future Springdale Northern Bypass connection at US Highway 612 to the Northwest Arkansas National Airport (XNA). Three build alternative corridors, as described in detail in the EA, were evaluated to identify wetlands, streams, springs, and ponds. This memo was prepared to document overall potential impacts to these aquatic features, which are summarized in the below table.

Wetlands were preliminarily identified and classified within the proposed alternative corridors based on Cowardin, et al. (1979). The majority of wetland determinations were made using observable vegetation, hydrology, and soils in accordance with the routine approach described in the USACE Wetland Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0). Aquatic features along existing alignments in the Partial New Location Alternative and the Improve Existing Highways Alternatives were visually identified from public right-of-way (except for new locations along the Partial New Location Alternative). These identifications were made using field observations and desktop data (Natural Resources Conservation Service; NRCS) soils data, aerial photographs, and U.S. Geologic Survey (USGS) topographic maps.

New Location Alternative

This alternative contains 18 streams that include Osage Creek and Little Osage Creek. Five wetlands were delineated which includes three forested wetlands (PFO) and two emergent wetlands (PEM). Additionally, seven ponds and two springheads were identified.

Partial New Location Alternative

This alternative contains 13 streams and also includes Osage Creek and Little Osage Creek. Nine wetlands were delineated which includes three PFO and six PEM wetlands. Additionally, two ponds and three springheads were identified.

Improve the Existing Condition Alternative

This alternative contains 18 streams that include Osage Creek and Spring Creek. Several streams are parallel to this alternative alignment. Two PFO, seven PEM, and four unconsolidated bottom (PUB) wetlands were identified within this corridor for a total of 13 wetlands. Additionally, three ponds and two springheads were identified.

Estimated impacts to these aquatic features are identified for each alternative in the below table. Impacts were determined based on the conceptually proposed right-of-way.



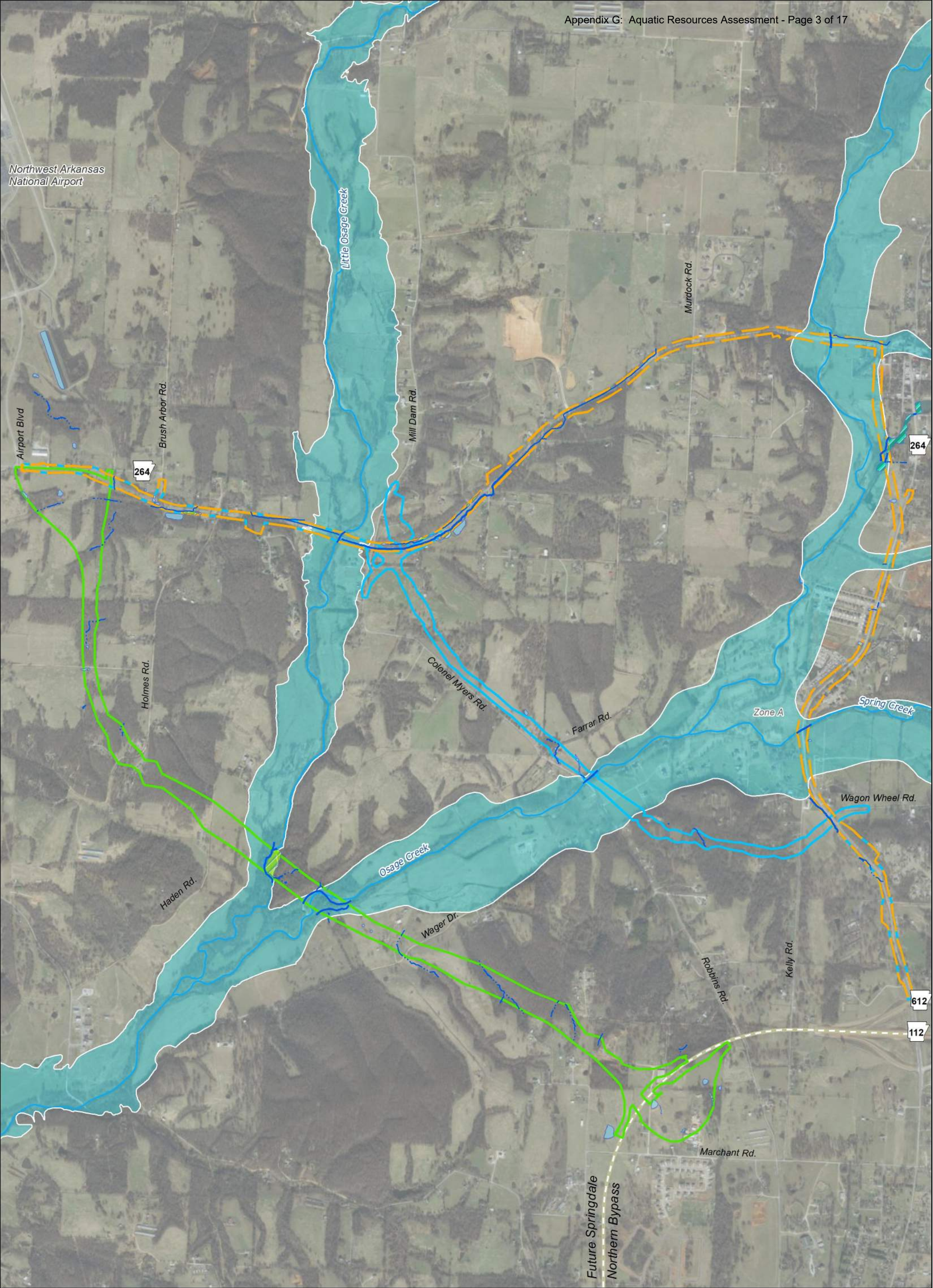
www.GarverUSA.com

Page 2 of 2

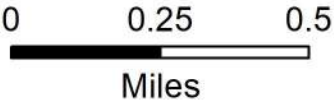
Table 1: Impacted Aquatic Features for each Alternative

	Impacted Aquatic Features								
	Wetlands				Streams				Springs
Alternative	PEM (ac)	PFO (ac)	PUB* (ac)	Total (ac)	PER (LF)	INT (LF)	EPH (LF)	Total (LF)	Count
New Location	0.14	2.12	1.05	3.2	109	196	6,313	6,618	2
Partial New Location	0.28	0.42	0.11	0.80	2,046	3,903	756	6,705	3
Improve the Existing Condition	0.47	0.53	0.46	1.46	4,991	9,067	791	14,849	2

*Pond impacts are included as unconsolidated bottom wetlands



Northwest Arkansas
National Airport Access Road
Benton County, Arkansas



- | | |
|----------------------|------------------------------|
| Perennial Channel | Improve Existing Alternative |
| Intermittent Channel | Partial New Alternative |
| Ephemeral with OHWM | All New Alternative |
| PEM Wetland | FEMA Effective Zone A |
| PFO Wetland | |
| PUB Wetland | |
| Pond | |

Figure 3
Aquatic Features





Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

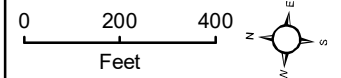
- Observation Point
- Intermittent Channel
- - - Ephemeral with OHWM

- Pond
- Improve the Existing Highways Alternative
- New Location Alternative

- Partial New Location Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-1



Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

- Data Point (DP)
- Ephemeral with OHWM
- ▨ PEM Wetland
- New Location Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery

0 200 400
Feet



Appendix G-2



Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

- | | | |
|-------------------|----------------------|--------------------------|
| Springs | Perennial Channel | PFO Wetland |
| Observation Point | Intermittent Channel | Pond |
| Data Point (DP) | Ephemeral with OHWM | New Location Alternative |

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery

0 200 400
Feet



Appendix G-3

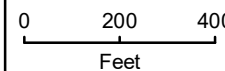


Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

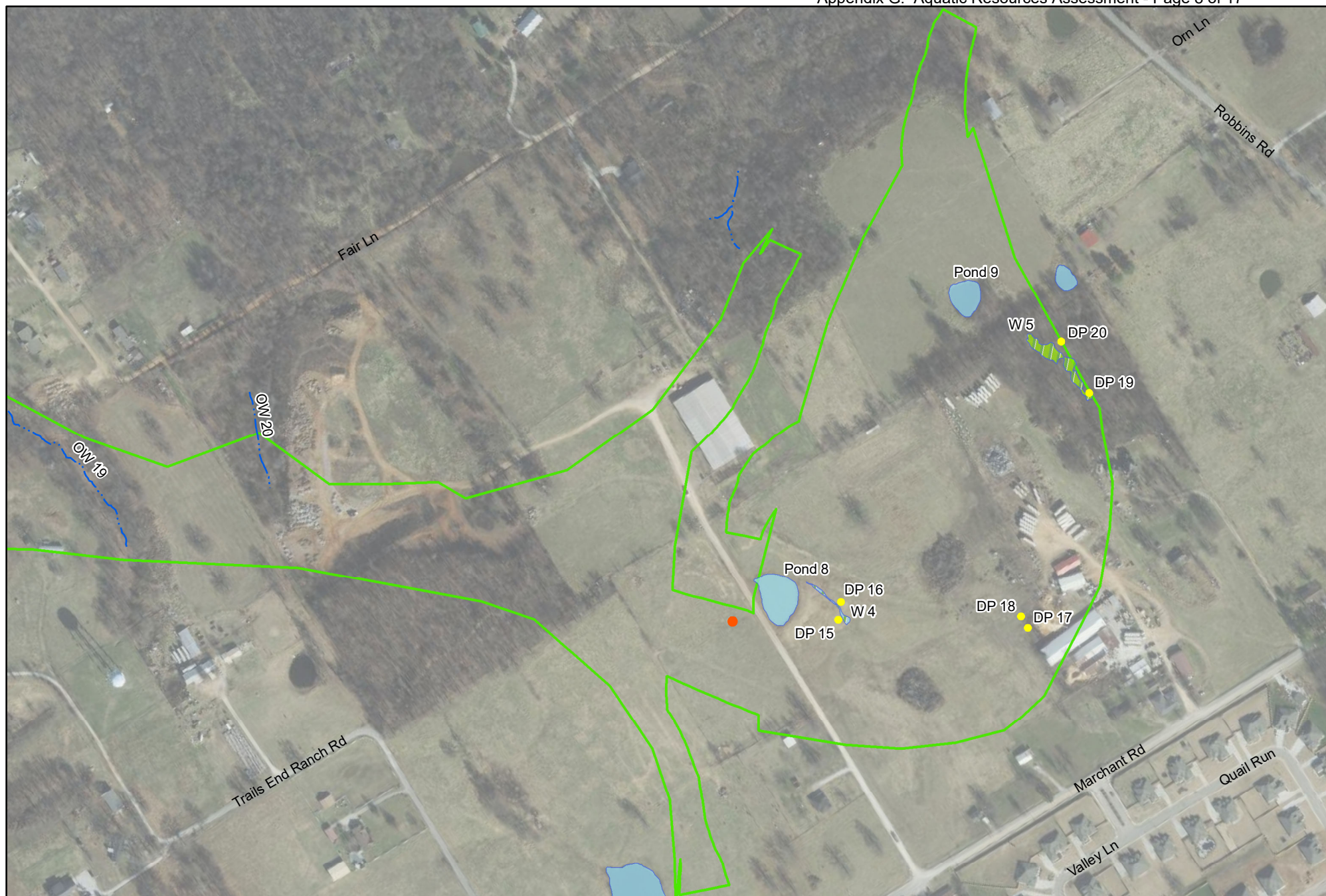
- Observation Point
- Data Point (DP)
- Ephemeral with OHWM
- New Location Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-4



Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

- Observation Point
- Data Point (DP)
- Ephemeral with OHWM
- PEM Wetland
- PFO Wetland
- Pond
- New Location Alternative

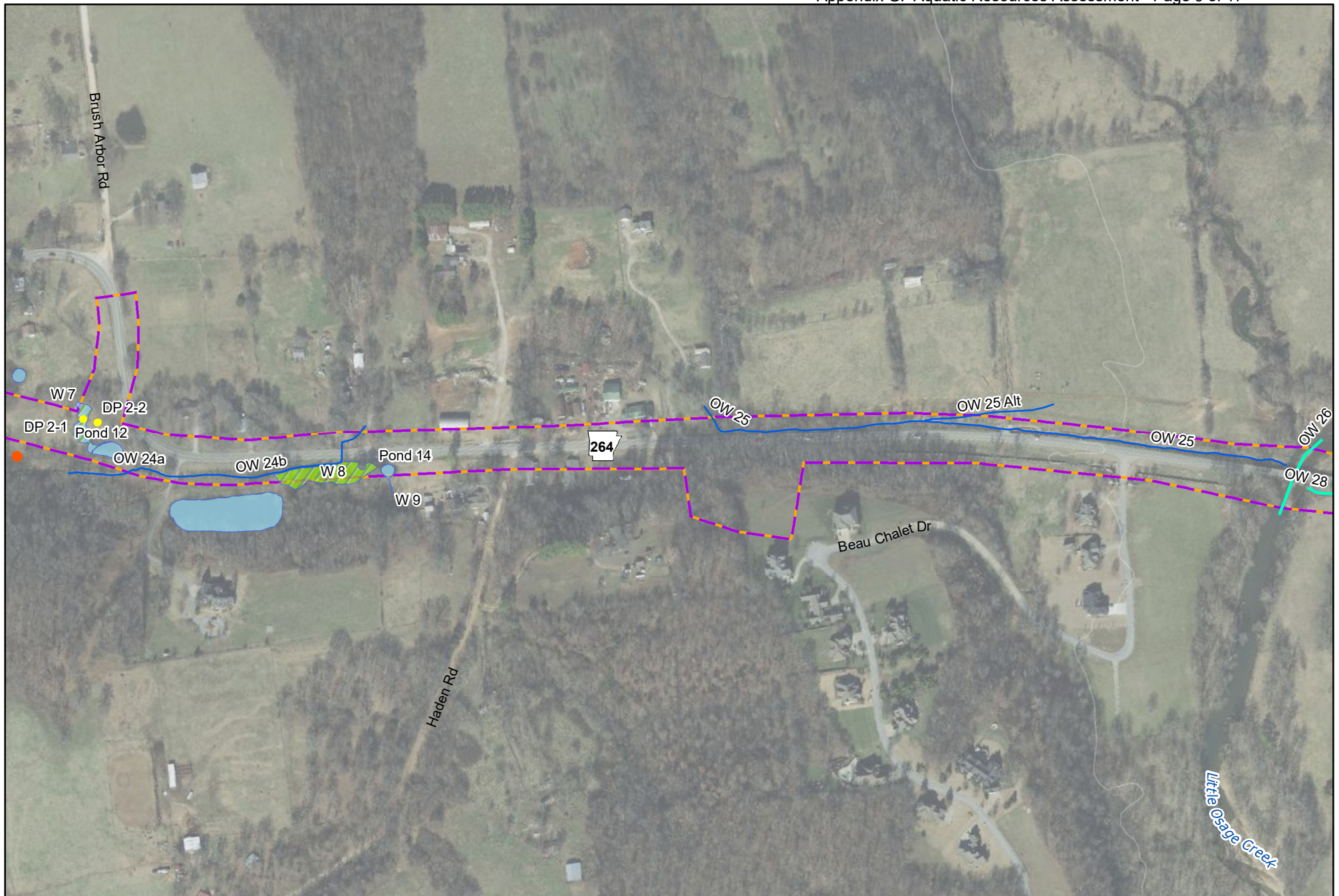
WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery

0 200 400
Feet



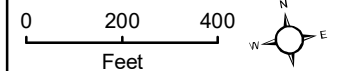
Appendix G-5



Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

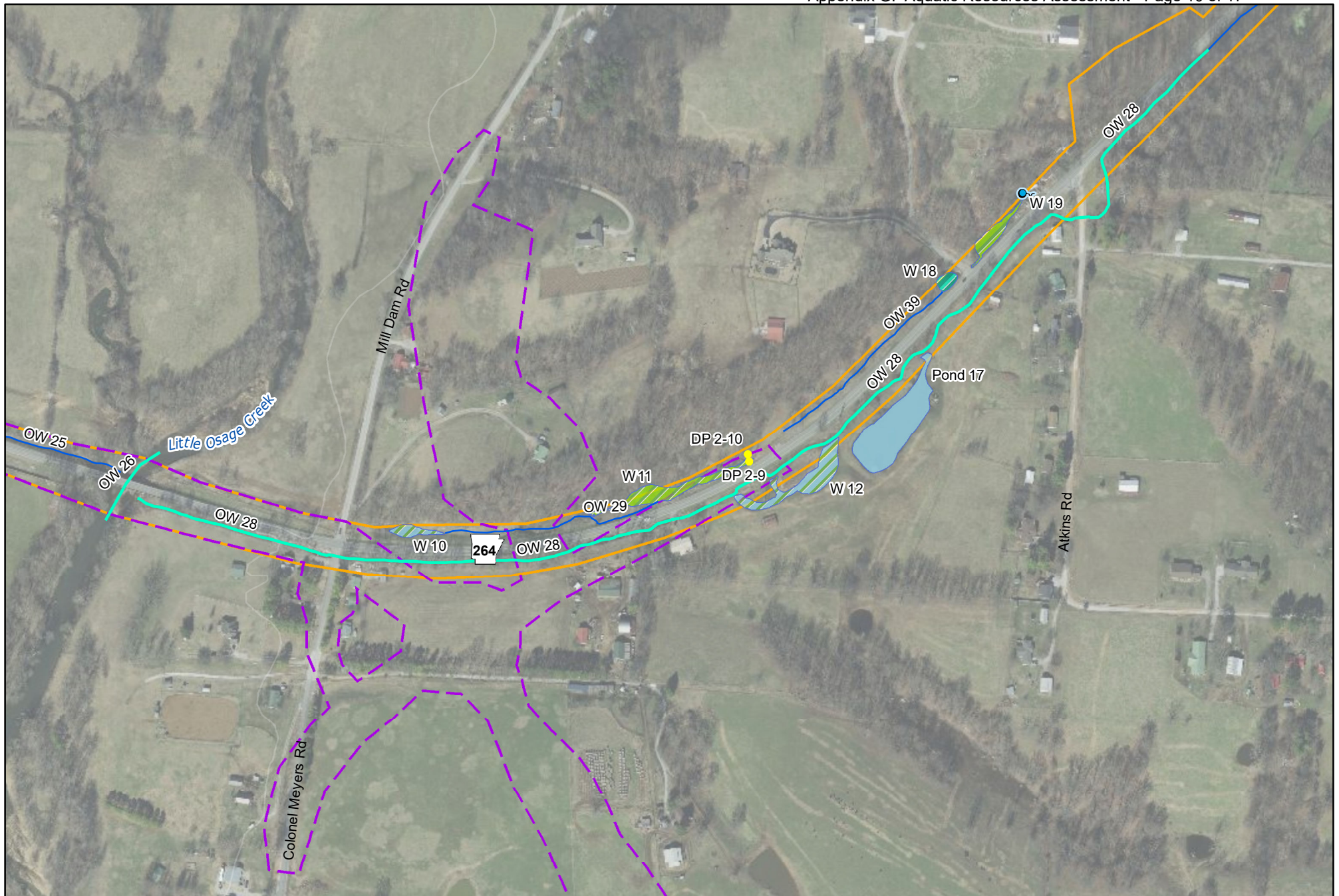
- Observation Point
- Data Point (DP)
- Intermittent Channel
- Pond
- PEM Wetland
- Improve the Existing Highways Alternative
- Partial New Location Alternative
- Perennial Channel
- PFO Wetland

WETLAND DELINEATION DETAIL MAP



Benton County 2019 Aerial Imagery

Appendix G-6

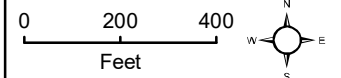


Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

- | | | |
|----------------------|-------------|-------------------------------------------|
| Springs | PEM Wetland | Improve the Existing Highways Alternative |
| Data Point (DP) | PFO Wetland | Partial New Location Alternative |
| Perennial Channel | PUB Wetland | |
| Intermittent Channel | Pond | |

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-7

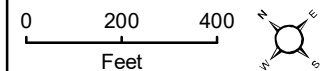


Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

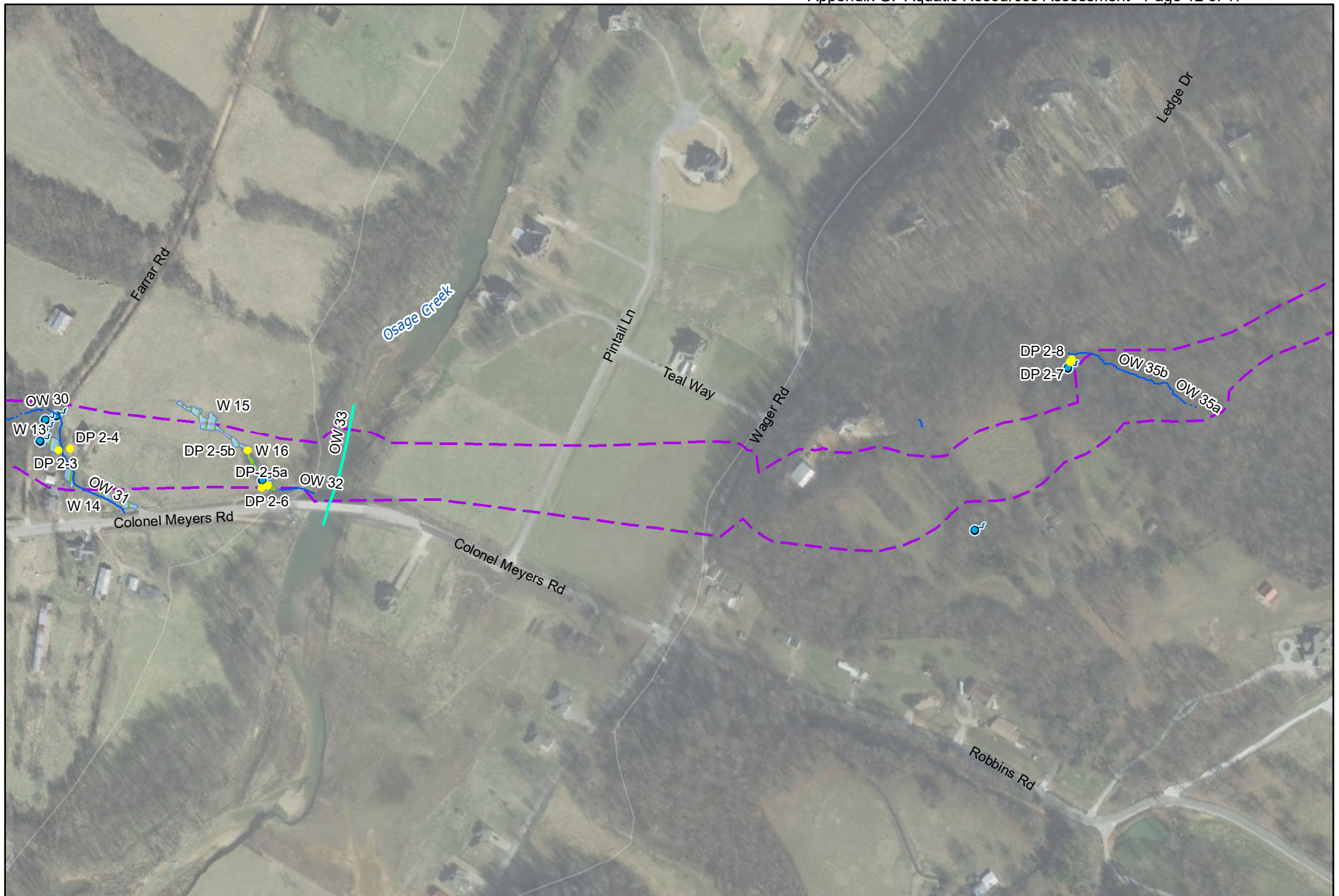
- Springs
- Observation Point
- Data Point (DP)
- Intermittent Channel
- Ephemeral with OHWM
- PEM Wetland
- Pond
- Partial New Location Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-8

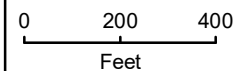


Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

- Springs
- Data Point (DP)
- Perennial Channel
- Intermittent Channel
- Ephemeral with OHWM
- PEM Wetland
- PFO Wetland
- Partial New Location Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-9

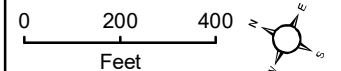


Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

-  Springs
-  Perennial Channel
-  Ephemeral with OHWM
-  Improve the Existing Highways Alternative
-  Partial New Location Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-10

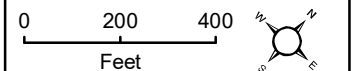


Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

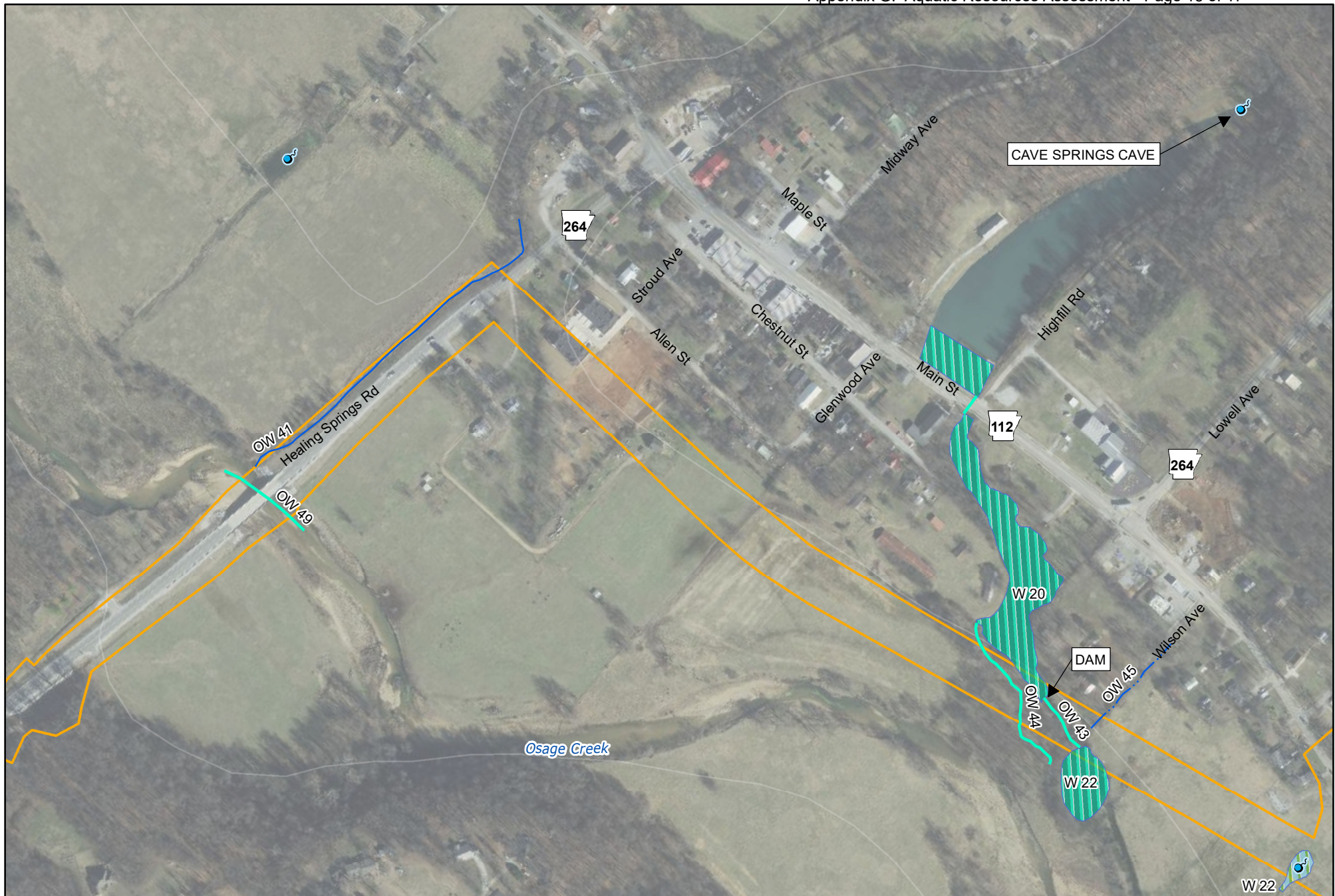
-  Springs
-  Perennial Channel
-  Intermittent Channel
-  Improve the Existing Highways Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-11

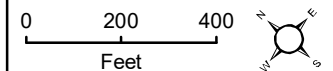


Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

- | | |
|----------------------|-------------------------------------------|
| Springs | PEM Wetland |
| Perennial Channel | PUB Wetland |
| Intermittent Channel | Improve the Existing Highways Alternative |
| Ephemeral with OHWM | |

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-12



Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

- Springs
- Ephemeral with OHWM
- PEM Wetland

- PUB Wetland
- Improve the Existing Highways Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery

0 200 400
Feet



Appendix G-13

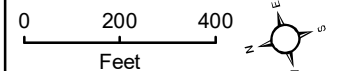


Northwest Arkansas
National Airport Access Road
Benton County, Arkansas

- Perennial Channel
- PEM Wetland
- PFO Wetland
- Improve the Existing Highways Alternative
- Partial New Location Alternative

WETLAND DELINEATION DETAIL MAP

Benton County 2019 Aerial Imagery



Appendix G-14