APPENDIX B
AGENCY COORDINATION

City of Bentonville

Flood Plain Administrator Letter

August 22, 2013

Ms. Bonnie Doggett
CP&Y, Inc.
10415 Morado Circle
Building 1 Suite 200
Austin, TX 78759

Dear Ms. Doggett:

I have reviewed the proposed scope of work outlined in the FEMA PW JPK001D for Declaration No. FEMA 1975 DR AR, more commonly known as the Lake Bella Vista Dam replacement.

The scope of work identifies that the hydraulic capacity of the replacement dam and impounded lake be maintained as close as reasonably possible with existing conditions.

As the Flood Plain Administrator for the City of Bentonville, I am in favor of this project moving forward.

Bentonville is a participating community in the National Flood Insurance Program. As such the City has adopted a Flood Damage Prevention Ordinance. A copy of which can be found on the City of Bentonville Website at www.bentonvillear.com. The project will of course have to comply with the requirements of this ordinance.

Sincerely,

Ben Peters P.E., CFM
City Engineer

Preliminary Jurisdictional Determination Report & USACE Response

www.cpyi.com

Austin Office

10415 Morado Circle
Building I, Suite 200
Austin, TX 78729
Phone: (512) 349-0700
Fax: (512) 349-0727

LETTER OF TRANSMITTAL

TO:

Company: U.S. Army Corps of Engineers, Little Rock District

Address: Regulatory Office
700 W. Capitol

City: Little Rock State: AR Zip Code: 72203

Attention: Ms. Lisa Boyle

Date: Friday, August 2, 2013

Client Project #:

CP&Y Project #: BENT13063

RE: Improvements to Lake Bella Vista Dam Preliminary Jurisdictional Determination Report

Transmitted herewith you will find:

- ☐ Prints
- ☐ Specification
- ☐ Copy of Letter
- ☐ Specification
- ☐ Plans
- ☐ CADD Files
- ☐ Change Order
- ☒ Report
- ☐ Shop Drawings
- ☐ Proofs
- ☐ Samples
- ☐ Photographs
- ☐ Other

No.	Date	Copies	Description
1	August 2013	1	Hardcopy of Preliminary Jurisdictional Determination
1	August 2013	1	CD of Preliminary Jurisdictional Determination

These are being transmitted as indicated below:

- ☐ As Requested
- ☐ For Approval
- ☐ For your Use
- ☐ For your Comments
- ☐ For Bid(s) Use
- ☐ Approved AS IS
- ☐ Approved with Corrections
- ☐ Returned with Corrections
- ☐ Resubmit Copies for Approval
- ☒ For Review
- ☐ Submit Copies for Distribution
- ☐ Return 1 Corrected Copy to CP&Y
- ☐ Return after Loan to CP&Y
- ☐ Other

Additional Comments:

Ms. Boyle,
As discussed, attached is one hard copy and one CD of the Preliminary Jurisdictional Determination Report for the Lake Bella Vista project. Thanks again for attending the Agency Coordination Meeting on July 11th. As always, feel free to contact me bdoggett@cpyi.com or 512-340-9801 with any questions.

Signature: Bonnie Doggett

Printed Name: Bonnie Doggett

Preliminary Jurisdictional Determination Report

Improvements to Lake Bella Vista Dam
Benton County, Arkansas

Prepared by:

CP&Y, Inc.
10415 Morado Circle
Building 1, Suite 200
Austin, Texas 78759

In conjunction with

City of Bentonville

Preliminary Jurisdictional Determination Report

Improvements to Lake Bella Vista Dam
USACE Project No. 2000-16682-1
Benton County, Arkansas

August 2013

Table of Contents

Appendices

Summary

The Lake Bella Vista Dam is located in northwestern Benton County, within the city limits of Bentonville, Arkansas. The exhibits listed below show the project review area and are provided in **Appendix A**. One named watercourse was identified within the project review area: Little Sugar Creek, which flows southeast to northwest through the eight-acre study area and Lake Bella Vista.

- Vicinity Map (**Exhibit A-1**)
- Aerial Photographic Map (**Exhibit A-2**)
- Ordinary High Water Marks (**Exhibit A-3**)
- NRCS Soil Survey (**Exhibit A-4**)
- USGS Topographic Map and FEMA Floodplain (**Exhibit A-5**)
- National Wetlands Inventory (NWI) Map (**Exhibit A-6**)

The City of Bentonville is proposing to replace the existing Lake Bella Vista Dam to preserve the current hydrological conditions of Lake Bella Vista and Little Sugar Creek to the maximum extent practical. Lake Bella Vista is located within Lake Bella Vista Park. At this time, the new dam is proposed to be constructed within the footprint of the existing dam.

The need for this project is based on the fact that the existing Lake Bella Vista Dam was damaged in flood events during 2008, 2011, and 2013 and is now in danger of imminent collapse. There is a need to provide improved functionality and safety to Lake Bella Vista and to maintain the usability of the associated recreation facilities, and to satisfy dam and spillway design criteria.

The specific purpose of the proposed project is to restore the function, safety, and long-term usability of Lake Bella Vista as a park amenity and to satisfy current dam and spillway design criteria of the Arkansas Natural Resources Commission (ANRC). The purpose is also to maintain the currently existing hydrologic conditions of Lake Bella Vista and Little Sugar Creek to the maximum extent practical.

According to the U.S. Army Corps of Engineers' (USACE) Regulatory Guidance Letter (RGL) No. 05-05, the term ordinary high water mark (OHWM) is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

CP&Y personnel conducted a field survey of the Lake Bella Vista Dam Improvement study area in April of 2013. Sub-meter Global Positioning Systems (GPS) data was taken using a Geo XT GeoExplorer Handheld GPS System. GPS data such as OHWM boundaries and the wetland data point location were recorded during the field survey. The 1987 USACE Wetland Delineation Manual along with the 2012 Regional Supplement for the Eastern Mountains and Piedmont Region were used to aid in identifying any jurisdictional wetlands within the vicinity of the project. Waters of the U.S. in the vicinity of the project were also delineated to complete the Preliminary Jurisdictional Determination (PJD) form. A total of approximately 2.20 acres of waters of the U.S. associated with Little Sugar Creek and approximately 1.53 acres of Lake Bella Vista are located within the study area. The OHWMs are shown on **Exhibit A-3**. There are approximately 1,262 linear feet in the study area associated with Little Sugar Creek and tributaries. No wetland areas were identified during the field survey. It should be noted that impacts to waters of the U.S. are not currently identified.

Preliminary Data Gathering and Synthesis

The preliminary jurisdictional determination of Little Sugar Creek and Lake Bella Vista began with a review of available maps and photographs. The United States Geological Survey (USGS) 7.5-minute topographic map for the Bentonville North quadrangle and the U.S. Department of the Interior NWI map for the Bentonville North quadrangle were reviewed to determine locations of potential wet areas and streams. According to the USGS topographic map, Little Sugar Creek is depicted as a perennial stream with a solid blue line. According to the NWI map, there is one water polygon in the vicinity of the study area. The Cowardin classification for this wet area is Lacustrine, Open Water, Permanently Flooded, and Diked/Impounded (L1OWHh). Federal Emergency Management Agency (FEMA) floodplain information on Panel 05007C0090J indicates that the entire study area is located within the 100-year floodplain.

Aerial photographs used for this study are listed below.

- 1968 (USGS), 1980 (USGS), 1996 (USGS), 2006 (USDA), and 2011 (USDA) aerial photographs (**Appendix B**); and
- 2012 City of Bentonville aerial photograph.

Historical aerials of the project review area from five decades were obtained and are included in **Appendix B**. Lake Bella Vista had been formed by the construction of the Lake Bella Vista Dam prior to 1968. US Highway 71 was already constructed to the west of Lake Bella Vista Park, running north to south. Extensive residential development to the east and west of the study area had already begun. An island towards the west of the Lake Bella Vista was not connected to the shoreline by a raised path until 2006. This is also the first aerial photo where extensive development to the north of the study area is visible.

According to the US EPA, the study area is located within the Level III Ozark Highlands ecoregion. Habitat diversity and species richness within this ecoregion are notably high. Historic vegetation found throughout the ecoregion is typically oak-hickory forest. Open forests are common on rugged terrain whereas pastureland and hay crops are common on more level sites. Shortleaf pine grows on steep escarpments and glades dominated by grass and eastern red cedar are found on shallow soils. Within the Ozark Highlands, the study area is located within the Level IV Springfield Plateau ecoregion. This ecoregion has upland areas dominated by oak-hickory and oak-hickory-pine forests. Savannas and tall grass prairies historically also occurred within this area and were maintained by fire. Much of the historic vegetation within this ecoregion has been replaced by agriculture and expanding residential areas (EPA, 2013).

Current land use in the vicinity appears to be primarily residential, agricultural, and undeveloped. There are residential neighborhoods to the east of the study area as well as to the west across US Highway 71. To the north and south there are commercial complexes. The Natural Resources Conservation Society (NRCS) soil survey for Benton County reveals that there are three different types of soils in the project review area. Most of Little Sugar Creek lies within the Secesh gravelly silt loam, occasionally flooded soil (Se). There are also Waben very gravelly silt loam, 3-8% slopes (WeC) and Captina silt loam, 3-8% slopes (CnB) within the study area. The Secesh gravelly silt loam and Captina silt loam are both considered hydric (**Exhibit A-4**). Geographic Information Systems (GIS) was used to determine locations of watercourses, analyze OHWMs, interpret land use, and prepare field maps and exhibits.

Routine Determination

Field Investigations

The study area was surveyed on April 2 and 3, 2013. Photographs of the project site are provided in **Appendix E**. Indicators listed in 33 CFR 328.3(e) and the USACE's RGL 05-05 were used in delineating the OHWM of Little Sugar Creek and Lake Bella Vista. In some areas, a clear natural line was observed on the banks of the creek bed and lake. Shelving was also observed along the OHWM. Another indicator of an OHWM is the destruction of terrestrial vegetation. When vegetation is present on a bank, a key indicator of the OHWM is the destruction or lack of terrestrial (FAC- to UPL indicator status) vegetation below a certain line. This was observed along the OHWM within the study area.

Sub-meter GPS data was taken during the field investigations using a Geo XT GeoExplorer Handheld GPS System. GPS data such as locations of OHWM boundaries, drift lines, and a soil data point were recorded during the field surveys. The general methodology of the field investigations was walking the entire length of each channel, recording the OHWM along each channel and the lake, recording GPS data, completing one wetland data form, and taking photographs and notes within the study area.

Along the west side of Little Sugar Creek, downstream of the dam, there are various years of concrete placed. Since this was completed before the City of Bentonville owned the property, it is assumed that concrete was placed in this area to prevent erosion. Additional places within the study area have rock or concrete alongside the waterways, presumably for erosion control purposes. It was evident after the field event that erosion is a substantial problem in the study area. In addition, seeps within the dam embankment and overtopping from flooding are causing erosion which widens Little Sugar Creek.

Identification and Delineation of Potential Waters of the US, including Wetlands

Delineation fieldwork on the project site was conducted on April 2 and 3, 2013. The 1987 USACE Wetland Delineation Manual along with the Regional Supplement for the Eastern Mountains and Piedmont Region were used to aid in identifying any jurisdictional wetlands within the vicinity of the project. Waters of the U.S. in the vicinity of the project were also delineated. No wetlands were observed in the study area during the field visits. A PJD form for the project review area includes additional information and is included in **Appendix D**.

Conditions Documented Within the Project Site

Vegetation

A vegetative species survey was completed during the field visit. The following tree and shrub species were observed within the project review area:

- Black walnut (*Juglans nigra*)
- Wild cherry (*Prunus serotina*)
- Chinese privet (*Ligustrum sinense*)
- Honey locust (*Gleditsia triacanthos*)
- Box elder (*Acer negundo*)
- Maple (*Acer* sp.)
- Osage orange (*Maclura pomifera*)

The following vine species were observed within the project review area:

- Grape (*Vitis* sp)
- Saw greenbrier (*Smilax bona-nox*)

The following herbaceous and grass species were observed within the project review area:

- Poison ivy (*Toxicodendron radicans*)
- Flannel mullein (*Verbascum thapsus*)
- Poison hemlock (*Conium maculatum*)
- Bedstraw (*Galium* sp.)
- Rough cocklebur (*Xanthium strumarium*)
- Poke salad (*Phytolacca* sp.)
- Wild rye (*Elymus canadensis*)

Hydrology

Little Sugar Creek is a tributary of the Elk River, originating approximately 20 miles to the east of the proposed study area adjacent to the western shore of Beaver Lake. It flows in a westerly direction, turning northwest approximately four miles to the southeast of the study area. It flows through Lake Bella Vista and continues a generally northwesterly course until discharging into the Elk River approximately 16 miles to the northwest of the study area. According to the topographic map and the USGS National Hydrography Dataset, this creek is perennial. Flowing water was observed in Little Sugar Creek and the tributaries during the April 2013 field survey. Within the study area, OHWMs ranged in width from 13 to 160 feet. The study area is located within the FEMA 100-year floodplain, as seen on **Exhibit A-5**.

Soils

The NRCS soil survey for Benton County was used to determine the soil types in the study area (**Tables 1 and 2**). According to the National Soils List for Arkansas which is maintained by the NRCS, two of these soils are listed as hydric. **Exhibit A-4** shows the soils in the study area.

Table 1. Soil Types

General Soil Type	Texture and Drainage	General Location	Percent of County
Linkers-Enders-Mountainberg association	Stony and loam soils	Hills and mountains	2%

Table 2. Mapping Units

Mapping Unit	Permeability	Drainage Class	Listed as Hydric by NRCS
Secesh gravelly silt loam, occasionally flooded soil (Se)	1.0" – 2.5”/hr	Well drained	Yes
Captina silt loam, 3-8% slopes (CnB)	<0.5”/hr	Moderately well drained	Yes
Waben very gravelly silt loam, 3-8% slopes (WeC)	2.5" –5”/hr	Well drained	No

A soil data point was taken within the study area north of Lake Bella Vista Dam (**Exhibit A-4**). A soil sample was taken to a depth of 16 inches. Soil texture from the ground surface to 16 inches is loamy and color is dark brown, 7.5YR 3/2, which was determined using the Munsell Soil Color Chart. This soil data is included in the wetland data form in **Appendix C**.

Principal Findings of the Field Investigations

A wetland data form was completed in the study area north of Lake Bella Vista Dam. The wetland data form is provided in **Appendix C**. This location is classified as an upland area. No wetlands were observed within the study area. As seen on **Exhibit A-3**, two jurisdictional waters of the U.S. were delineated within the study area: Little Sugar Creek (along with associated tributaries) and Lake Bella Vista. Limits of the OHWM within the study area were recorded in the field using a sub-meter GPS unit and were later transferred into GIS to analyze and measure. Indicators that were used in delineating the OHWMs included shelving, the presence of a clear natural line, and the absence of terrestrial vegetation. Within the study area, Little Sugar Creek makes up approximately 1,262 linear feet of potential waters of the U.S. There are a total of approximately 2.20 acres from Little Sugar Creek and 1.53 acres from Lake Bella Vista of potential waters of the U.S. in the study area (**Table 3**). An effort would be made to avoid and minimize any impacts caused by the proposed improvements.

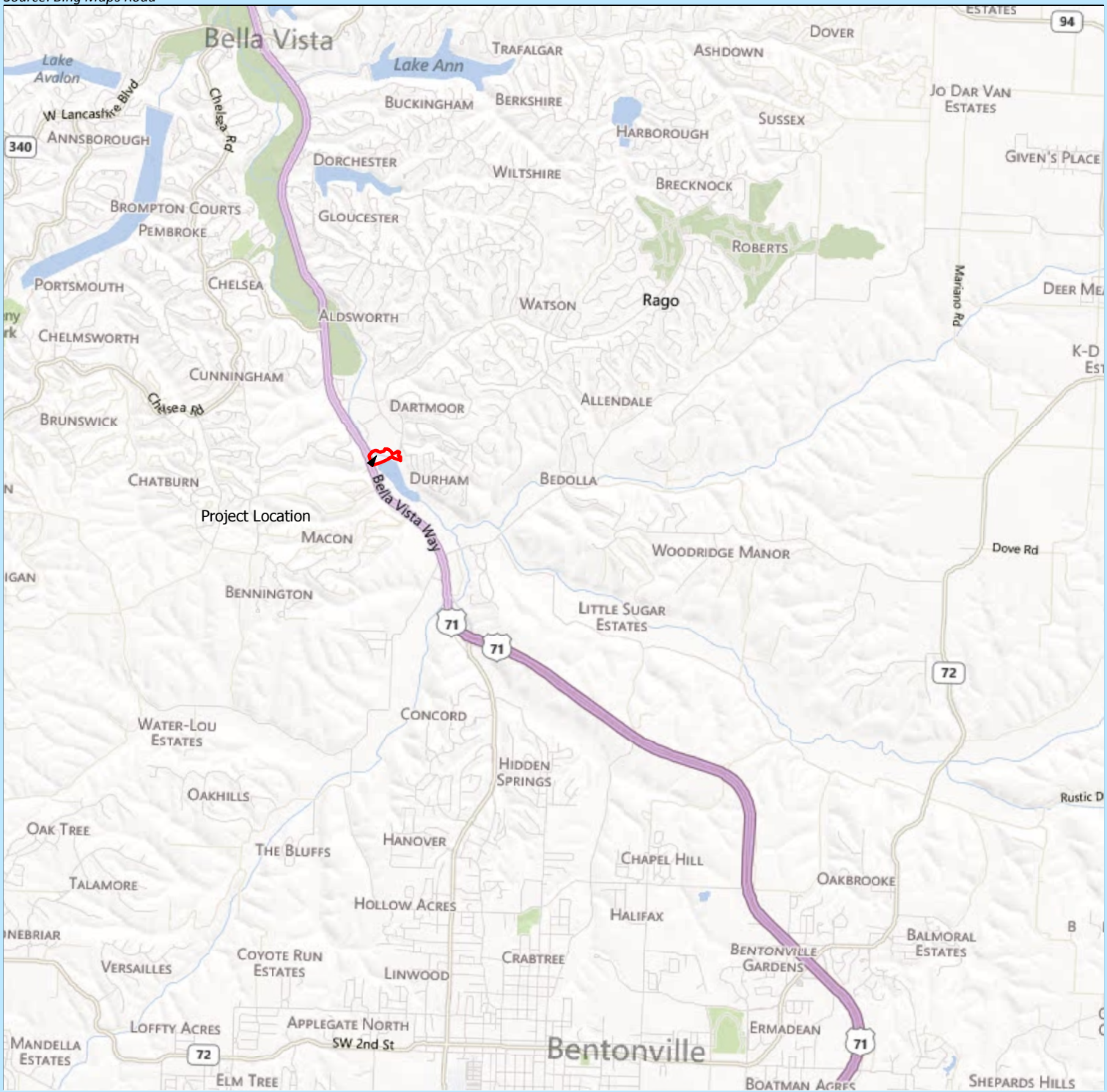
In CP&Y's professional opinion, the creek, its tributaries, and the lake satisfy the criteria to be waters of the U.S. pursuant to the 1987 USACE Wetland Delineation Manual and 2012 Regional Supplement for the Eastern Mountains and Piedmont Region, subject to confirmation by USACE and/or other pertinent regulatory staff.

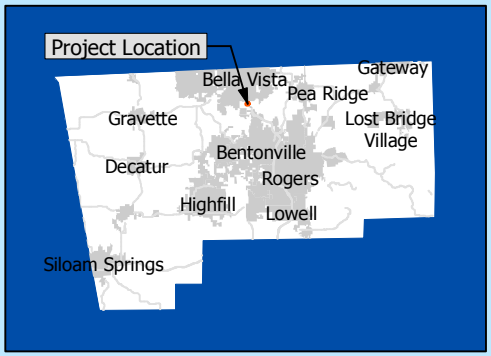
Table 3. Potential Waters of the United States within the Project Review Area

Little Sugar Creek	RPW	Perennial	423 LF	Varies from 65-115 ft	2.20 acre
Little Sugar Creek East	RPW	Perennial	495 LF	90-160 ft	
Tributary to Little Sugar Creek	RPW	Perennial	344 LF	13-151 ft	
Lake Bella Vista	N/A	N/A	N/A	N/A	1.53 acre

** RPW – Relatively Permanent Water*

Source: Bing Maps Road





PJD Study Area

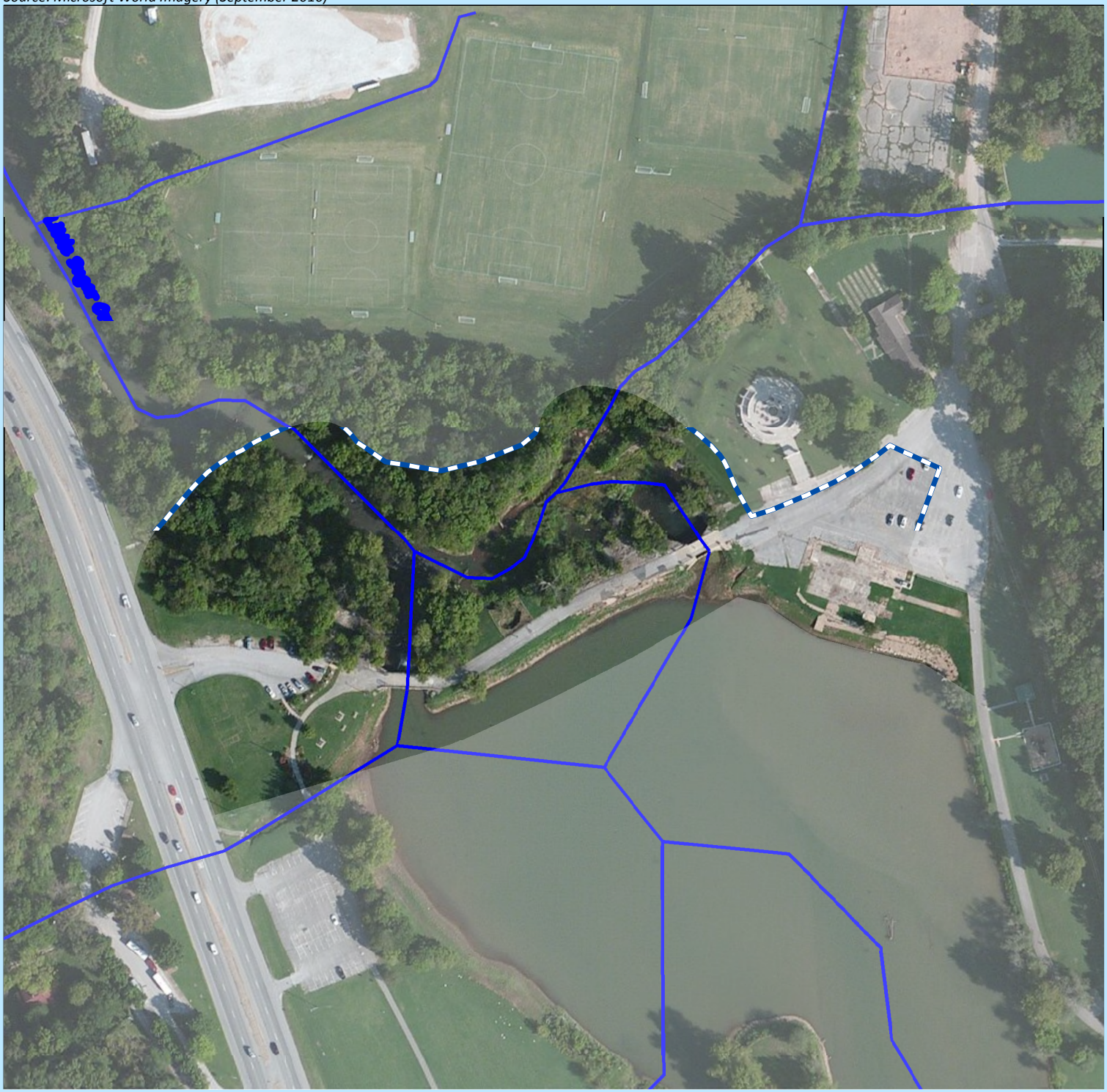
0 0.5 1 2

Miles

Vicnity Map

EXHIBIT A-1

Source: Microsoft World Imagery (September 2010)



Source: Microsoft World Imagery (September 2010)

PJD Study Area

Wetland Data Point

Potential Waters of the U.S.

Open Water (1.35 ac)

Perennial (2.20 ac)

Little Sugar Creek (423 LF)

Little Sugar Creek East (495 LF)

Tributary to Little Sugar Creek East (344 LF)

0 75 150 300

Feet

N

Potential Waters of the U.S.

EXHIBIT A-3

Source: Microsoft World Imagery (September 2010)

PJD Study Area

Natural Resources Conservation Service Soil Boundary

Hydric Soil

CnB - Captina silt loam, 1-3% slopes, hydric within depressions
Se - Secesh gravelly silt loam, occasionally flooded, hydric within depressions
W - Water
WeC - Waben very gravelly silt loam, 3-8% slopes

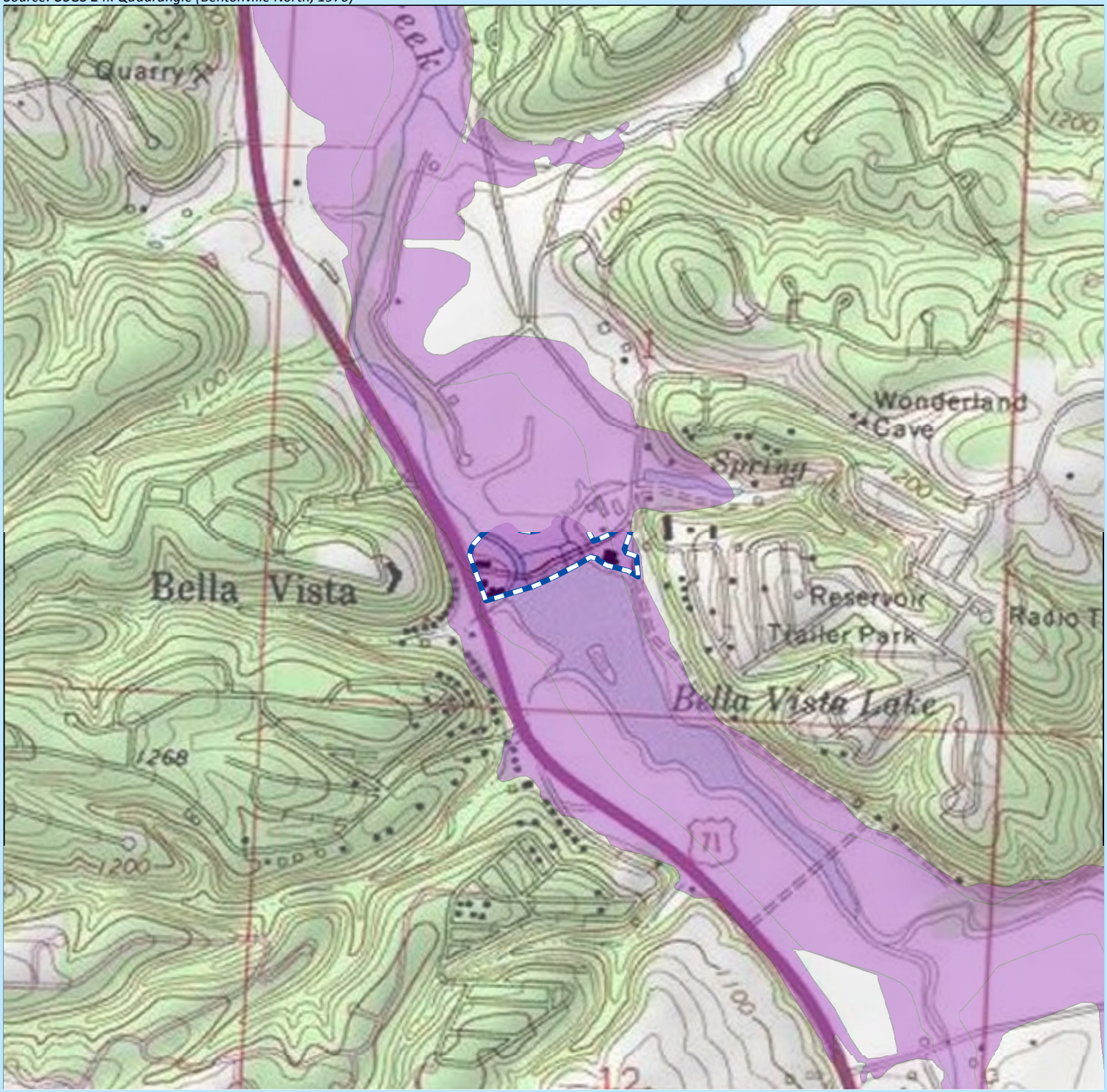
0 75 150 300
Feet

N

NRCS Soil Survey

EXHIBIT A-4

Source: USGS 24k Quadrangle (Bentonville North, 1970)



PJD Study Area

Federal Emergency Management Agency (FEMA) 100-yr Floodplain

0 500 1,000 2,000

Feet

N

USGS Topographic Map & FEMA Floodplain

EXHIBIT A-5

Source: Microsoft World Imagery (September 2010)

National Wetlands Inventory Map

EXHIBIT A-6

Appendix B – Historical Aerial Photographs

GeoSearch
On time. On target. In touch.™

Historical Aerial Photographs

http://www.geo-search.net/QuickMap/index.htm?DataID=Standard0000055050

Click on link above to access the map and satellite view of current property

Target Property:

Lake Bella Vista
BELLA VISTA, Benton County, Arkansas 72714

Prepared For:

CP&Y,Inc.

Order #: 24003
Job #: 55050
Date: 03/28/2013

TARGET PROPERTY SUMMARY

Lake Bella Vista
BELLA VISTA, Benton County, Arkansas 72714

USGS Quadrangle: ***Bentonville North, AR***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-94.229576, 36.434395), (-94.229576, 36.434395), (-94.230122, 36.434254), (-94.230667, 36.433849), (-94.230839, 36.433709), (-94.233021, 36.433116), (-94.232304, 36.431324), (-94.228516, 36.432664), (-94.228220, 36.433116), (-94.228189, 36.433802), (-94.228500, 36.434161), (-94.228719, 36.434286), (-94.229124, 36.434426), (-94.229576, 36.434395)

County/Parish Covered:
Benton (AR)

Zipcode(s) Covered:
Bella Vista AR: 72714

State(s) Covered:
AR

****Target property is located in Radon Zone 2.***
Zone 2 areas have a predicted average indoor radon screening level between 2 and 4 pCi/L (picocuries per liter).

N
W E
S

JOB #: 55050 - 3/28/2013

SITE: *LAKE BELLA VISTA*
SOURCE: *USDA*
DATE: *2011*
COUNTY: *BENTON, AR*
SCALE: *1" = 700'*

GeoSearch

N
W E
S

JOB #: 55050 - 3/28/2013

SITE: ***LAKE BELLA VISTA***
SOURCE: ***USDA***
DATE: ***2006***
COUNTY: ***BENTON, AR***
SCALE: ***1" = 700'***

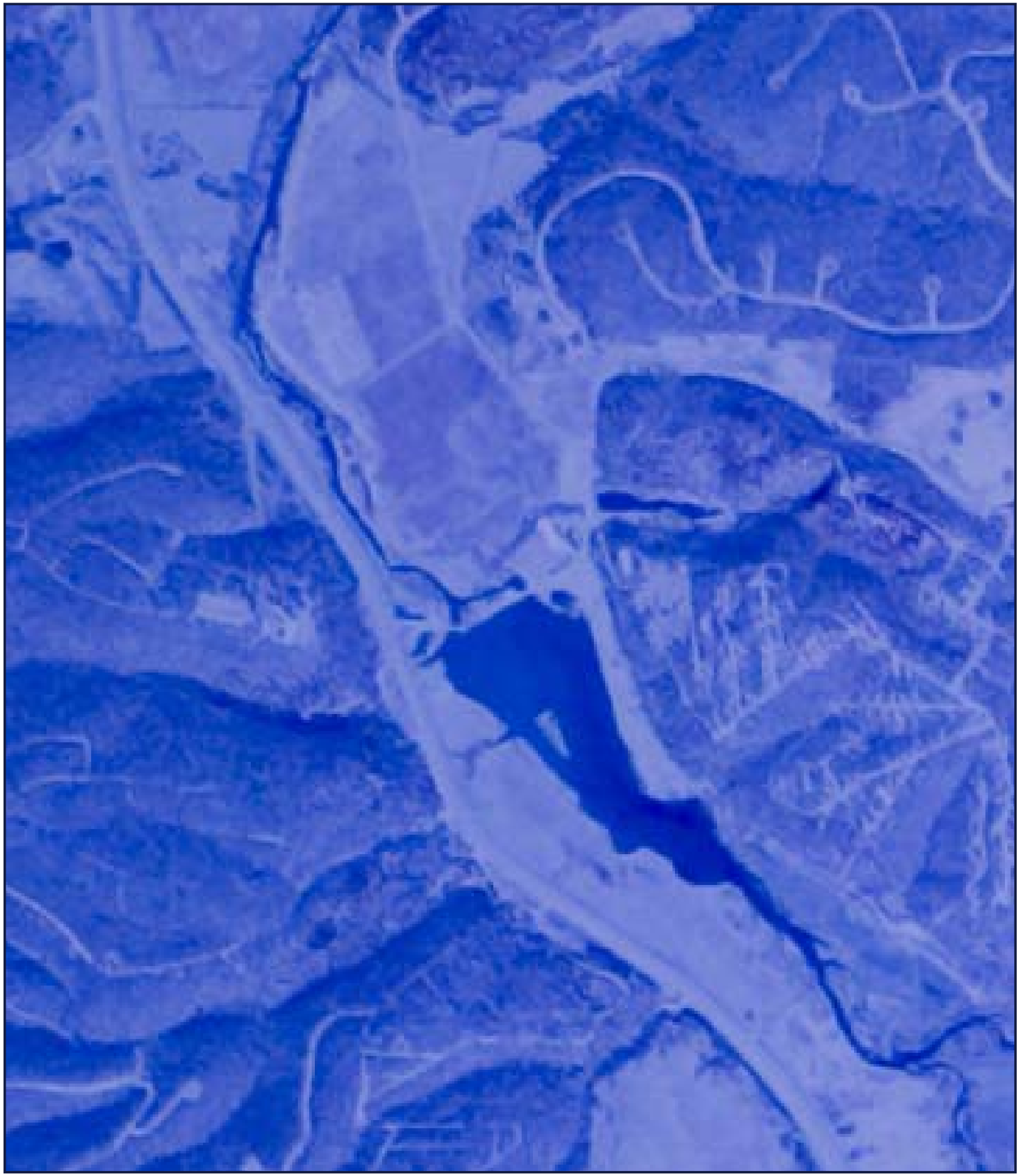
GeoSearch

N
W E
S

JOB #: 55050 - 3/28/2013

SITE: *LAKE BELLA VISTA*
SOURCE: *USGS*
DATE: *03-26-96*
COUNTY: *BENTON, AR*
SCALE: *1" = 700'*

GeoSearch



N
W E
S

JOB #: 55050 - 3/28/2013

SITE: *LAKE BELLA VISTA*
SOURCE: *USGS*
DATE: *03-18-80*
COUNTY: *BENTON, AR*
SCALE: *1" = 700'*

GeoSearch

N
W E
S

JOB #: 55050 - 3/28/2013

SITE: ***LAKE BELLA VISTA***
SOURCE: ***USGS***
DATE: ***03-01-68***
COUNTY: ***BENTON, AR***
SCALE: ***1" = 700'***

GeoSearch

Appendix C – Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Lake Bella Vista Dam City/County: Benton County Sampling Date: April 3, 2013

Applicant/Owner: City of Bentonville State: AR Sampling Point: Up-1

Investigator(s): Bonnie Doggett, Kathryn St. Clair (CP&Y) Section, Township, Range: S1-T20N-R31W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): _____ Slope (%): 3

Subregion (LRR or MLRA): LRR N Lat: 36.433471 Long: -94.23044 Datum: NAD 83

Soil Map Unit Name: Se - secesh gravelly silt loam, occasionally flooded 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 _____, 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 _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Drift deposits were observed around the data point due to previous flooding events.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: Up-1

Tree Stratum (Plot size: 10 ft. radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	40	Y	FACU
2. Prunus serotina	20	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 4 ft. radius)			
1. Ligustrum sinense	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	= Total Cover	
Herb Stratum (Plot size: 4 ft. radius)			
1. Verbascum thaspus	10	Y	FACU
2. Elymus canadensis	7	Y	FACU
3. Galium aparine	5	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	22	= Total Cover	
Woody Vine Stratum (Plot size: 4 ft. radius)			
1. Vitis sp.	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
	5	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	1	x 3 =	3
FACU species	6	x 4 =	24
UPL species	0	x 5 =	0
Column Totals:	7 (A)		27 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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 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

Remarks: (Include photo numbers here or on a separate sheet.)

Smaller plot size was due to being approximately four feet from the ordinary high water mark

SOIL

Sampling Point: Up-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR 3/2		N/A				loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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) **(LRR N, MLRA 147, 148)**
- ___ 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 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]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:

Appendix D – Preliminary Jurisdictional Determination Form

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): July 31, 2013

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD: Ben Peters, P.E., City Engineer, 305 SW A Street, Bentonville, AR 72712

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Little Rock, Proposed Improvements to Lake Bella Vista Dam project, DA# 2000-16682-1

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: Project is located on US Highway 71 within the city limits of Bentonville, Arkansas. It is south of the intersection US 71 and Blowing Spring Road and north of the intersection of US 71 and Peach Orchard Road.

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: Arkansas County: Benton City: Bentonville
Center coordinates of site (lat/long in degree decimal format): Lat. 36.432686° N, Long. -94.231068°W.
Universal Transverse Mercator: 15N
Name of nearest water body: Lake Bella Vista and Little Sugar Creek

Identify (estimate) amount of waters in the review area:
Non-wetland waters: Approximately 1,262 linear feet / 3.41 acres (1.21 open water, 2.20 perennial)
Cowardin Class: L1OWHh and R2OWH
Stream Flow: Perennial
Wetlands: None
Cowardin Class: L1OWHh

Name of any water bodies on the site that have been identified as Section 10 waters: None
Tidal:
Non-Tidal:

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

☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to

request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

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 approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that 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) that 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) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (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 preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes 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 approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, 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, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: CP&Y, Inc.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

- ☐ Office concurs with data sheets/delineation report.
- ☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: .

☐ Corps navigable waters' study: .

☒ U.S. Geological Survey Hydrologic Atlas: .

- ☒ USGS NHD data.
- ☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name: Bentonville North, 1" = 24,000'.

☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Benton County.

☒ National wetlands inventory map(s). Cite name: Bentonville North, 1980.

☐ State/Local wetland inventory map(s): .

☒ FEMA/FIRM maps: Panels 05007C0090J.

☒ 100-year Floodplain Elevation is: 1,033' (USGS Topographic Map)

☒ Photographs: ☒ Aerial (Name & Date): Microsoft World Imagery (September 2010)

or ☒ Other (Name & Date): Historical aerial imagery (USDA, 2011, 2006; USGS 1996, 1980, 1968)

☐ 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 Project Manager
(REQUIRED)

7-31-13

Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)

Appendix E – Photo Log

PHOTO LOG

Photo 1: Lake Bella Vista Dam west side facing downstream.

Photo 2: Lake Bella Vista Dam west side facing upstream.

Photo 3: Road crossing Lake Bella Vista Dam, facing east.

Photo 4: Little Sugar Creek downstream of Lake Bella Vista Dam.

Photo 5: Lake Bella Vista upstream of Lake Bella Vista Dam during a rain event.

Photo 6: Lake Bella Vista

Photo 7: Little Sugar Creek facing upstream.

Photo 8: Little Sugar Creek facing downstream.

Photo 9: Lake Bella Vista Dam east side looking upstream

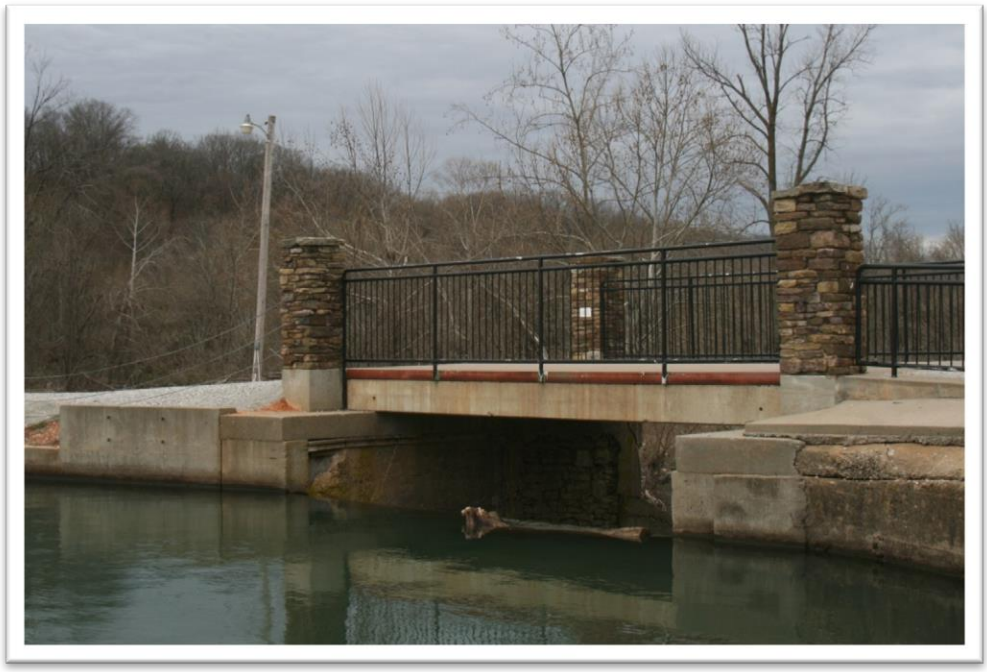


Photo 10: Lake Bella Vista Dam east side looking downstream

DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867
www.swl.usace.army.mil/

December 10, 2013

Regulatory Division

FILE No. **2000-16682-1**

Ms. Bonnie Doggett
CP&Y, Inc.
10415 Morado Circle
Building 1, Suite 200
Austin, Texas 78759

Dear Ms. Doggett:

Please refer to your preliminary jurisdictional determination report received August 5, 2013, concerning a waters of the United States determination of Lake Bella Vista and downstream environs, in section 1, T. 20 N., R. 31 W., Bella Vista, Benton County, Arkansas. This letter will provide information on the extent of the waters of the United States, including wetlands, on the property and the Department of the Army permit requirements pursuant to Section 404 of the Clean Water Act (33 U.S. Code 1344).

My review of your report and virtual site inspection revealed that the property may contain areas that meet the definition of waters of the United States, as determined by the 1987 Corps of Engineers Wetlands Delineation Manual and Regional Supplements, appropriate guidance, and Department of the Army regulations. Approximately 1,262 linear feet of stream were identified. No wetlands were observed onsite. The approximate location of these areas is shown on the enclosed map of the site.

This letter contains Preliminary Jurisdictional Determination for your subject site. If you object to this determination, you may request an Approved Jurisdictional Determination under Corps regulations at 33 Code of Federal Regulations (CFR) Part 331.

Please be advised that the discharge of dredged or fill material in waters of the United States, including wetlands, requires a Department of the Army permit prior to beginning work in most situations. A permit is required pursuant to Section 404 of the Clean Water Act and Corps of Engineers implementing regulations, 33 Code of Federal Regulations (CFR) 320 - 332. 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 routinely require a permit. All of these activities involve the discharge of dredged or fill material in waters of the United States.

In the event you wish to apply for a permit, you may visit our website at http://www.swl.usace.army.mil/Missions/Regulatory/ApplyingforaPermit.aspx. The website

briefly describes the Corps regulatory process and how to fill out an application. Please note the drawing requirements and checklist. These instructions are designed to insure the submittal of a good, understandable application and drawings of your project. Plan and cross section drawings should be on 8 1/2- by 11-inch paper. Our acceptance of an application does not necessarily mean it will be approved.

This determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request.

Your cooperation in the Regulatory Program is appreciated. If you have any questions, please contact me at (501) 324-5295 and refer to No. **2000-16682-1**.

Sincerely,

Lisa Boyle
Project Manager

Enclosures

cc:
Beaver Lake PO, w/cy dwgs
Ch, Regulatory Enf, w/cy dwgs

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): August 5, 2013

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Ms. Bonnie Doggett
CP&Y, Inc.
10415 Morado Circle
Building 1, Suite 200
Austin, TX 78759

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: CESWL-RD, Trailblazers of Bella Vista, 2000-16682

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: (USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: Arkansas County: Benton City: Bella Vista

Center coordinates of site: Universal Transverse Mercator:

NAD 83/UTM Zone 15, 4032672 Northing, 389676 Easting

Authority: ☑ Section 404 ☐ Section 10

Name of nearest waterbody: Lake Bella Vista

Identify (estimate) amount of waters in the review area:
Non-wetland waters: linear feet: width (ft) and/or 1.53 acres.
Cowardin Class: Lacustrine
Stream Flow:
Wetlands: acres.
Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:
Tidal: N/A
Non-Tidal:

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

☑ Office (Desk) Determination. Date: 12/06/2013

☐ Field Determination. Date(s):

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: see delineation submitted August 5, 2013.

☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

- ☑ Office concurs with data sheets/delineation report.
- ☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: .

☐ Corps navigable waters' study: .

☑ U.S. Geological Survey Hydrologic Atlas: .

- ☑ USGS NHD data.
- ☑ USGS 8 and 12 digit HUC maps.

☑ U.S. Geological Survey map(s). Cite scale & quad name: 1:24K Bentonville North.

☑ USDA NRCS Soil Survey. Citation: Arkansas_Soils

☐ National wetlands inventory map(s). Cite name: .

☐ State/Local wetland inventory map(s): .

☑ FEMA/FIRM maps: see delineation submitted August 5, 2013.

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☑ Photographs: ☑ Aerial (Name & Date): Bing Maps hybrid accessed 12/06/2013; others in delineation submitted August 5, 2013.

or ☐ Other (Name & Date): .

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

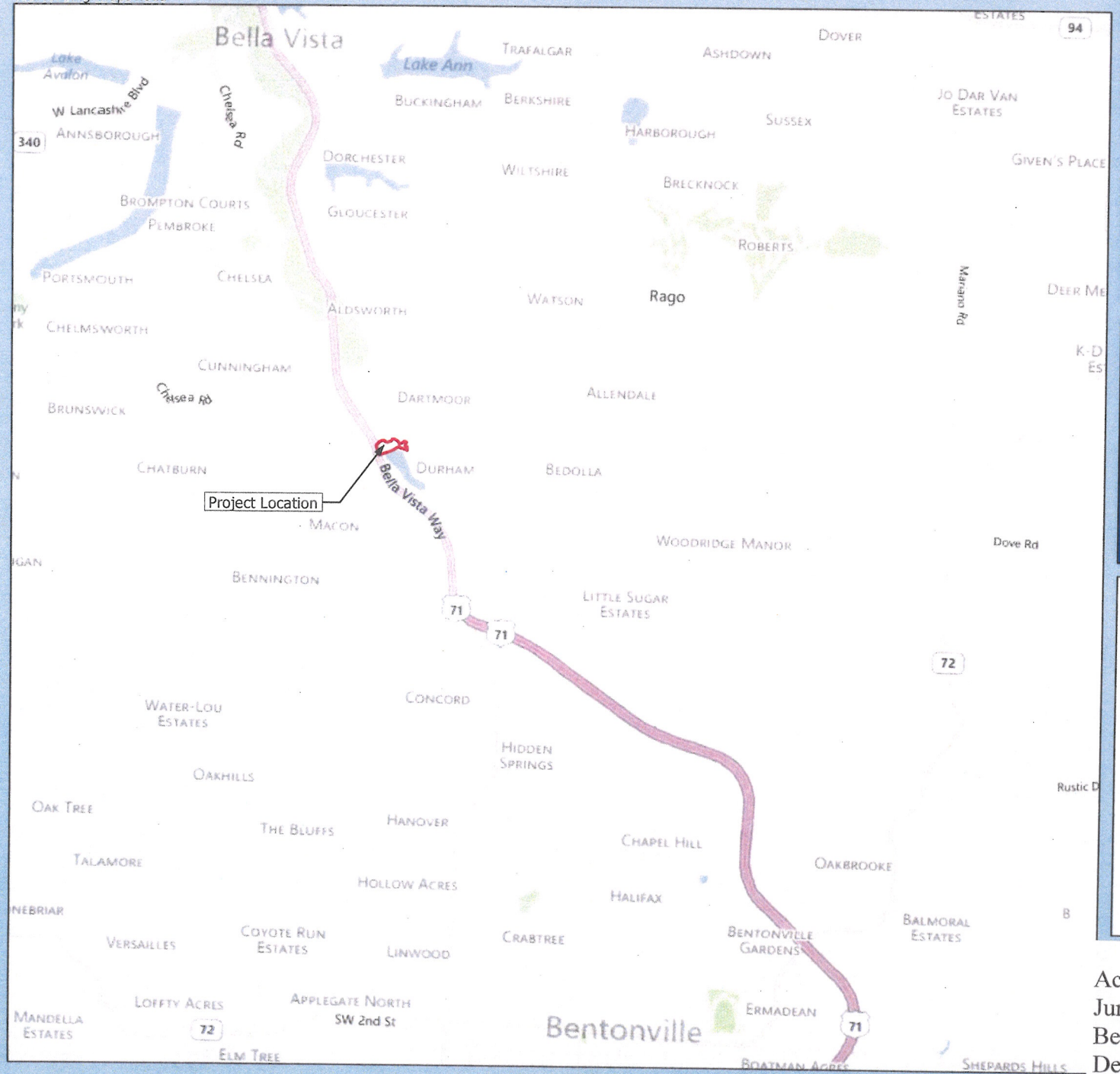
☐ Other information (please specify): .

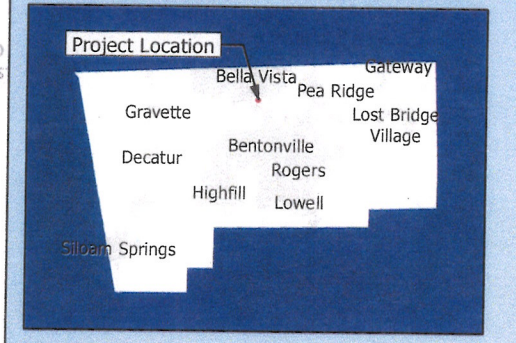
IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

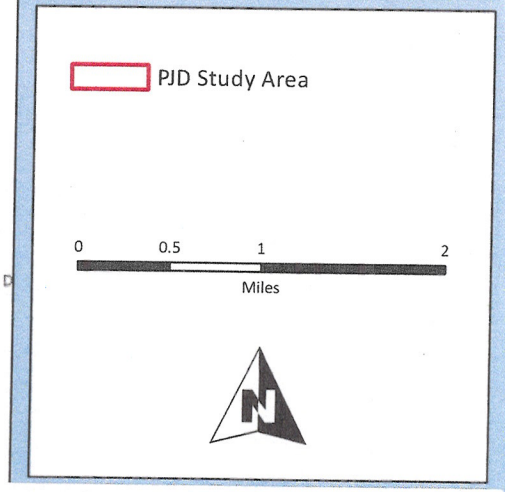
12/10/13
Signature and date of
Regulatory Project Manager
(REQUIRED)

Bonnie Doggett 12/17/13
Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)

Source: Bing Maps Road







Action ID **SWL-2000-16682-1**
Jurisdictional Determination
Bella Vista, Arkansas
December 2013

Sheet 1 of 2

Source: Microsoft World Imagery (September 2010)

PJD Study Area

Wetland Data Point

Potential Waters of the U.S.

Open Water (1.35 ac)

Perennial (2.20 ac)

Little Sugar Creek (423 LF)

Little Sugar Creek East (495 LF)

Tributary to Little Sugar Creek East (344 LF)

0 75 150 300

Feet

N

Action ID **SWL-2000-16682-1**
Jurisdictional Determination
Bella Vista, Arkansas
December 2013 Sheet 2 of 2

Threatened and Endangered Species

Report & FEMA Response

City of Bentonville Improvements to Lake Bella Vista Dam

Threatened and Endangered Species Report

Benton County, Arkansas

August 2013

FEMA

Federal Emergency Management Agency
Department of Homeland Security
500 C Street, SW
Washington, DC 20472

This document was prepared by:

CP&Y, Inc.
The Avallon, Building I
10415 Morado Circle, Suite 200
Austin, Texas 78759

Prepared for:

FEMA Region 6 Office
Denton, Texas

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APPENDICES

1.0 INTRODUCTION

1.1 Project Authority

Lake Bella Vista Dam, located on Little Sugar Creek, is owned by the City of Bentonville, Arkansas (the "City"). Significant flooding that occurred along the creek in March 2008 resulted in the dam overtopping and causing erosion along the entire 410-foot long downstream slope, and a partial breach. The erosion at the toe of the dam caused a progressive slope failure of an 80-foot wide section of the downstream slope near the west spillway. Toe erosion along the east section of the dam resulted in loss of support beneath the concrete slope cover, leading to extensive breakage and cracking of the concrete cover on the downstream embankment. The water flow beneath the damaged concrete caused erosion of embankment soils. Extensive erosion along the toe and embankment resulted in a slump forming along the crest near the east spillway. Further settlement and cracking resulted in potholes and the washing away of asphalt pavement from the crest of the dam. The structure poses a serious safety risk in the event of another flood and overtopping event such as what occurred on April 19, 2013 when heavy rains caused Little Sugar Creek to flood resulting in another overtopping of Lake Bella Vista Dam (Heard, Arkansas Democrat Gazette, 2013). The dam is classified as a small, high-hazard structure under dam safety regulations of the Arkansas Natural Resources Commission (ANRC).

1.2 Project Location

Lake Bella Vista Dam is located along US Route (US) 71 within Bentonville's city limits within Benton County in northern Arkansas. This dam, constructed circa 1918, created Bella Vista Lake, which was subsequently used for recreational purposes. The dam is located in Lake Bella Vista Park , just south of the town of Bella Vista (Figure 1 and Figure 2). The park is bounded by Veterans Way, Cold Cave Road, and US 71 (Bella Vista Way). The dam is crossed by the Lake Bella Vista Trail, which is used for walking, jogging, and biking.

The proposed project site is located within a FEMA-designated 100-year floodplain (Figure 5) where the base flood elevation (BFE) is approximately 1,031 feet (FEMA, 2007). This area is prone to flooding.

1.3 Project Description

The Lake Bella Vista Dam is comprised of an earthen embankment with concrete overflow spillways located at both the west and east abutments. Both spillways are spanned by concrete vehicular bridges. The dam is classified as a small, high-hazard structure under ANRC dam safety regulations and poses a serious safety risk in the event of another flood and overtopping event. The City of Bentonville is proposing to improve the dam facility through replacement of the structure. Two alternatives to the proposed replacement, repairing the dam and moving the dam to a new location, were considered but dismissed due to infeasibility and cost restrictions. The project area is approximately 8 acres, which includes both the existing dam structure and its surrounding resources. Following completion of the proposed project, the recreation area would be returned to pre-

construction conditions, including removal of silt fences and re-connection of the Lake Bella Vista Trail.

In April 2013, CP&Y, Inc. (CP&Y) conducted a desktop review for the proposed project. This desktop review was completed using U.S. Environmental Protection Agency (EPA) ecoregion maps, the Natural Resource Conservation Service (NRCS) soil survey for Benton County, the United States Fish and Wildlife Service (USFWS) Critical Habitat Mapper, USFWS's list of federally-listed threatened and endangered species in Benton County, Arkansas Natural Heritage Commission (ANHC) data,, the National Hydrography Dataset (NHD) (Figure 3), aerial photography, and topographic maps.

In addition to the desktop review, a habitat assessment for federal-listed threatened and endangered (T&E) species was performed in April 2013 by CP&Y environmental staff. The results of the desktop review and habitat assessment are presented below.

2.0 ECOLOGY

2.1 Ecoregion

The project area is located within the Level III Ozark Highlands ecoregion. Habitat diversity and species richness within this ecoregion are notably high. Historic vegetation found throughout the ecoregion is typically oak-hickory forest. Open forests are common on rugged terrain whereas pastureland and hay crops are common on more level sites. Shortleaf pine grows on steep escarpments and glades dominated by grass and eastern red cedar are found on shallow soils (EPA, 2013).

Within the Ozark Highlands, the project area is located within the Level IV Springfield Plateau ecoregion. This ecoregion has upland areas dominated by oak-hickory and oak-hickory-pine forests. Savannas and tall grass prairies historically also occurred within this area and were maintained by fire. Much of the historic vegetation within this ecoregion has been replaced by agriculture and expanding residential areas (EPA, 2013).

2.2 Soils

According to the NRCS soil survey for Benton County, the proposed project site contains the following soil types: Captina silt loam (CnB), Secesh gravelly silt loam, occasionally flooded (Se), and Waben very gravelly silt loam (WeC) (USDA, 2012) (**Table 1**) (Figure 4).

Hydric soils, defined by the National Technical Committee for Hydric Soils as soils that form under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part, are present within the project area (Federal Register, 1994). All soils in the project area except for Waben very gravelly silt loam, 3-8% slopes (WeC) are classified as hydric.

Table 1: NRCS Soils in the Project Area

Map Symbol	Description	Hydric
CnB	Captina silt loam, 1-3% slopes	Yes

Table 1: NRCS Soils in the Project Area

Map Symbol	Description	Hydric
Se	Secesh gravelly silt loam, occasionally flooded	Yes
WeC	Waben very gravelly silt loam, 3-8% slopes	No

2.3 Vegetation

Historic vegetation in the Springfield Plateau ecoregion is typified by oak-hickory forest and some oak-hickory-pine forests. Prior to the 19th century, savanna or tall grass prairies were maintained by fire and relatively common throughout the area. Species native to upland areas include: mixed deciduous forest containing black oak (*Quercus velutina*), white oak (*Quercus alba*), blackjack oak (*Quercus marilandica*), post oak (*Quercus stellata*), and hickories (*Carya* sp.) and mixed deciduous-shortleaf pine (*Pinus echinata*) forest. Species native to floodplain and low terraces include willows (*Salix* sp.), maples (*Acer* sp.), hickories, birch (*Betula* sp.), American elm (*Ulmus americana*), and American sycamore (*Platanus occidentalis*) (EPA, 2013).

Plant species observed during the April 2013 field survey include: Black walnut (*Juglans nigra*), wild cherry (*Prunus serotina*), Chinese privet (*Ligustrum sinense*), honey locust (*Gleditsia triacanthos*), box elder (*Acer negundo*), maple (*Acer* sp.), osage orange (*Maclura pomifera*), wild grape (*Vitis* sp.), saw greenbrier (*Smilax bona-nox*), poison ivy (*Toxicodendron radicans*), flannel mullein (*Verbascum thapsus*), poison hemlock (*Conium maculatum*), bedstraw (*Galium* sp.), rough cocklebur (*Xanthium strumarium*), poke salad (*Phytolacca* sp.), and wild rye (*Elymus canadensis*).

3.0 BIOLOGICAL RESOURCES

3.1 Wildlife and Fish

The project area is located within a rural/suburban area. Wildlife species found in the project area would likely be those that are adapted to this habitat type, including white-tailed deer (*Odocoileus virginianus*), bobcats (*Felix rufus*), raccoons (*Procyon lotor*), Virginia opossums (*Didelphis virginiana*), fox squirrels (*Sciurus niger*), and eastern cottontail rabbits (*Sylvilagus floridanus*). Black bears (*Ursus americanus*) are likely rare but possible in the area (AGFC, 2013b).

3.1.1 Migratory Birds

The project area is located on the edge of the Central and Mississippi Flyways for migratory birds. Migratory bird species are protected under the Migratory Bird Treaty Act (16 USC 703-712) which makes it illegal to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird" without prior

permitting and approval. It is possible that migratory birds could use habitat within the project area during migration.

3.1.2 Essential Fish Habitat

According to the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), there is no Essential Fish Habitat (EFH) located within or adjacent to the proposed project area.

3.2 Threatened and Endangered Species

The threatened and endangered species list for Benton County maintained by the USFWS was reviewed on June 24, 2013 (**Table 2**). The bald eagle has been delisted, as of August 9, 2007. However, this species is protected by the Bald and Golden Eagle Protection Act (16 USC 668-668c) and the Migratory Bird Treaty Act. The data from the ANHC did not show any federally listed species occurring in or near the project area (Appendix C).

Table 2: Federally-Listed Species of Benton County, Arkansas

Common Name	Scientific Name	Federal Status	Habitat Description	Likely Presence
Bald eagle	*Haliaeetus leucocephalus*	R	Breeding habitat consists of coastal areas, bays, rivers, lakes, reservoirs, or other bodies of water that support prey species. Usually nest in tall trees or on pinnacles or cliffs near water. Tend to avoid areas with high levels of human disturbance.	**Likely transient** through project area. Lake Bella Vista provides foraging habitat for this species. Human disturbance likely to limit species presence.
Piping plover	*Charadrius melodus*	T	Sandy upper beaches, especially where scattered grass tufts are present, and sparsely vegetated shores and islands of shallow lakes, ponds, rivers, and impoundments.	**Unlikely** in the project area. Beaches of Lake Bella Vista are not sandy. Human disturbance likely to limit species presence.
Neosho mucket	*Lampsilis rafinesqueana*	PE	Found in a variety of habitats in large streams and small rivers, most often in shallow riffles and runs with a predominantly gravel substrate. In Arkansas, the species was found in survey sites along the Illinois River in Washington and Benton Counties. It has not been found during surveys of the Arkansas River.	**Unlikely** in the project area. A 2013 survey of Lake Bella Vista did not identify this species or any suitable habitat for this species within the lake or project area.

Table 2: Federally-Listed Species of Benton County, Arkansas

Common Name	Scientific Name	Federal Status	Habitat Description	Likely Presence
Rabbitsfoot	*Quadrula cylindrical cylindrical*	PT	Found in small to medium rivers with moderate to swift currents. In smaller streams it inhabits bars or gravel and cobble close to the fast current. Has been found at depths up to 3 meters. In Arkansas, it is found within the Arkansas River system. They are found in Benton and Washington counties.	**Unlikely** in the project area. A 2013 survey of the project area did not identify any rabbitsfoot mussels. There was little if any suitable habitat identified.
Cave crayfish	*Cambaraus aculabrum*	E	This species is known to occur in two caves in Arkansas: Logan Cave in and Bear Hollow Cave. Logan Cave is located within Benton County, approximately 20 miles to the southwest of the project area.	**Unlikely** in the project area. This is a cave-dwelling species. There are no known caves or karst openings within the project area.
Ozark cavefish	*Amblyopsis rosae*	T	This subterranean species is known to occur in Logan Cave in Benton County, approximately 20 miles to the southwest of the project area.	**Unlikely** in the project area. This is a cave-dwelling species. There are no known caves or karst openings within the project area.
Arkansas darter	*Etheostoma cragini*	C	Shallow, clear, spring-fed tributaries and headwater streams having sand or sandy-gravel substrates. Vegetated cover in spring-fed channels, near shore and away from swift currents. Known to occur in the Arkansas River basin in extreme northwest Arkansas.	**Unlikely** in the project area. A spring-fed stream that enters the project area from the northwest was sampled in May 2013. Two species of darters were observed, but no Arkansas darters were identified. Previous surveys of this stream also had negative results for this species.

Table 2: Federally-Listed Species of Benton County, Arkansas

Common Name	Scientific Name	Federal Status	Habitat Description	Likely Presence
Indiana bat	*Myotis sodalis*	E	Hibernate in caves. Maternity sites are generally in tree cavities or behind the bark of dead or dying trees. Forages in riparian areas, upland forests, ponds, and fields.	**Possible** transient through project area while foraging. None of the dead or dying trees observed in the project area are appropriate for maternity sites. There are no cave or karst openings in the project area.
Gray bat	*Myotis grisescens*	E	Roosts almost exclusively in caves. Forested areas along streams and lakes provide important protection for adults and young.	**Possible** transient through project area while foraging. There are no known caves or karst openings in the project area for roosting.
Ozark big-eared bat	*Corynorhinus townsendii ingens*	E	Roosts in caves in limestone karst regions dominated by mature hardwood forests of hickory, beech, maple, and hemlock.	**Possible** transient through project area while foraging. There are no known caves or karst openings in the project area for roosting.

Source: USFWS, 2013.
E- Endangered; T- Threatened; C- Candidate; R – Recovery; PT – Proposed Threatened; PE – Proposed Endangered

The following threatened and endangered species may possibly occur in the project area as transients. None of these species are likely residents.

3.2.1 Bald Eagle

Bald eagles (*Haliaeetus leucocephalus*) are some of the largest birds of prey in North America with an average wingspan of 80 inches and an average body weight of 105 to 222 ounces. Their common name is derived from their white feathered heads contrasting with the dark brown feathers on their wings and body. They have a heavy body, large head, and long, hooked beak. Habitat in both breeding and wintering areas are characterized by tall trees or other appropriate perching areas within proximity to open water where the species can hunt fish, waterfowl, and other sea birds (Cornell, 2013).

Lake Bella Vista could provide hunting habitat for bald eagles. Per eBird.org (eBird, 2013), the species has been observed in the area of Lake Bella Vista, though no nests have been observed within or near the project area. This species may be temporarily displaced from the project area during construction, but there are no long-term impacts anticipated from completion of the improvements to Lake Bella Vista Dam.

3.2.2 Indiana Bat

Indiana bats (*Myotis sodalis*) are medium-sized members of the genus *Myotis* that closely resemble the little brown bat (*Myotis lucifugus*). The two species can be differentiated by color as the Indiana bat has bronze fur rather than the little brown bat's dull gray. Indiana bats are found throughout much of the eastern United States. Forested areas and riparian areas are their preferred foraging habitat. Their maternity sites are usually in dead or dying trees with loose bark and the generally hibernate in limestone caves with pools (USFWS, 2013).

A 2013 survey of the project area revealed that the proposed project area does not have caves of any size. Likewise, the project area does not have karst openings suitable for Indiana bat hibernation. The species may use the lake for foraging, but the likelihood is small given that there are no known caves with observed Indiana bats within close proximity to the project area. Dead snags and other standing dead trees or trees with cavities found within the project area were examined. No trees with exfoliating bark were found and none of the tree cavities inspected showed evidence of use by bats. However, it would be prudent to leave standing dead trees and snags within the project area to benefit bats and other wildlife species (Redman, 2013). This species may be temporarily displaced from the project area during construction, but there are no long-term impacts anticipated from completion of the improvements to Lake Bella Vista Dam.

3.2.3 Gray Bat

Gray bats (*Myotis grisescens*) are similar in appearance to two other species in the genus *Myotis*: Indiana bats and little brown bats. Gray bats are distinguishable by their fur, which is unicolor on the back, and by their wing membrane, which attaches at the ankle and not at the toe as in other *Myotis* species. The species occupies a very limited geographic range in limestone karst areas of the southeastern United States, including in northern Arkansas. They live in caves year round, preferring caves near rivers during the summer. The species eats a variety of flying aquatic and terrestrial insects, foraging along rivers or lakes (USFWS, 2013).

Lake Bella Vista is located in an area with known karst. During the 2013 survey of the project area, no caves or karst openings of sufficient size for use by gray bats were identified. Gray bats may use Lake Bella Vista for foraging habitat, but there is other, more suitable habitat nearby the project area (Redman, 2013). This species may be temporarily displaced from the project area during construction, but there are no long-term impacts anticipated from completion of the improvements to Lake Bella Vista Dam.

3.2.4 Ozark Big-eared Bat

The most distinguishing characteristic of the Ozark big-eared bat (*Corynorhinus townsendii ingens*) is the size of their ears, which extend to more than an inch on average, in relation to their less than four inch long bodies. They are similar in appearance to Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) and are distinguishable by their belly fur, with Rafinesque's big-eared bats having white or whitish fur as opposed to the light brown or buff fur of the Ozark big-eared bats. The preferred habitat for Ozark big-eared bats is

typically caves in limestone karst regions dominated by mature hardwood forests (AGFC, 2013a).

Lake Bella Vista and the surrounding park may provide foraging habitat for Ozark big-eared bats. The project area occurs in an area with known karst features. During the 2013 survey of the project area, there were no caves or karst openings identified (Redman, 2013). This species may be temporarily displaced from the project area during construction, but there are no long-term impacts anticipated from completion of the improvements to Lake Bella Vista Dam.

4.0 CONCLUSION

Neither the desktop review nor the field survey revealed critical habitat for or sightings of any federally-listed threatened or endangered species listed in Benton County. The project area may serve as foraging habitat for bald eagles, Indiana bats, gray bats, and Ozark big-eared bats. These species may be temporarily displaced from the project area during construction of the proposed project, but there are no long-term impacts anticipated from the improvements to Lake Bella Vista Dam.

There was no suitable habitat observed for the Ozark cavefish, Arkansas darter, piping plover, Neosho mucket, rabbitsfoot, or the cave crayfish. Therefore, this project is not anticipated to affect these species.

5.0 REFERENCES

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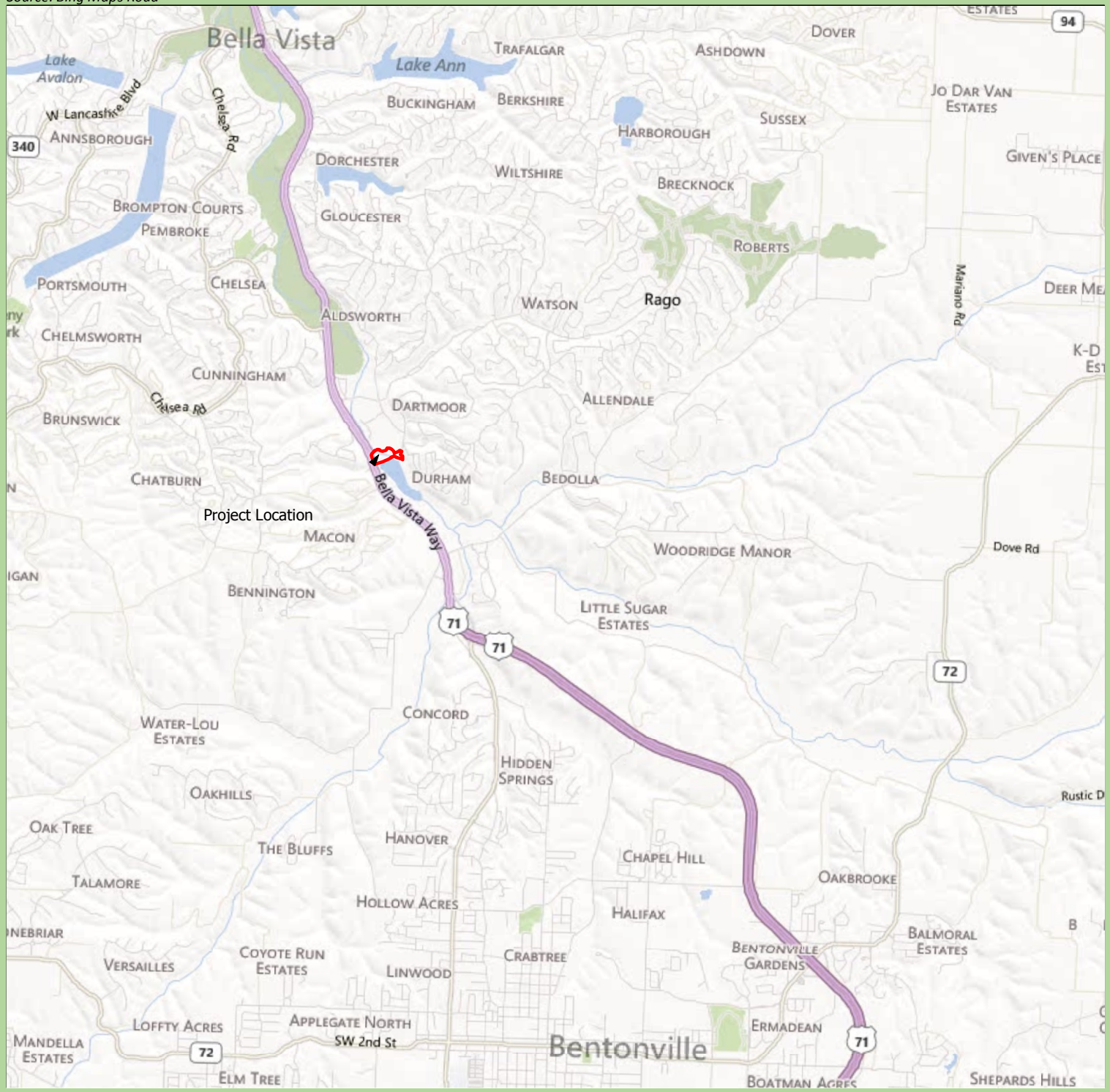
Appendix A
Figures

Source: Bing Maps Road



Project Area

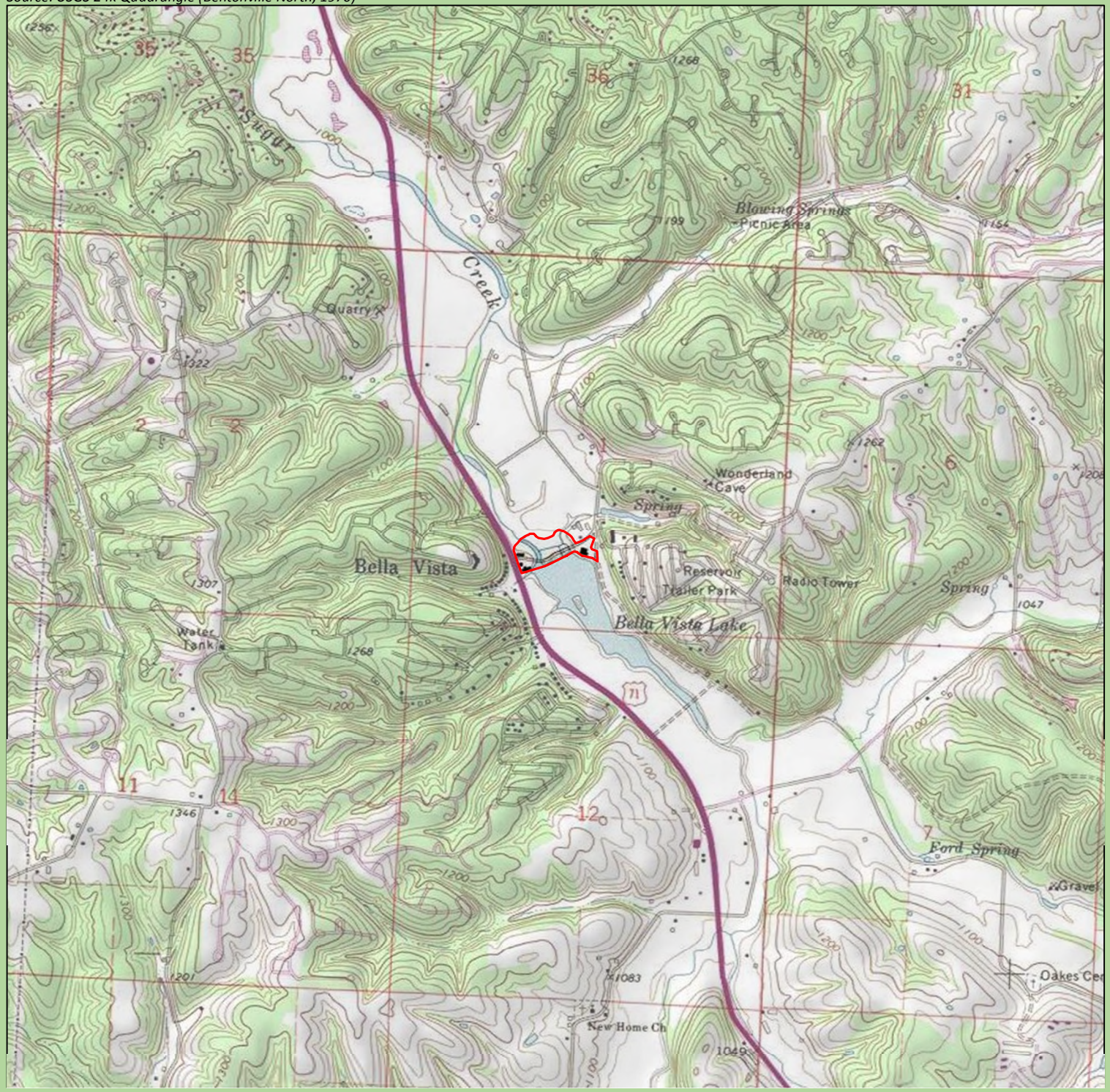
0 0.5 1 2

Miles

Vicnity Map

FIGURE 1

Source: USGS 24k Quadrangle (Bentonville North, 1970)



USGS Topographic Map

FIGURE 2

Source: Microsoft World Imagery (September 2010)

Project Area

National Hydrography Dataset Flowline

0 100 200 400

Feet

N

Aerial Photographic Map

FIGURE 3

Source: Microsoft World Imagery (September 2010)

Project Area

Natural Resources Conservation Service Soil Boundary

Hydric Soil

CnB - Captina silt loam, 1-3% slopes, hydric within depressions
Se - Secesh gravelly silt loam, occasionally flooded, hydric within depressions
W - Water
WeC - Waben very gravelly silt loam, 3-8% slopes

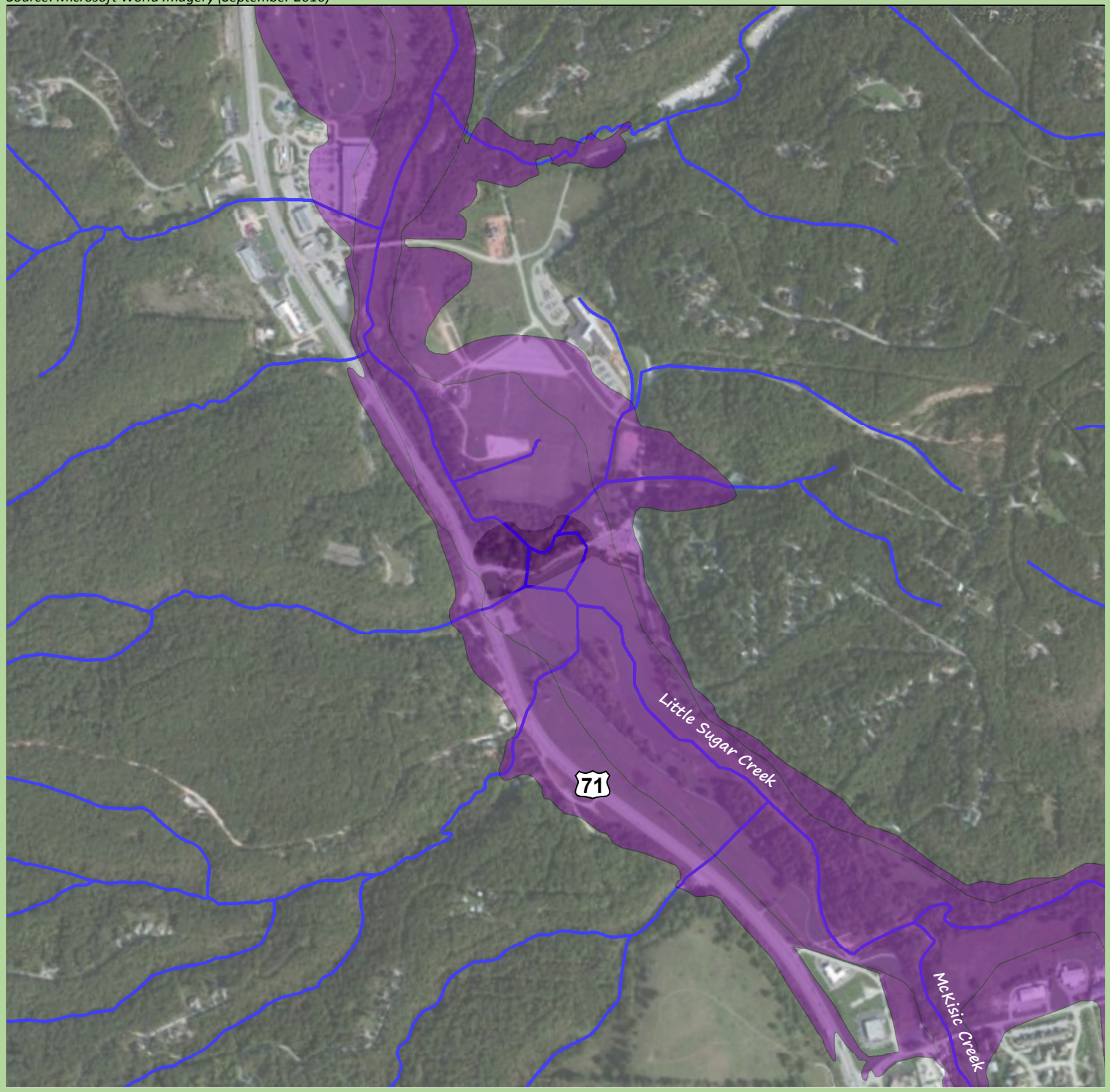
0 75 150 300
Feet

N

NRCS Soil Survey Map

FIGURE 4

Source: Microsoft World Imagery (September 2010)



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FEMA 100-year Floodplain Map

FIGURE 5

Appendix B
Photo Log

PHOTO LOG

Photo 1: Lake Bella Vista Dam west side facing downstream.

Photo 2: Lake Bella Vista Dam west side facing upstream.

Photo 3: Road crossing Lake Bella Vista Dam, facing east.

Photo 4: Little Sugar Creek downstream of Lake Bella Vista Dam.

Photo 5: Lake Bella Vista upstream of Lake Bella Vista Dam during a rain event.

Photo 6: Lake Bella Vista

Photo 7: Little Sugar Creek facing upstream.

Photo 8: Little Sugar Creek facing downstream.

Photo 9: Lake Bella Vista Dam east side looking upstream

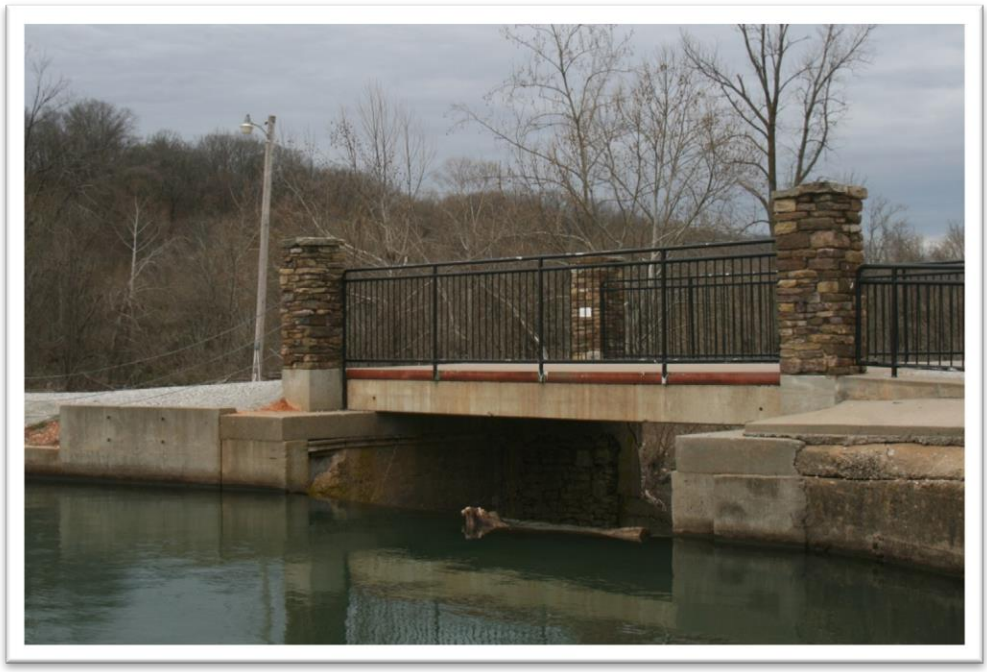
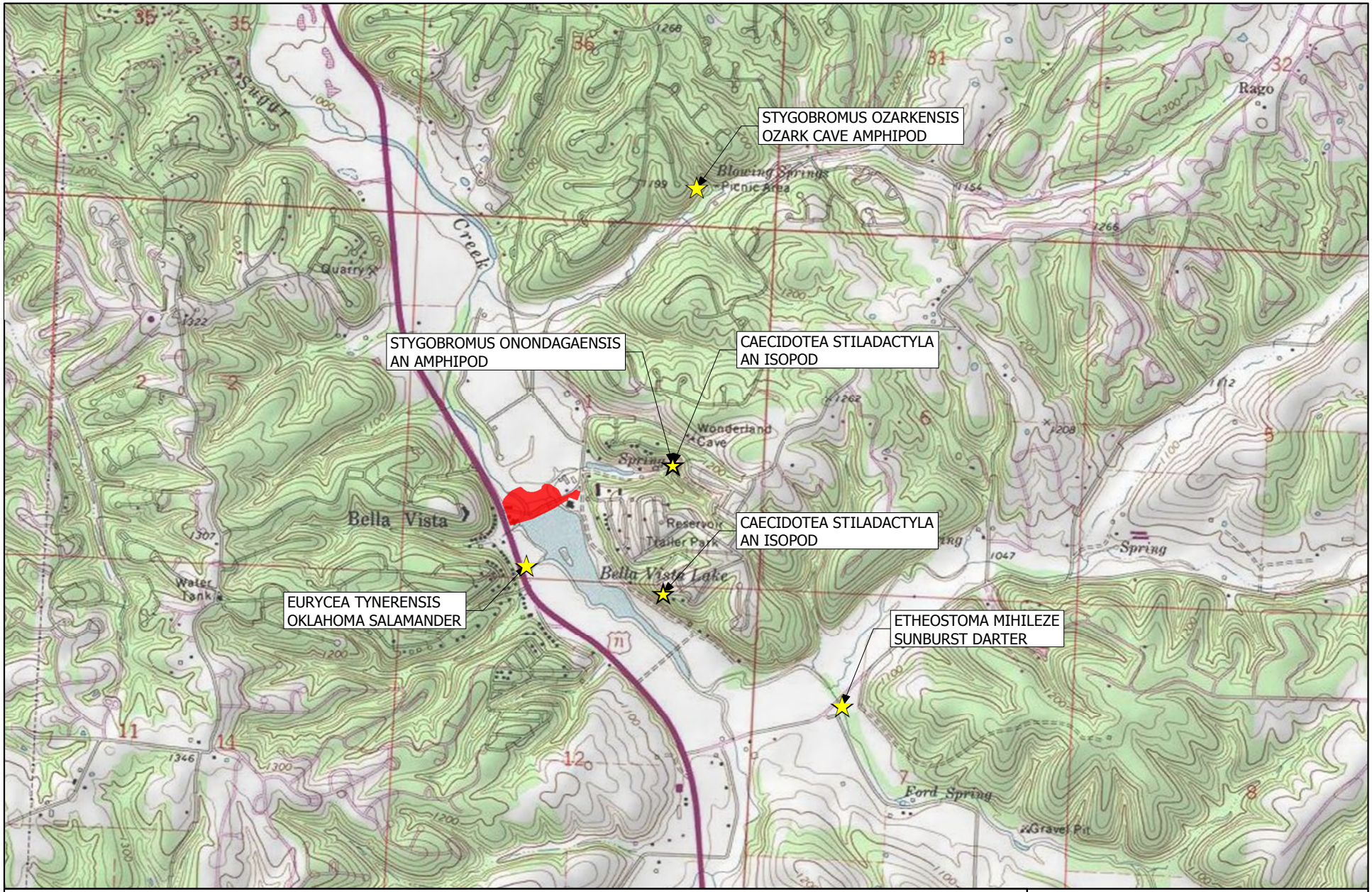


Photo 10: Lake Bella Vista Dam east side looking downstream

Appendix C
ANHC Data


STYGOBROMUS OZARKENSIS
OZARK CAVE AMPHIPOD
STYGOBROMUS ONONDAGAENSIS
AN AMPHIPOD
CAECIDOTEA STILADACTYLA
AN ISOPOD
CAECIDOTEA STILADACTYLA
AN ISOPOD
EURYCEA TYNERENSIS
OKLAHOMA SALAMANDER
ETHEOSTOMA MIHILEZE
SUNBURST DARTER
Bella Vista
Bella Vista Lake
Blowing Springs
Picnic Area
Wonderland
Cave
Spring
Reservoir
Trailer Park
Quarry
Water
Tank
Ford Spring
Gravel Pit
Rago
Creek
Proposed Study Area
N
0
1,000
2,000
4,000
Feet
Lake Bella Vista
City of Bentonville
Natural Heritage Commission Data

Mary Tibbets

From: Bonnie Doggett
Sent: Wednesday, January 29, 2014 9:11 AM
To: Mary Tibbets
Subject: FW: Lake Bella Vista

From: Hermely, Alan [mailto:Alan.Hermely@fema.dhs.gov]
Sent: Tuesday, January 21, 2014 8:54 PM
To: Bonnie Doggett
Subject: RE: Lake Bella Vista

Hi Bonnie,

I have reviewed your T&E Species Report. I thought it was well prepared and had an adequate level of detail to address the potential impacts to federally listed species. Based on your report, the existing land use, project conditions, and the proposed SOW, I will be able to make a No Effects determination. Project conditions will include leaving standing dead trees and snags within the project area (when practicable) to benefit bats and other wildlife species (as stated in the report) and construction protocols to follow if Bald Eagles are observed in or near the project area. Also, for our records and for the purpose of due diligence, could you provide the Redman report, the 2013 survey regarding bivalves, and the Arkansas Darter sample report? If these reports are not readily available or the Darter sampling is raw data, we can discuss how to proceed.

Alan T. Hermely
Environmental Specialist
DHS/FEMA Region VI
800 North Loop 288
Denton, TX 76209
Desk: 940-383-7232
Mobile: 940-231-4106
Fax: 940-383-7299
Email: Alan.Hermely@fema.dhs.gov

From: Bonnie Doggett [mailto:BDOGGETT@cpyi.com]
Sent: Friday, January 17, 2014 4:11 PM
To: Hermely, Alan
Subject: Lake Bella Vista

Hi, Alan. The City of Bentonville just sent us comments on the EA. Before finalizing I was wondering if you had made a determination on T&E that I could add in the document. Please let me know if you need me to resend you the T&E report.

Thanks,

Bonnie Doggett, Associate Biologist

10415 Morado Circle, Building I Suite 200
Austin, Texas 78759
512-340-9801 Direct | 512-349-0727 Fax
bdoggett@cpyi.com | www.cpyi.com

Please Note: Effective January 24, 2014, our Austin office will be located in the Chase Bank Building – Tower of the Hills. Our new address will be:
CP&Y, Inc.
13809 Research Boulevard, Suite 300
Austin, TX 78750
Phone numbers, fax numbers and email addresses will remain the same.


Eco-tip: If you must print this e-mail, please print it double-sided.

Meeting Summary

July 11, 2013 Agency Coordination Meeting

Meeting Summary

Meeting Date: July 11, 2013

Meeting Location: FEMA Region 6 – Denton, TX
Arkansas State Library – Little Rock, AR

Date Issued: July 19, 2013

Attendees: See attached sign in sheet

Reported by: Sarah Kobetis

Purpose: Lake Bella Vista Dam Improvement - Agency Coordination Meeting

Distribution: Attendees, Arkansas SHPO, EPA

The following meeting notes set forth our understanding of the discussions and decisions made at this meeting. If you have any questions, additions or comments, please contact the author immediately. If we do not hear from you within 10 days, we will assume that our understandings are the same. We are proceeding based upon the contents of these meeting notes.

Summary

Because of technical difficulties, the two meetings lost contact after the Engineering Background section of the presentation. These minutes are a compilation of notes taken at both meetings.

ACTION ITEMS

Action	Responsible
Prepare a SHPO letter report and include a revised APE map that reduces the project area to define only the areas of potential impact/construction for review under Section 106	Kathryn St. Clair and Tim Klinger
Identify the borrow pit location (the area where fill dirt/gravel will be taken from)	City of Bentonville, Mel Green & John Levitt
Provide an example of an H &H study	Kevin Jaynes
Send CP&Y an example of a good SHPO letter report	Leah Anderson
Submit a Preliminary Jurisdictional Determination to the USACE	Bonnie Doggett

Meeting Summary

Confirm with Kevin that the project requires an EA	Alan Hermaly

MINUTES

- Bonnie Doggett –Meeting/Project/Participant Intro
- Ben Peters – Project Background
  - Trailblazers gifted land to City of Bentonville for a park; much of the repair/maintenance history is unknown.
  - Dam overtopped 2008, 2011, 2013
  - Went from low hazard to significant hazard in 2010
  - Goal is to replace with a like working dam under category D funds from FEMA
- John Levitt – Engineering Background
  - In 2008, CP&Y was hired to determine alternatives for repairing/replacing the dam
  - Three alternative dam designs were prepared. The alternatives were a concrete-capped embankment at current site, a concrete gravity dam at current site, or a concrete gravity dam at an downstream alternative site
    - Concrete-capped earthfill embankment was determined to be the most feasible physically and financially
    - Geotechnical investigations showed the existing dam to be unsafe
    - not financially feasible to repair dam, needs to be replaced
- Bonnie Doggett – Environmental Document
  - FEMA Level EA
  - Tim is conducting the archeological survey
  - Ron is doing most of the threatened and endangered species habitat assessment
- Kathryn St. Clair – Section 106 Cultural Resources
  - No longer any historic context from the area's former use as a resort in the way of buildings
  - Initial background research conducted by archeologist and architectural historian at the SHPO office to identify known archeological and structural resources in the area
  - Spillways may or may not be original/historic age; these resources will be evaluated for historical significance
  - Will prepare a letter report for the City of Bentonville's review and submit to FEMA in preparation for FEMA's coordination with SHPO under Section 106 of the NHPA
- Wetlands – none identified, but there will be stream impacts
  - Overtopping has rechanneled Little Sugar Creek so that it flows back into the dam and has eroded the adjacent stream bank
  - Seepage at the toe of the dam has contributed to rechanneling

- There is a stream that flows from a trout farm into the northeast portion of the study area

- Hazardous Materials – No concerns based on initial field survey and radius report. Land use in the area is residential and commercial/retail; no industrial practices.
- Threatened and Endangered Species – Habit assessments were conducted and no suitable habitats were identified. Assume the project would not adversely affect any federally-listed species.
- Next Steps
  - Send out a copy of the power point presentation
  - Circulate meeting minutes
  - Incorporate questions/comments in the draft EA
  - Prepare Section 106 consultation letter report for FEMA
  - Submit draft EA to ADEM and FEMA
  - Submit approved EA for public comment
  - Submit final EA to FEMA with a draft FONSI
- Questions/Answers Discussion
  - Determined that the cultural APE will include the current defined project area, though reducing the area north of the dam within the stream and ancillary channels, as no construction work is anticipated in this area, and therefore it does not need to be tested.
  - Mel Green: New structure will be concrete faced, with a concrete channel to divert water back into Little Sugar Creek
    - Maybe wing walls and control walls to get the water back where it belongs, and divert it away from the toe.
      - There will be water near the toe, and it will overflow, but it will be designed to overflow.
    - New dam will have an 80 foot wide spillway on the left abutment, and no low area on the side. There won't be that concentration of water on the right side from a 40 foot emergency spillway.
      - Dam will have overtopping provisions, only one (larger) spillway; likely on the west side
    - Little Rock discussed the construction of the east spillway and continual water flow versus water flow only in flood events. Added that the trout farm stream provides a continual water source. Document reasoning behind which one is chosen.
  - Scott Bass: Asked if the dimensions of the dam would change. CP&Y stated that the dimensions would not change. Based on that, Scott asked Alan why this project would require an EA. Stating that other replacement projects he has worked on did not require an EA. We could not reach Kevin so Alan will ask Kevin Jaynes this question.

Meeting Summary

- Lindsey Lewis: asked to include documentation in the EA on the dam removal and restoring stream alternative and why the dam should be replaced.
    - CP&Y discussed various reasons and the city of Bentonville said that part of the agreement with the previous owner was to keep it a lake. This documentation of this agreement will be included in the EA as an appendix.
- Mel Green: Lake was lowered prior to it being turned over to the city. To construct a new dam, we'll have to lower lake level again and divert the water coming into the drainage basin.
    - Leah Anderson: Proposing APE to SHPO office—no immediate need to expand project area, unless there is a high probability for finding resources in expanded area.
- Kathryn St. Clair: Spillways: eligibility recommendation was made, no determination.
    - Spillways are likely over 50 years old; will recommend as not eligible in the SHPO letter report.
- Lauren Brewer: Is there a standard mitigation procedure in case of another overtopping? Mel: No.
- Kevin Jaynes: Important to make sure the EA scope of work matches scope of work in public worksheet.
    - Mel: we will seriously guard against project creep to protect the scope and budget
    - Will there be a problem with keeping the project at the EA level and preventing it from progressing to the Environmental Impact Statement level? Mel: No, no impacts are anticipated
    - Kathryn: should the spillways be considered eligible resources, we may have to mitigate under Section 106. We can still have and EA level document, though mitigation may slow down the process.
- The project is below the regulatory threshold of Arkansas Dam Safety. They'll get specs as a courtesy, but they don't require them because of the size of construction.
- Lauren Brewer: How is karst geology addressed? What type of permits are required (Water quality, T&E)?
    - Mel and Kathryn: We have a karst geologist on the project team. He has investigated the project area and his findings will be incorporated into the EA document.
    - Lindsey Lewis and Heath Rauschenberger: Did not see issues with the federally-listed species being impacted by the proposed project, but a detailed discussion should be included in the EA. Karst should be included in this discussion.
    - Cindy Osborne – Will update us if a species sighting occurs within or close to our project area within the next year. If it is over a year upon submittal of the EA, we should submit a new request. CP&Y stated that it will not be over a year.

She agrees with the federally-listed threatened and endangered species listed in the technical memo.

- Lauren Brewer: How will sediment that has accumulated on the upside of the dam be handled?
  - Mel: Some sediments from upstream, but keep in mind the lake was dredged around 2001. We will clear the footprint, but it will be about what it is now.
  - Mel: Don't anticipate a coffer dam, will divert water to one side and construct the other side
  - Kathryn and Bonnie: when the lake was dredged in 2001, the trails organization corresponded with USACE and they did not require a permit. We conducted a FOIA request for any USACE permits for work on the creek and lake and it resulted in no permits issued – we don't have a good history of maintenance of the dam or lake.
  - Mel: Handling of water plan will be fairly detailed. If the lake is lowered, we would divert the inflow coming into the basin, and there is a significant drainage basin above the dam. There may be a need for a partial coffer dam.
  - Mel: Silts and sediments removed from the lakeside footprint of the dam for construction may need to be tested for hazardous constituents.
- The current preliminary design and BMPs were discussed. The temporary construction easements and how sediment will be handled during construction should be included in the EA.
- Review all alternatives
- Alan Hermaly and Lisa Boyle: Waters of the U.S. – Discussed streambank restoration and type of USACE permit. Lisa thought it would be best to complete the project under Nationwide Permit 3 – Maintenance. Of course, this will be finalized when the process is further along. In order to save time, the City will submit a Preliminary Jurisdictional Determination (PJD) to the USACE and include this in the EA. The waters of the U.S. will be included as bank to bank. Alan would like to see that hydrology, soils, and vegetation were assessed. Bonnie said that a wetland data form will be included in the PJD submittal. The PCN will be submitted after the Draft EA is approved and sent out for public comment.
- Alan: Discussed floodplains and preparation of the eight-step decision making process. He recommends including the eight-step process as a narrative in the EA and not in an appendix.
- Kevin Jaynes: FEMA would like the borrow source site(s) identified and whatever surveys, if any, addressed.
  - Mel: To date CP&Y has not investigated possible borrow sources. I think we must contact Ben (with the City of Bentonville) for some initial guidance on sources and then we may need to do some geotec (sampling and lab work).

- Kathryn: Does FEMA have a good example of a recent EA you all could share with us?
  - Leah and Kevin: FEMA website, any EAs from Region 6 within past 3 years (just not from LA)
- Lauren Brewer: Any permits anticipated?
  - Mel: Storm water permit – we will address this in the EA
  - Lauren: Which permit from Army Corps? Bonnie: Anticipate a NWP 3 – Maintenance.
- Kathryn: What, if any, public meetings will be required?
  - Kevin: there is not a requirement for public meetings unless you anticipate a controversial project…do you know if the public is in support of this?
  - Mel and Kathryn: Community will be highly supportive; the project has been addressed numerous times over the years at City Council meetings
  - Kevin: Public comment period for NEPA will be end of public involvement
    - EA will probably be located at the Public Library. Alan prefers somewhere that has after-hours accessibility.
- Kathryn: Does FEMA anticipate identifying any additional consulting parties for Section 106 consultation?
  - Leah: FEMA will reach out to other parties if there's an adverse effect.
  - Leah: We can start the Section 106 process before the draft EA is completed
  - FEMA will reach out to tribes.
- Kevin: If there's a problem with consulting agencies, let CPY know immediately to avoid going from EA to EIS
- Little Rock: The study area was discussed, reviewed and then approved by all participants. We will include a discussion in the EA on why that study area was specifically chosen.

The Department of
Arkansas
Heritage

Mike Beebe
Governor

Martha Miller
Director

Arkansas Arts Council
*
Arkansas Natural Heritage Commission
*
Delta Cultural Center
*
Historic Arkansas Museum
*
Mosaic Templars Cultural Center
*
Old State House Museum

Arkansas Historic Preservation Program

323 Center Street, Suite 1500
Little Rock, AR 72201
(501) 324-9880
fax: (501) 324-9184
tdd: (501) 324-9811
e-mail:
info@arkansaspreservation.org
website:
www.arkansaspreservation.org

An Equal Opportunity Employer

September 24, 2014

Mr. Kevin Jaynes
Regional Environmental Officer
FEMA Region 6
FRC 800 North Loop 288
Denton, Texas 76209-3698

Re: Benton County – Bella Vista
Section 106 Review – FEMA
PW# 1562 Replace Lake Bella Vista Dam
AHPP Tracking Number 91462

Dear Mr. Jaynes:

This letter is written in response to your inquiry regarding the above referenced project. The staff of the Arkansas Historic Preservation Program has reviewed the documents that pertain to the replacement of the 1917 Lake Bella Vista Dam. We concur that the dam is ineligible to be listed in the National Register of Historic Places and that the proposed undertaking will have no effect any known historic properties.

However, because our survey files are incomplete, it is possible that such resources exist in the area. If a resource is encountered that appears to possess historical or architectural significance; or if human remains or artifacts, such as Native American pottery, stone tools, old bottles, or china are discovered during this project, work in the area of discovery should stop and this office should be contacted immediately. We will evaluate any such finds as expeditiously as possible.

Thank you for the opportunity to comment on this undertaking. Please refer to the AHPP Tracking Number above in any correspondence. If you have any questions, please contact Theresa Russell of my staff at (510) 324-9880.

Sincerely,

Frances McSwain

Frances McSwain
Deputy State Historic Preservation Officer

cc: Ms. Rebecca Brave, Osage Nation
Dr. Ann Early, Arkansas Archeological Survey
Mayor Bob McCaslin, City of Bentonville

September 15, 2014

91462
FEMA

Ms. Cathie Matthews, State Historic Preservation Office
Department of Arkansas Heritage
323 Center Street
Suite 1500
Little Rock, AR 72201

RE: Section 106 Review Consultation, FEMA DR-1975-AR
PW# 1562 Replace Lake Bella Vista Dam
Lake Bella Vista, Benton County, Arkansas
Coordinates: 36.43270, -94.23091

AHPP
SEP 19 2014

Dear Ms. Matthews:

The Federal Emergency Management Agency (FEMA) will be providing funds authorized under the Public Assistance Grant Program in response to the major Disaster Declaration for FEMA-DR-1975-AR, dated May 2, 2011. FEMA is initiating Section 106 review for the above referenced property.

Multiple flooding events have overtopped and/or partially breached the Lake Bella Vista dam. It is proposed that federal funding through FEMA's Public Assistance program be provided to The City of Bentonville (Applicant) for replacement of the dam in place (Undertaking). The project Vicinity Map is included as **Attachment A**.

Lake Bella Vista Dam, located on Little Sugar Creek, is owned by the City of Bentonville, Arkansas. Significant flooding that occurred along the creek in April 2011 resulted in the dam overtopping, causing erosion along the entire 410-foot long downstream slope, and a partial breach. The erosion at the toe of the dam caused a progressive slope failure of an 80-foot wide section of the downstream slope near the west spillway. Toe erosion along the east section of the dam resulted in loss of support beneath the concrete slope cover leading to extensive breakage and cracking of the concrete cover on the downstream embankment. The water flow beneath the damaged concrete caused erosion of the embankment soils. Extensive erosion along the toe and embankment resulted in a slump forming along the crest near the east spillway. Further settlement and cracking resulted in potholes and the washing away of asphalt pavement from the crest of the dam. The structure poses a serious safety risk in the event of another flood and overtopping event such as what occurred on April 19, 2013, when heavy rains caused Little Sugar Creek to flood resulting in another overtopping of Lake Bella Vista Dam (Heard, Arkansas Democrat Gazette, 2013). The dam is classified as a small, high-hazard structure under dam safety regulations of the Arkansas Natural Resources Commission (ANRC).

The Applicant proposes to replace the existing earthen dam and two spillways with another earthen dam and two spillways – one positioned on the east and one on the west ends of the dam. The conceptual design of the principal spillway is a reinforced concrete overflow weir, with reinforced concrete-lined approach section and discharge basin and reinforced concrete sidewalls. The weir crest

The west spillway, which appears to be at least in part original construction (c.1917), has a combined weir length (in three bays separated by piers) of 56 ft. The middle and eastern-most bays of the west spillway are equipped with three slide gates that can be used to lower the pool elevation. The spillway's three bays are separated by concrete pier walls and concrete pier footings. The downstream sides of the piers are faced with rough-cut limestone. Concrete wingwalls shore the embankment. The western most bay of this spillway is stepped down. It is likely the western most bay is the original spillway that was installed when the dam was constructed in c.1917. The original bay is constructed with taller piers and different concrete and stone compositions from the additional bays. The middle and eastern-most bays indicate different construction materials from the western-most bay, and have the lift gates installed. These bays were likely added in c.1925 when significant improvements were made to the resort and lake. The original roadway and wooden guardrails (according to historic photographs) are replaced with a concrete deck, asphalt paving, and jersey barriers.

The east spillway, which was likely constructed in c.1917, consists of a single concrete weir with a length of 40 ft (between the bridge abutments). An historic photo from 1922 shows the spillway with two bays or weirs. The spillway may have been heavily modified in response to the 1932 flood that partially breeched the dam. Newer concrete patching and wing walls have been added to both the downstream and upstream sides of the spillway. The pier wall may have been expanded or significantly altered on both the upstream and downstream sides, as newer construction material is present on both sides of the spillway. Stone columns support a metal guardrail across the roadway over the spillway. Historic photos (c. 1920s) indicate a wooden railing across the spillway. A rough-cut limestone retaining wall guides water (or was likely designed to) along the embankment downstream from the overflow section of the dam near the east spillway.

The piers of both spillways (east and west) are faced with rough-cut limestone. This detail was likely added to the spillways in the 1920s to match the rustic feel of some of the resort structures that once surrounded the lake. Both spillways were widened when the roadway was widened in the 1950s. The piers were expanded toward the downstream side, and a pre-cast webbed concrete deck replaced the original roadway over the dam.

The embankment section of Lake Bella Vista Dam, located between the two concrete spillways, is an earthfill section approximately 410 ft. in length. Both spillways are spanned by concrete vehicular bridges (currently publicly accessible to pedestrians and cyclists only). Portions of the downstream slope near the toe are vertical, apparently the result of erosion from Little Sugar Creek, which sweeps the toe of the dam. A section of the embankment approximately 180 ft in length, located adjacent to the east spillway, has remnants of irregular concrete overflow protection on portions of the crest and downstream slope. The remaining portion of the embankment, approximately 230 ft. in length located adjacent to the west spillway, does not have any structural overflow protection.

The dam is susceptible to frequent overtopping of the unprotected earthfill embankment, which is a recurring condition that will eventually lead to a complete (and possibly sudden) failure. The west spillway may have structural problems of unknown severity, with visible evidence of cracking and spalling of the concrete, and the gates are in poor and almost inoperable condition.

Lake Bella Vista Dam was inspected on July 10, 1979, in conjunction with Phase I of the National Dam Safety Program, administered by the U.S. Army Corps of Engineers (USACE), Little Rock

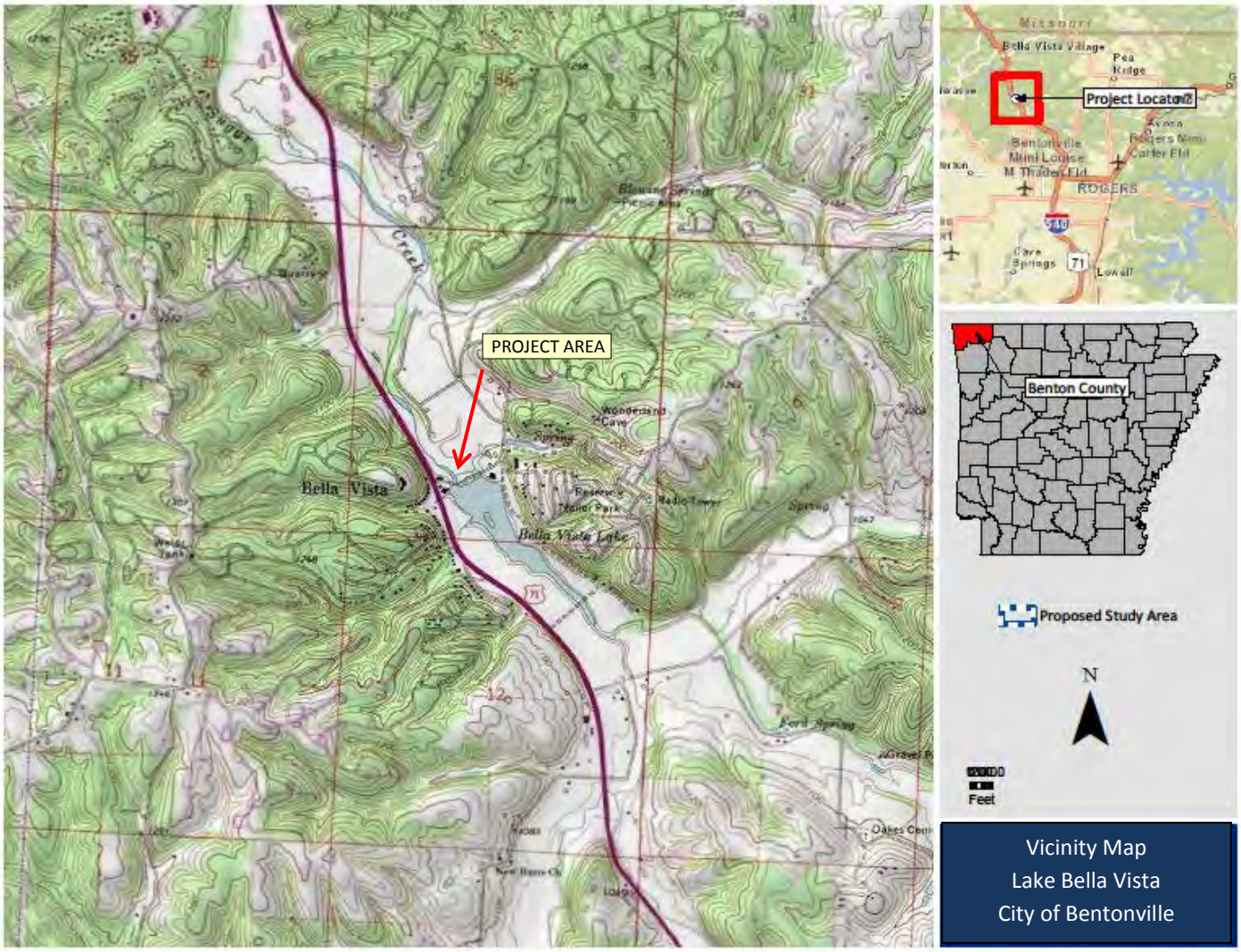
Should you need additional information please contact Leah Anderson, Deputy Regional Environmental Officer, at (940) 383-7288.

Sincerely,

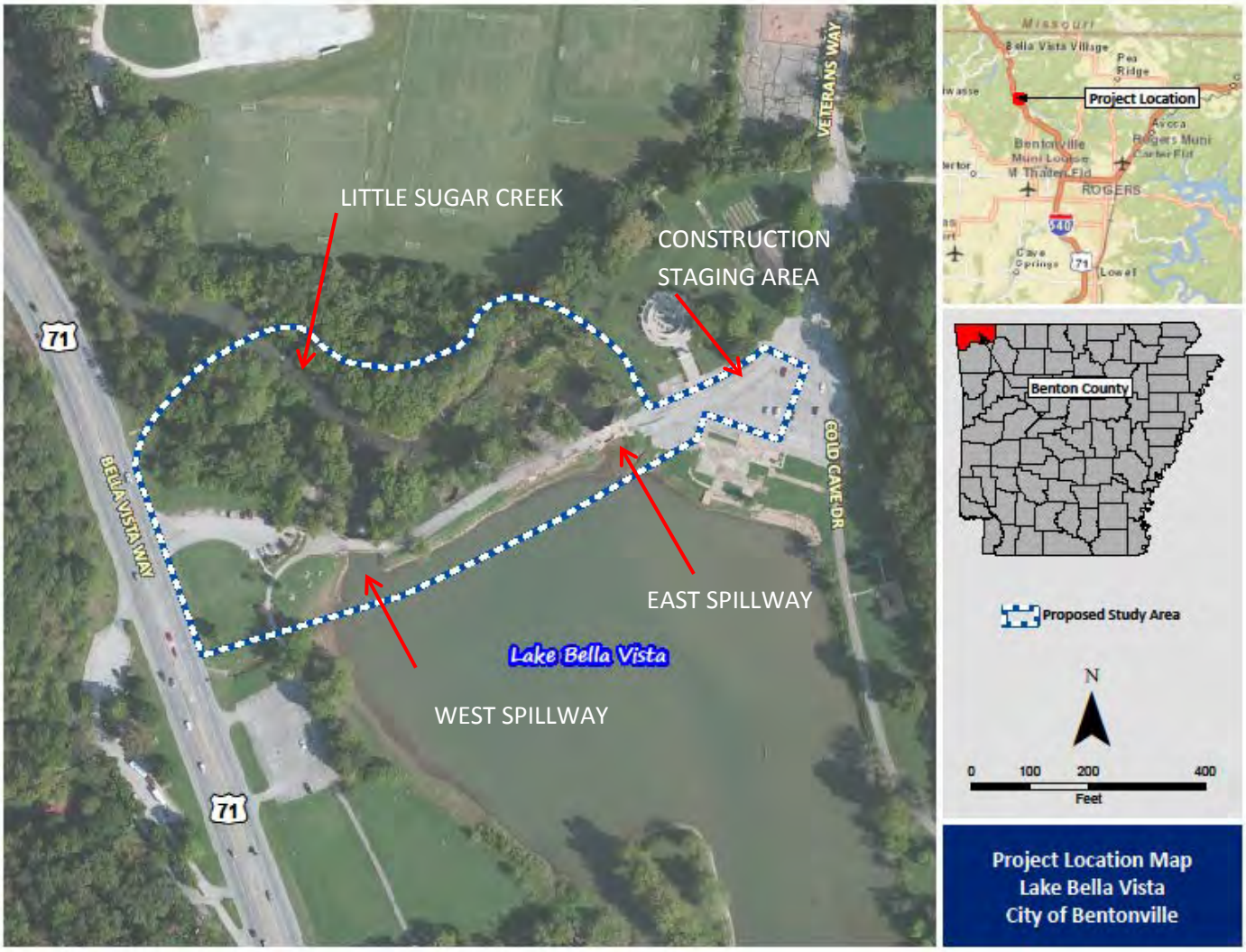
for Kevin Jaynes
Regional Environmental Officer
FEMA Region 6

Attachments
A: USGS Quad Location Map
B: Aerial Map with APE
C: Photographs

ATTACHMENT A – Vicinity Map



ATTACHMENT B – APE/Project Area Map



ATTACHMENT C - PHOTOS

PHOTO 1: View of Lake Bella Vista, facing northeast.

PHOTO 2: View of dam and west spillway facing northwest.

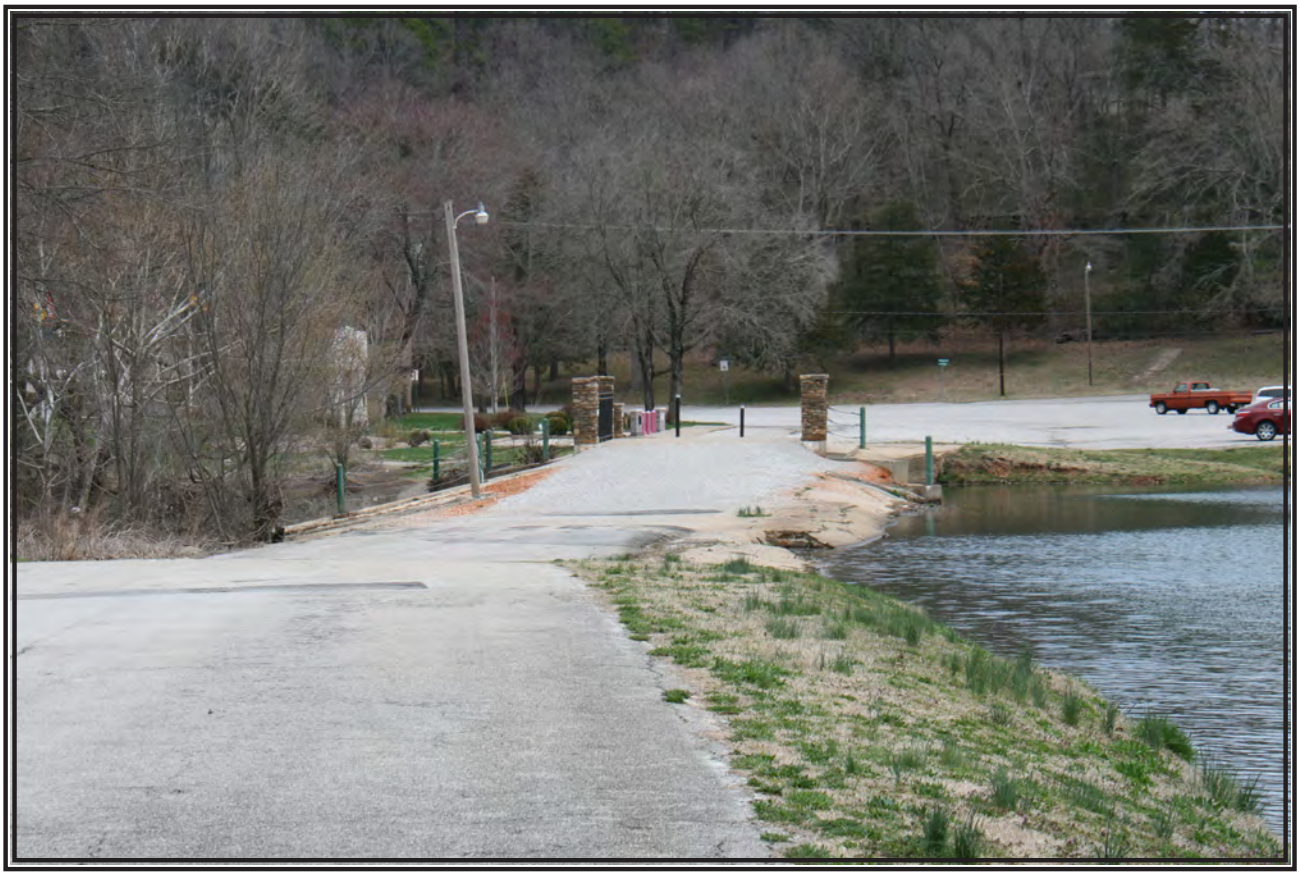


PHOTO 3: View of the top of the dam facing toward east spillway.

PHOTO 4: Downstream view towards Little Sugar Creek, facing north-west. Note concrete patching in attempts to stabalize embankment.

PHOTO 5: View of west spillway, facing northwest.

PHOTO 6: View of west spillway, facing northwest.

PHOTO 7: View of west spillway facing northeast towards western-most bay of the spillway and concrete stabalized embankment.

PHOTO 8: View of west spillway facing northeast.

PHOTO 9: View of east spillway facing northeast.

PHOTO 10: View of east spillway and retaining wall facing east. The proposed construction staging area is pictured in the background.

PHOTO 11: View of retaining walls downstream of the dam
with poured concrete to stabalize embankments, facing west.

PHOTO 12: Downstream view facing southwest.

PHOTO 13: View of cabin from resort period (c. 1925) found in mobile home community east of Lake Bella Vista on hillside. This is an example of a typical cabin that was built as a part of the Lake Bella Vista resort development.

Hermely, Alan

Sent:
To:
Subject:

Hector, we have no concerns with the project proceeding as planned. Robert

On 09/22/14, **"Abreu, Hector"** <hector.abreu@fema.dhs.gov> wrote:
Robert,
Attached please see Section 106 consultation letter for the referred project. If you have any questions please feel free to call me or Mr. Alan T. Hermely

Environmental Specialist at 940-383-7232 or Alan.Hermely@fema.dhs.gov.

Thanks

Hector M. Abreu, AIC PA

EHP Tribal Liaison

Environmental and Historic Preservation (EHP) Branch

FEMA Region 6

800 North Loop 288

Denton, TX 76209

Tel: 940.383.7221

Cel: 940.435.5382

Fax: 940-297-0152

Hector.abreu@fema.dhs.gov

--
Robert Cast
Tribal Historic Preservation Officer
Caddo Nation of Oklahoma
P. O. Box 487
Binger, Oklahoma 73009

From: Kim Jumper
To: Abreu, Hector
Subject: RE: FEMA DR-1975-AR, PW 1562
Date: Thursday, October 16, 2014 11:59:19 AM

This letter is in response to the above referenced project.

The Shawnee Tribe's Tribal Historic Preservation Department concurs that no known historic properties will be negatively impacted by this project. We have no issues or concerns at this time, but in the event that archaeological materials are encountered during construction, use, or maintenance of this location, please re-notify us at that time as we would like to resume consultation under such a circumstance.

Thank you for giving us the opportunity to comment on this project.

Sincerely,
Kim Jumper, THPO
Shawnee Tribe

From: Abreu, Hector [mailto:hector.abreu@fema.dhs.gov]
Sent: Monday, September 22, 2014 12:04 PM
To: kim.jumper@shawnee-tribe.com
Subject: FEMA DR-1975-AR, PW 1562

Kim,
Attached please see Section 106 consultation letter for the referred project. If you have any questions please feel free to call me or Mr. Alan T. Hermely Environmental Specialist at 940-383-7232 or Alan.Hermely@fema.dhs.gov.

Thanks

Hector M. Abreu, AIC PA
EHP Tribal Liaison
Environmental and Historic Preservation (EHP) Branch
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Hector.abreu@fema.dhs.gov

TRIBAL HISTORIC PRESERVATION OFFICE

Date: **September 29, 2014** **File: 1314-1811AR-9**

RE: **FEMA DR-1975-AR Benton County PW# 1562 Replace Lake Bella Vista Dam**

FEMA, Region 6
Hector Abreu
800 N. Loop 288
Denton, TX 76209

Dear Mr. Abreu,

The Osage Nation Historic Preservation Office has evaluated your submission regarding the proposed **FEMA DR-1975-AR Benton County PW# 1562 Replace Lake Bella Vista Dam** and determined that the proposed project **will not adversely affect properties of cultural or sacred significance to the Osage Nation. The finding of this NHPA Section 106 review has resulted in a determination of "No Properties" with SHPO concurrence. Please provide our office with a copy of the SHPO response to this undertaking.**

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d) (6) (A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969). **The Osage Nation concurs that as a part of the scoping process the U.S. Department of Homeland Security has fulfilled NHPA and NEPA compliance by consulting with the Osage Nation Historic Preservation Office in regard to the proposed project referenced as FEMA DR-1975-AR Benton County PW# 1562 Replace Lake Bella Vista Dam.**

The Osage Nation has vital interests in protecting its historic and ancestral cultural resources. We do not anticipate that this project will adversely impact any cultural resources or human remains protected under the NHPA, NEPA, the Native American Graves Protection and Repatriation Act, or Osage law. **If, however, artifacts or human remains are discovered during project construction, we ask that work cease immediately and the Osage Nation Historic Preservation Office be contacted.**

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

Andrea A. Hunter, Ph.D.
Director, Tribal Historic Preservation Officer

Zuzana Chovanec, Ph.D.
Archaeologist

627 Grandview, Pawhuska, OK 74056, (918) 287-5328, Fax (918) 287-5376