US Army Corps of Engineers ®

JOHNSON COUNTY, KENTUCKY SECTION 202 PROJECT

UNSIGNED FONSI, 404 (B)(1) ANALYSIS, AND HABITAT SURVEY

VOLUME 3: ENVIRONMENTAL APPENDIX

OCTOBER 2019
U.S. ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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1. Unsigned Draft Finding of No Significant Impact

FINDING OF NO SIGNIFICANT IMPACT

JOHNSON COUNTY, KENTUCKY
SECTION 202 FLOOD DAMAGE REDUCTION
JOHNSON COUNTY, KENTUCKY

The U.S. Army Corps of Engineers, Louisville District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The Draft Detailed Project Report and Environmental Assessment (DPR/EA) dated February 2020, for the Johnson County, Kentucky Section 202 Flood Damage Reduction, addresses flood risks and damages and feasibility in Johnson County, Kentucky. The final recommendation will be contained in the report of the Director, dated **TBD**.

The Final DPR/EA, incorporated herein by reference, evaluated various alternatives that would provide flood risk reduction measures for the city of Paintsville and Johnson County that comply with Section 202, reduce the risk to life loss in the city of Paintsville and Johnson County, Kentucky due to flooding, and maintain the social, cultural and economic cohesion of the communities within the study area. The recommended plan is the National Economic Development Plan and includes:

- a downtown Paintsville floodwall and gravity gate structure with interior alternative floodwall, levees, interceptor sewer lines, pressurized pipes and a Flood Warning and Emergency Evacuation Plan, combined with a volunteer program of non-structural measures for Johnson County, Kentucky for structures that are located outside the City limits that are in the flood plain (referred to as Alternative 2R and 4R in the DPR)..

In addition to a "no action" plan, 4 alternatives were evaluated. The alternatives included:

- Alternative 1: Dual floodwalls extending from Levisa Fork and following upstream from Paint Creek with pumps and FWEEP
- Alternative 2: Main downtown Paintsville floodwall and gate structure on the western bank of the Levisa Fork with interior short walls, levees, interceptor sewers, pressurized pipes and FWEEP
- Alternative 3: Main downtown Paintsville floodwall and gate structure to the west of CSX Railroad property with short interior walls, levees, interceptor sewers, pressurized pipes and FWEEP
- Alternative 4: Nonstructural program for Johnson County, Kentucky, outside of the area of protection for the city of Paintsville

Due to various reasons, such as cost effectiveness or efficiency, presented in the DPR/EA, Alternative 2 and as appropriations allow, all or a portion of Alternative 4 – a voluntary nonstructural program in Johnson County, Kentucky involving floodproofing and permanent floodplain evacuation along with the No Action Alternative are the only alternatives that were fully evaluated for environmental effects. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Flooding	☒	☐	☐
Climate	☐	☐	☒
Soils and Geology	☒	☐	☐
Surface Waters	☒	☐	☐
Groundwater	☒	☐	☐
Floodplains	☒	☐	☐
Wetlands	☐	☐	☒
Fish	☒	☐	☐
Wildlife	☒	☐	☐
Terrestrial and Aquatic Vegetation	☒	☐	☐
Federally Endangered and Threatened Species	☒	☐	☐
State-Listed Species	☒	☐	☐
Critical Habitat	☐	☐	☒
Recreational, Scenic, and Aesthetic Resources	☒	☐	☐
Cultural Resources	☐	☒	☐
Air Quality	☐	☐	☒
Hazardous, Toxic, and Radioactive Waste	☒	☐	☐
Socioeconomics	☒	☐	☐
Environmental Justice	☒	☐	☐
Cumulative Effects	☒	☐	☐

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the DPR/EA will be implemented, if appropriate, to minimize impacts.

The recommended plan for the Johnson County/Paintsville flood risk management project has the potential to effect archaeological sites and historic properties under 36 CFR 800.4(d)(2). Currently, the Corps is working closely with the SHPO, tribal nations, and consulting parties to develop a Programmatic Agreement outlining the mitigation stipulations to resolve adverse effects to historic properties and archaeological sites that have either been recommended eligible for the listing to the NRHP or are already listed in the NRHP located within the APE.

A 30-day public review of the draft DPR/EA and FONSI will be completed. All comments submitted during the public review period will be responded to in the Final DPR/EA and FONSI.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the recommended plan may affect but is not likely to adversely affect the following federally listed species or their designated critical habitat: Northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), and the big sandy crayfish (*Cambarus callainus*). The Corps determination will be coordinated with the U.S. Fish and Wildlife Service and their concurrence will be requested.

Pursuant to section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that historic properties may be adversely affected by the recommended plan. The Corps and the SHPO (Kentucky Heritage Council), tribal nations, and consulting parties are working together to develop a Programmatic Agreement outlining the mitigation stipulations to resolve adverse effects to historic properties. The agreement will be complete prior to the final DPR/EA and FONSI. All terms and conditions resulting from the agreement shall be implemented in order to minimize adverse impacts to historic properties.

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the recommended plan has been found to be compliant with section 404(b) (1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b) (1) Guidelines evaluation is found in Volume 3 of the DPR/EA.

A water quality certification pursuant to section 401 of the Clean Water Act will be obtained from the Kentucky Division of Water prior to construction. During the Public Review, the Corps will coordinate with the Kentucky Division of Water to determine if the recommended plan appears to meet the requirements of the water quality certification, pending confirmation based on information to be developed during the pre-construction engineering and design phase.

Technical, environmental, and economic criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

_____
Date

_____
Antoinette R. Gant
Colonel, U.S. Army
District Commander

2. Clean Water Act 404 (b)(1) Guidelines Analysis

Section 202 Flood Damage Reduction
404 (b) (1) Evaluation
Flood Damage Reduction
Johnson County, Kentucky

I. Project Description.

a. Location

Johnson County, Kentucky is located in the coalfields of Eastern Kentucky amid the foothills of the Appalachian Mountains in the Cumberland Plateau. It is the most significant coal producing region in the state and is also important in terms of natural gas production. As part of the Big Sandy River Basin, Johnson County lies within the Mountain and Creek Bottom Area, which is characterized by high, sharp-crested ridges with little level upland area and narrow stream valleys. Flat, level ground is usually found along stream terraces, where typically local communities are located such as Flat Gap, Staffordsville, Van Lear, and its county seat, Paintsville.

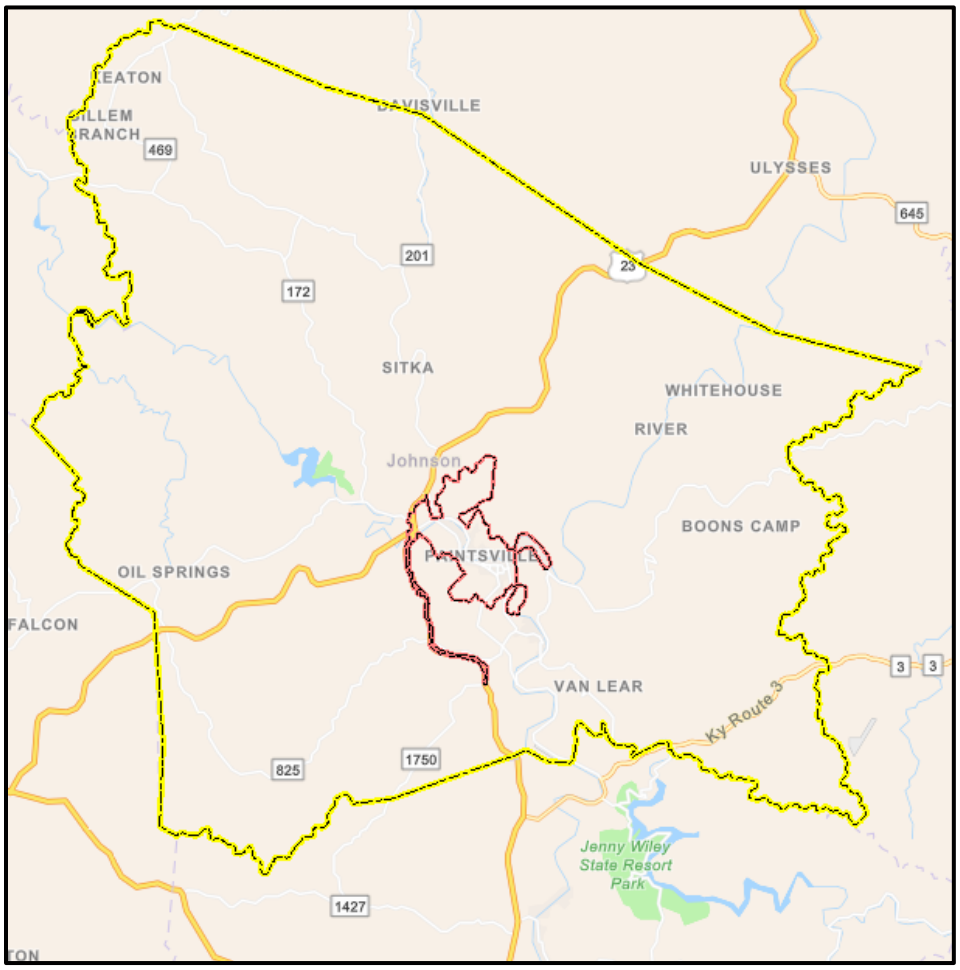


Figure 1. Levisa Fork and Paint Creek through Johnson County, Kentucky.

b. Authority
Section 202 of Public Law. 96-367 (October 1980) - Flood Control.

c. Study Partners and Coordination
The Johnson County Fiscal Court is the non-Federal sponsor for this project. A site visit was performed in February 2019 by representatives of the Johnson County, Kentucky Section 202 project delivery team (PDT) members. Historic photographic evidence, scour and documentation demonstrate the history of flooding.

d. Purpose and Scope
Frequent and severe over-bank flooding is a severe problem in Johnson County. Streams in the county undergo extreme flow fluctuations resulting in the inundation of human development in the floodplain, as well as the loss of life, property, business revenues, school days, and tax revenues. Various factors were identified as contributing to these incidents including climatic and weather-related rainfall events, steep topography, land development, and ownership patterns.

Levisa Fork, one of the headwaters of the Big Sandy River Basin, passes through Johnson County and city of Paintsville collecting rainfall from Paint Creek, Little Mudlick Creek and other small tributaries in Johnson County. Paintsville Lake is located approximately 8 miles upstream of the Levisa Fork along Paint Creek and controls nearly 60% of flows in the watershed.

The city of Paintsville is located at the confluence of Levisa Fork and Paint Creek. It is the largest community in Johnson County with a population of approximately 5500 citizens, and contains critical infrastructure for the region such as the Big Sandy Rural Electrical Cooperative Company, Paintsville Fire Department, and the Paul B. Hall Regional Medical Center

The Levisa Fork Basin (the land area, or watershed, drained by the Levisa Fork of Big Sandy River) was devastated in the April 1977 flood, causing an estimated $1.19 trillion (2019 price level) in damages. As a direct result of the losses from this flood, the Energy and Water Development Appropriations Act of 1981 (Public Law (PL) 96-367) provided authorization for development of flood protection measures for the Levisa and Tug Forks of the Big Sandy River. Section 202 of that authorization directed the Secretary of the Army, acting through the Chief of Engineers, to design and construct, at full Federal expense, flood damage reduction measures in those areas impacted by the flood.

e. General Description of Dredged or Fill Material
Paint Creek Gravity Drainage Structure

The floodwall will include a gravity drainage structure that passes flow during Paint Creek head water events and prevents the back flow of Levisa Fork high flood stage. The base of this structure will be constructed in two phases to allow the bypass of flow. The creek will flow around the temporary cofferdam during the construction of the North structure base. Once the base of the north structure is constructed flow will pass through the north gate opening while the remainder of the structure is being constructed. The structure will be designed to pass Paint Creek flow at the same elevation that is currently present, approximately elevation 565' NAVD88. The structure's wing walls will tie into the north and south Paint Creek banks and will span approximately 200' of bank on each side of the creek. The width of the structure is approximately 125' and will be centered slightly north of the creek centerline. Leading up to and after the structure's aprons, around the wing walls, and the embankment on the opposite side of Levisa will all be armored with riprap to prevent erosion and ensure structural integrity. The gravity drainage structure will include 3 tainter Gates each 25' wide and 25' tall. The north gate will have an invert 5' lower than the others and will pass all low Paint Creek flow.

Action

Three 25 foot (ft.) x 25 ft. HS steel tainter gates side by side by side in the Paint Creek channel will be constructed to reduce the risks of flooding to the city of Paintsville. Clearing and grubbing of the existing riparian vegetation will be required for up to 220’ on each bank.

Location

The Main Floodwall will intersect Paint Creek 340 feet west of its confluence with Levisa.

Material

Concrete, grout, steel, stone, sandbags, wood, plastic, and construction equipment. The concrete structure, grout sealant, and steel gates, rebar, and dowels would remain after construction. Wood used for forming concrete and any stone placed for temporary access roads will be removed upon completion of construction. Materials for the cofferdam (soil, sheet piling, sandbags, plastic, and well point dewatering system) would be deconstructed and removed from the site. Unsuitable soils for abutment excavation, organic material and other debris would be appropriately disposed of in accordance with applicable laws and regulations. Recycling of materials would be encouraged. Clean material (e.g., lean clay soil and sound rock) may be reused as appropriate during project construction or offsite when consistent with applicable environmental regulations. It is anticipated that some of the rebar and gate equipment will be constructed on site and placed with cranes. Equipment would work from the creek banks and in the dewatered structure foundation. The use of hand tools and equipment may be necessary to prepare the foundation and install the culvert system in the stream. The use of a heavy construction equipment will be required for earthwork and material hauling. Access to the site may be accomplished by grading a haul road from the north bank. All material would be obtained from an approved location.

Storm Sewer Outlets

Each floodwall or levee reach will require the installation of new storm sewer outlets to both existing storm sewers and existing drainage ditches. Thirteen existing storm sewers which all outlet into paint Creek and range from 24-36" in diameter will be removed and replaced with a minimum of 30' of new storm sewer, a new headwall, means of back flow prevention, and erosion prevention measures such as riprap.

Eight new storm sewers will be constructed in areas where proposed levees or floodwalls intersect the current flow of storm water through ditches. These new storm sewer pipes will range from 24-60" in diameter. Each storm line will have an inlet and outlet headwall, means of backflow prevention, and erosion prevention measures.

Action

Four of the eight new storm sewers will be constructed below the OHW mark. These storm sewers will all be 60" in diameter and will be located in Preston Branch, Flat Rock Branch, and Blackberry Branch and 30" in the ditch near the CSX Rail road that is proposed to be intersected by the States Street levee.

These storm sewers will be associated with levees discussed below.

Material

Bedding stone, Riprap, and concrete pipe and construction equipment. All materials would remain after construction with the exception of stone check dams used to filter sediment. These would likely be smoothed in place after the sediment is removed.

Levees and Floodwalls

The levees and floodwalls associated with this job all intend to set back from the creek and river to minimize environmental effects however there are at three areas that require closer alignment in order to minimize property acquisitions. These areas include the north Paint Creek bank near the Court House 450 ft. length, near the fire department 250 ft. length, and the north bank between the CSX rail road and Bridge Street 800 ft. length.

In addition there are also four levee reaches that intersect steep ravine like ditches including Preston branch, Flat Rock Branch, Blackberry Branch, and a significantly less steep ditch near the CSX rail road that intersects the proposed States Street levee.

Action

Where the levees and floodwalls are located in close proximity to the creek bank, clearing and grubbing will be required. In areas that clearing and grubbing takes all of the creek bank forest, erosion protection will be required likely in the form of riprap. In places like the stretch between the rail road and bridge street where the embankment is very steep and has a lower bench above

the OHW mark, some bank reshaping may be required to safely facilitate construction and support the floodwall.

Preston Branch, Flat Rock Branch, and Blackberry Branch will each require large clearing and grubbing efforts due to the width of each levee's base. The branch's flow will be maintained through culverts that mimic the existing flow as close as possible with similar slope and location. Erosion near the inlet and outlet will be prevented with the use of riprap.

Material

Levees will be constructed primarily with material from the selected borrow site that has impervious properties. This material will be placed in loose lifts and compacted. Storm sewers will consist of either concrete or plastic pipe and will be bedded on a low strength grout material. Nearly all materials used during construction will be made permanent with exception to storm water pollution prevention measures like check dams and silt fences which will be removed once vegetation cover is established.

For floodwalls, concrete, grout, steel, stone, sandbags, wood, plastic, and construction equipment will be required. The concrete structure, grout sealant, rebar, and dowels would remain after construction. Wood used for forming concrete and any stone placed for temporary access roads will be removed upon completion of construction.

For both construction of floodwalls and levees, unsuitable soils from inspection pit excavation and foundation preparation like organic material and other debris would be appropriately disposed of in accordance with applicable laws and regulations. Recycling of materials would be encouraged and use of fill on site is preferable. All material would be obtained from an approved location.

Type of Site

Stream and Riparian Area

Type of Habitat

Aquatic Habitat

Paint Creek drains 169 square miles of Johnson, Magoffin and Morgan Counties, Kentucky. The basin is roughly rectangular in shape, about six miles wide by 24 miles in length. Paint Creek is formed by the confluence of Little Paint Creek and Open Fork Paint Creek. Paint Creek flows east through the center of Paintsville. Paint Creek is approximately 20 miles and is a tributary draining into the Levisa Fork at the Eastern side of Paintsville near river mile 62.7. Total elevation fall from the head of Little Paint Creek to the mouth of Paint Creek is 510 feet in 34.9 miles. According to Kentucky Division of Water, Paint Creek is listed as non-supporting on the 303(d) list for fecal coliform and E. coli from mile 0.0 to 8.3, found entirely within the

Paintsville city limits. Sections of Paint Creek are impounded by the Paintsville Lake Dam constructed by the Corps in 1983.

Terrestrial Habitat
Most of Paint Creek contains a mosaic of 30-50 feet wide areas of Riparian Habitat on each side of the river. Many areas are also maintained in turf grasses or sparse vegetation right up to the bank. Riparian areas that contain mature trees have 15% of the trees are 15-22 inch diameter at breast height (DBH), 50% are 8 to 10 inch DBH, and 35% are less than 8 inch DBH. Species include mixed hardwoods such as oak species (Quercus spp.), American sycamore (Platanus occidentalis), mountain laurel (Kalmia latifolia), yellow poplar (Liriodendron tulipifera), and Chinese privet (Ligustrum sinense), an invasive, exotic species. Most of areas also were covered in kudzu (Pueraria montana).

Timing and Duration of Discharge
Construction below OHW would be scheduled to coincide with low flow conditions and take place between the dates of July 1st through September 31st to reduce sedimentation impacts.

Description of Disposal Method
Paint Creek Drainage Structure
The base of this structure will be constructed in two phases to allow the bypass of flow. The creek will flow around the temporary cofferdam during the construction of the North structure base. Once the base of the north structure is constructed flow will pass through the north gate opening while the remainder of the structure is being constructed.

Storm Sewer Outlets
All existing storm sewers and some new will be stabilized with new headwalls and outlet protection in the form of riprap. In the current state most storm sewer outlet pipes have significant erosion exposing the pipes and bare soil. The headwalls and riprap will be constructed in a manner that will correct the issue and prevent it from occurring in the future. In some cases the riprap may be required to extend down to the OHW. The width of this riprap would be around 8 ft. and could be constructed in a manner to avoid mature trees. The construction of these outlets should not interfere with creek flow and could be placed at any time of the year avoiding high flows and rain events.

Levees and Floodwalls
Some of the levees specifically Blackberry branch, Flat Rock, and King's Addition cross the branches OHW. In these instances the culverts would be installed adjacent to the streams, and flow would pass through the culverts while the existing branch ditch is compacted and the levees are constructed. BMPs would be used to prevent sediment and silt from entering the waterways.

II. Factual Determinations

a. Physical Substrate Determinations

Paint Creek Drainage Structure

The structure footprint will be approximately 200 ft. spanning the full width of Paint Creek. This footprint will be mostly concrete but will be designed to maintain the existing elevation of the stream bottom in order to prevent species migration. An additional amount of clearing and grubbing of the riparian vegetation will be required up to 220 feet total on each side of the stream bank.

Storm Sewer Outlets

Thirteen existing storm sewers which all outlet into Paint Creek and range from 24-36" in diameter will be removed and replaced with a new storm sewer of similar diameter, a new headwall, means of back flow prevention, and erosion prevention measures such as riprap.

Eight new storm sewers will be constructed in areas where proposed levees or floodwalls intersect the current flow of storm water through ditches. These new storm sewer pipes will range from 24-60" in diameter. Each storm line will have an inlet and outlet headwall, means of backflow prevention, and erosion prevention measures. Lengths of these structures depend on the base width of the structure plus a 15 foot clear zone on each side. For floodwalls the pipes would be approximately 35' long. For levees the pipes will be considerably longer.

Levees and Floodwalls

In addition there are also four levee reaches that intersect steep ravine like ditches including Preston branch, Flat Rock Branch, Blackberry Branch, and a significantly less steep ditch near the CSX rail road that intersects the proposed States Street levee. These tributary areas are intermittent and often dry. Lengths of the structure foot prints are dependent of levee slopes and top height.

Storage Volume

N/A

Water Column

Removal small amounts of substrate to prepare site for riprapping may cause localized and short-term increases in turbidity and suspended solids. Much of the work will be performed in the dry with the use of cofferdams or during the dry season.

Sediment Type

Sediments resulting from erosion along river banks transported by water flow are composed of sorted sand, silt, and other fine materials.

Dredged/Fill Material Movement
Stream bank site preparation would result in de minimis discharge of material into Paint Creek and possibly some to Levisa Fork. Construction during low flow conditions would reduce movement of sediment. Construction Best Management Practices (BMPs) will minimize material from reentering the water.

(1) Actions Taken to Minimize Impacts.

- Construction BMPs would be implemented to minimize impacts to the riparian zone and riverbed. BMPs, such as silt fencing, riprap, filter cloth, check dams, would also help control erosion and resuspension of soil and sediments.
- The river banks would be stabilized and vegetation would be reestablished where appropriate to reduce any potential bank erosion.

b. Water Circulation, Fluctuation, and Salinity Determinations
Water chemistry, odor, taste, dissolved oxygen levels, nutrients, and eutrophication would not be significantly affected by the operations. Any minor effects would stabilize to preconstruction ranges quickly when construction activities were complete.

(1) Water.
(a) Salinity. Water salinity not applicable.
(b) Water Chemistry. The proposed project should not have any effects.
(c) Clarity. The proposed project could cause periodic increases in total solids and total suspended solids during and for a short period after site preparation and during culvert placement. A decrease in water clarity would be expected during culvert placement and berm construction. Once construction is complete, there should be localized improvements from current conditions due to significant reduction in sediments entering the water along the project area.
(d) Color. No significant impact is expected.
(e) Odor. No significant impact is expected.
(f) Taste. No significant impact is expected.
(g) Nutrients. The proposed action could cause temporary nutrient increases during periods of suspension of sediment and organic debris.
(h) Eutrophication. No significant impacts are anticipated.

(2) Current Patterns and Circulation.
No significant Effects
(a) Current Patterns and Flow. There would be a minor amount of flow change downstream of the structure on Paint Creek. Flow patterns would not be significantly change within the project area.

(b) Velocity. The proposed project would maintain velocities upstream of the culverts to the greatest extent possible. Velocities downstream of the culverts would see very little change in velocities. No significant effects should occur under normal and low flow conditions (2 year event and less).
(c) Stratification. No changes in water stratification anticipated.
(d) Hydrologic Regime. No significant impact is expected.

(3) Normal Water Fluctuations. The proposed action should not change the normal river stages (2 year event and less).
(4) Salinity Gradients. Not applicable
(5) Actions That Will Be Taken to Minimize Impacts.

- Only the minimum amount of vegetation will be cleared for placement and construction
- Culvert placement and berm construction in the channel would be limited to low flow conditions to minimize overall impacts of sediment disturbances.

c. Suspended Particulate/Turbidity Determinations.
(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site. Placement of structures would potential result in short-term suspension of particulates. Since the substrate is primarily bedrock, there would be very minor amounts of particulates available to suspend. Adverse impacts would be limited to periods of construction and for a short period following activity.
(2) Effects on Chemical and Physical Properties of the Water Column. The proposed action would have no effect on chemical or physical properties of the water column.
(a) Light Penetration. Temporary increases in suspended sediment loads and turbidity would decrease light penetration through the water column, but impacts would be of short duration and have no longer term impacts.
(b) Dissolved Oxygen. No significant impact is expected.
(c) Aesthetics. Short-term construction impacts would be anticipated.

d. Contaminant Determinations.
No contaminated materials would be released during construction of this project. Should contamination be found, necessary steps to avoid the materials or clean-up of the area would take place.

e. Aquatic Ecosystem and Organism Determinations.
(1) Effects on Plankton. The proposed action could cause some mortality because of increases in total suspended solids and turbidity and decreases in dissolved oxygen levels during construction periods. Impacts will be temporary and short-term in nature, and re-colonization of the area by plankton should occur quickly after construction is complete.

(2) Effects on Benthos. Temporary effects on benthic macroinvertebrates would occur during construction.
(3) Effects on Nekton. No significant impacts are anticipated.
(4) Effects on Aquatic Food Web. No significant impacts are anticipated.
(5) Threatened and Endangered Species. Coordination with US Fish and Wildlife Service and Kentucky Department of Fish and Wildlife Resources revealed no threatened or endangered species are reported in the project area other than being in the range of the Indiana bat and Northern long-eared bat. Any tree clearing activities that would affect potential summer roosting habitat would be coordinated with the Service.
(6) Wildlife Habitat. The some adjacent areas along Paint Creek in Paintsville are manicured turf grasses. Wildlife use of the riparian is likely limited to common urban species due to the significant amount of disturbance.

f. Determination of Cumulative Effects on the Aquatic Ecosystem. The present state of the stream and adjacent riparian zone and floodplain results in degraded water quality from urban runoff, additional erosion and siltation, and continued deterioration of aquatic and terrestrial resources. The lowered flood profiles resulting from the proposed project would reduce the amount of urban pollution that enter the stream on an intermittent basis. Cumulative effects are also discussed in further detail in Section 4 of the EA.

g. Determination of Secondary Effects on the Aquatic Ecosystem.
No significant impact is anticipated.

III. Findings of Compliance or Non-Compliance with Restrictions on Discharge.
a. Adaptation of the Section 404(b)(1) Guidelines to this Evaluation.
No significant adaptations of the Section 404(b)(1) guidelines were made relative to this evaluation.
b. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem.
The objective of the proposed project is to reduce flood risk and improve the overall quality of life for the residents of Paintsville, KY and the surrounding Johnson County area. There were many alternatives evaluated in the USACE flood risk management feasibility study. The recommended plan provides the greatest amount of protection for the least cost. There are no known significant adverse effects to cultural, environmental or HTRW issues with the project and the City of Paintsville supports the project. To lessen the impacts, construction BMPs will be implemented to limit impacts to aquatic ecosystem.

c. Compliance with Applicable State Water Quality Standards.
Compliance with Kentucky water quality standards would be maintained and monitored. A Kentucky 401 Water Quality Certification covered under an individual permit will be applied for

and received prior to construction during the planning, engineering, and design phase of the project.

d. Compliance with Applicable Toxic Effluent Standard of Prohibition under Section 307 of the Clean Water Act.
Construction would not violate Section 307 of the Clean Water Act.

e. Compliance with the Endangered Species Act.
The federally-listed Indiana bat and/or Northern long-eared bat could occur within the proposed project area. Based on site assessments by Corps biologists, potential summer roost habitat for the two bat species does exist. Clearing activities would likely remove some minor amount of summer roosting habitat. Any tree removal would be conducted during winter months in order to reduce potential negative impacts. Based on the amount of time likely required until potential construction, USACE would propose to conduct additional habitat assessment after project designs were finalized to determine the exact clearing requirements. Additional correspondence would then be conducted with the Service. Based on cutting any trees in the winter and insuring that additional coordination with the Service in the future, USACE finds that the recommended action "may affect, but would not adversely affect" the Indiana bat and the Northern long-eared bat. Based on the habitat conditions described earlier in the document and that the drainage structure will be designed to allow existing normal flows and as not to impede species movement from upstream and downstream, USACE finds that the recommended action "may affect, but would not adversely affect" the Big Sandy Crayfish.

f. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972.
Not applicable.

g. Evaluation of Extent of Degradation of the Waters of the United States.
(1) Significant Adverse Effects on Human Health and Welfare.
(a) Municipal and Private Water Supplies. The proposed action would not have any significant adverse effects to municipal or private water supplies.
(b) Recreation and Commercial Fisheries. The proposed action would not have any significant adverse effects to recreation or commercial fisheries.
(c) Benthic Organisms. Populations of benthic organisms would be impacted at the construction site, temporarily during construction. The proposed action would not have any significant adverse effects.

(d) Fisheries Resources. Impacts to fisheries resources are expected to be minimal. The proposed action would not have any significant adverse effects.

(e) Shellfish. No significant shellfish resources (mussels) of commercial value are found at the construction site. The proposed action would not have any significant adverse effects.

(f) Wildlife. The proposed action would not have any significant adverse effects.
(g) Special Aquatic Sites. No special aquatic sites are identified within the project area.
(2) Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems. Life stages of aquatic and terrestrial species would not be adversely affected.
(3) Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity, and Stability. The proposed action would have no significantly adverse impacts on life stages of aquatic life and other wildlife dependent on aquatic ecosystems.
(4) Significant Adverse Effects on Recreational, Aesthetic, and Economic Values. The proposed action would not have any significant adverse effects.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the discharge on the Aquatic Ecosystem.

- Best Management Practices would be implemented to minimize impacts to the riparian zone and the riverbed. BMPs would also help control erosion and re-suspension of soil and sediments
- Construction activities would be limited to low flow conditions to minimize the overall effects of sediment disturbance.
- Alterations of the river bank would be limited to the greatest extent possible.

i. On the Basis of EPA 404 (b) (1) Guidelines, the Proposed Disposal Site for the Discharge of Dredged or Fill Material is:

In compliance with requirements of these guidelines, with the inclusion of appropriate conditions and construction BMPs to minimize impacts to the aquatic ecosystem.

3. Habitat Survey

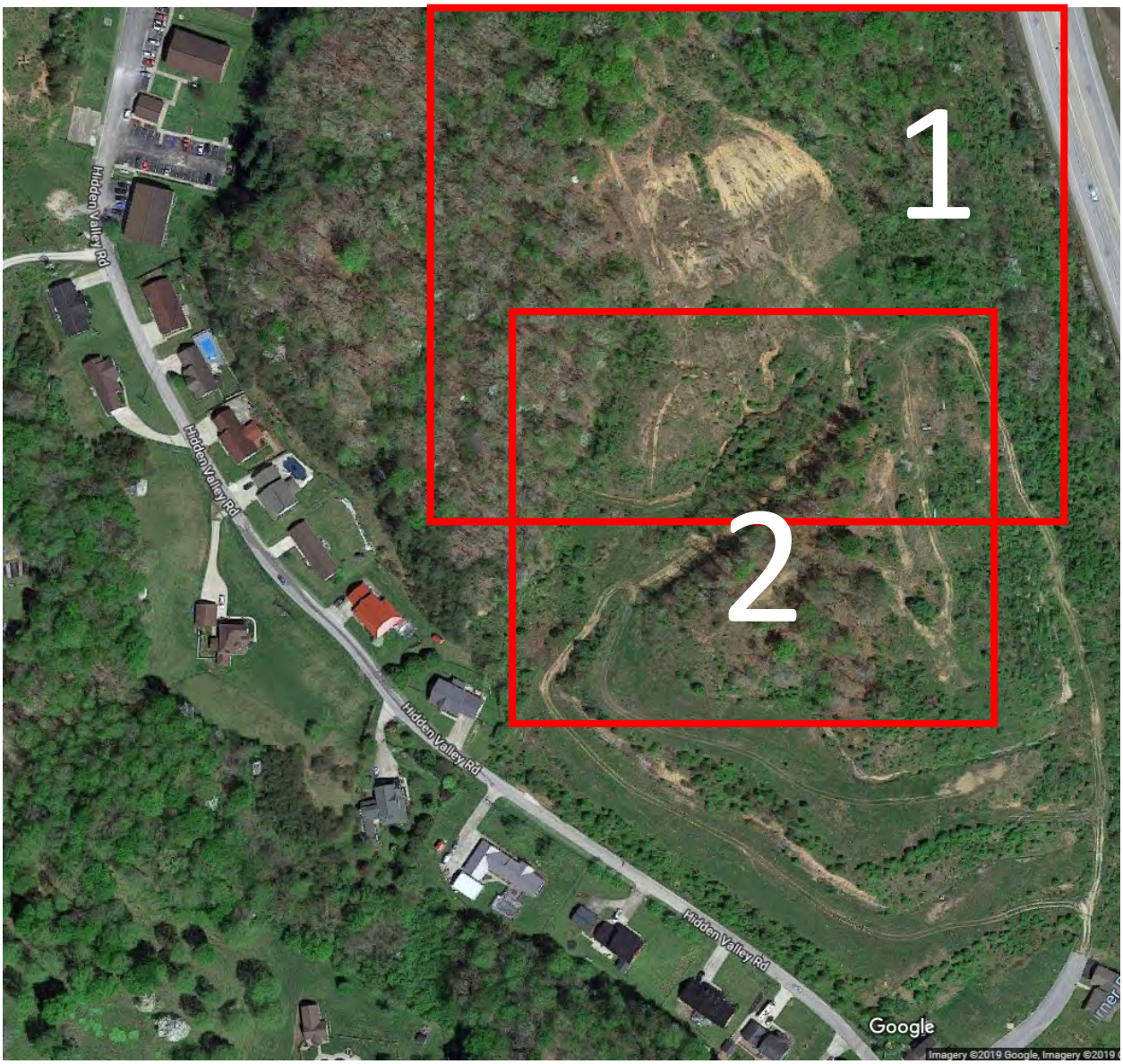
Bat Habitat Assessment Site Visit

Paintsville, KY

September 4, 2019

Completed areas are shown with white ovals.
Additionally, borrow area and Johnson County Judicial Center were surveyed.

Borrow Area


1
2
Hidden Valley Rd
Hidden Valley Rd
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Imagery ©2019 Google, Imagery ©2019


1
1-2 to 1-3
1-9
1-5 to 1-8
Google
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Photo 1-1. Slope adjacent to and northern portion of main borrow area. Photo was taken from approximately 37.829699, -82.829450. Camera is facing northwest.

Photo 1-2. Potential bat habitat. Tree is located at approximately 37.830478, -82.829823, greater than 10” dbh, and maybe outside of borrow limits.

Photo 1-3. Further detail on potential bat habitat shown in Photo 1-2 located at 37.830478, -82.829823, which may be outside area of disturbance.

Photo 1-4. Small sycamore and cedar saplings, representative of the larger vegetation in the northern half of borrow area.

Photo 1-5. Potential bat habitat, potentially north of borrow area limits. Located at approximately 37.830172, -82.830766 (dead branch on left) and approximately 37.830230, -82.830786 (snag on right).

Photo 1-6. Detail of dead branch on left shown in Photo 1-5. Greater than 10” dbh.

Photo 1-7. Detail of snag on right shown in Photo 1-5. Approximately 9” dbh.

Photo 1-8. Further detail of snag shown on right in Photo 1-5.

Photo 1-9. Potential small wetland area located at approximately 37.830237, -82.830719.


2
2-16
2-12 to 2-13
2-14 to 2-15
2-9 to 2-11
2-1 to 2-3
2-7
2-4 to 2-5
2-8
2-6
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Photo 2-1. Vegetation within southwestern portion of borrow area. Photo was taken from approximately 37.828883, -82.830603. Camera facing east. Immature sycamores comprise lower elevations within borrow area.

Photo 2-2. Photo taken from approximately 37.828905, -82.830421. Camera facing east-northeast.

Photo 2-3. Photo taken from approximately 37.828905, -82.830421. Camera facing northeast.

Photo 2-4. Potential bat habitat located at approximately 37.828710, -82.830483, which could be outside the borrow area limits. Snag on far right is approximately 10” dbh with ~3-6” diameter snags.

Photo 2-5. Detail of dead branches on left in photo 2-4. Leftmost branch appears to be approximately 9-10” diameter.

Photo 2-6. Detail of dead branches at top of hickory tree located at approximately 37.828694, -82.830369. Appears to be approximately 3” diameter at most.

Photo 2-7. Potential bat habitat. Branches at top of white oak at approximately 37.828780, -82.830291. Greatest diameter may be 3”.

Photo 2-8. Potential bat habitat on white oak to left and snag to right (located at approximately 37.828669, -82.830080).

Photo 2-9. Tree with crevices and loose bark located at approximately 37.828946, -82.830031.

Photo 2-10. Crevice in tree shown in Photo 2-9.

Photo 2-11. Loose bark of tree shown in Photos 2-10 and 2-11.

Photo 2-12. Potential bat habitat in barely visible cavities within dead branch (see arrows to right). Located at approximately 37.829085, -82.829739. Branch appears to be approximately 8” diameter at most. Also, dead branch (left arrow) in adjacent tree shown in further detail in Photo 2-13.

Photo 2-13. Small dead branch approximately 4-5” diameter and located at approximately 37.829097, -82.829794.

Photo 2-14. Dead branches in red or black oak trees located at approximately 37.829065, -82.829654.

Photo 2-15. Detail in branch to right shown in Photo 2-14. Largest diameter is approximately 3-5”.

Photo 2-16. Dead branch with loose bark (see arrow and bracket) located at approximately 37.829168, -82.829639. Branch on red or black oak may be 5” diameter at most.

Johnson County Judicial Center

Understory characterized by jewelweed, poison ivy, goldenrod, privet, and honeysuckle.

Trees consist of box elder (most prevalent), sycamore (second most prevalent), black walnut, redbud, tulip poplar, elm, pawpaw, among others.

*Some snags were too close to one another to map on above aerial, but estimated GPS coordinates are provided in photo captions, and photos were taken working southwest to northeast. Additionally, some of the snags shown in photos may be too low in elevation/too far down the bank to be cleared for the project.

Photo 1. Looking east-northeast at tree line from southwestern corner of Johnson County Judicial Center's lawn.

Photo 2. Looking south-southeast at potential bat habitat (see arrow) directly adjacent to/west of project footprint (should be avoided).

Photo 3. Detail of snag shown in Photo 2 and located at approximately 37.824583, -82.828498.

Photo 4. Further detail of snag shown in Photos 2 & 3.

Photo 5. Further detail of snag shown in Photos 2-4.

Photo 6. Further detail of snag shown in Photos 2-5.

Photo 7. Potential bat habitat located at approximately 37.824587, -82.828430. Diameter of snags is probably 10” at most.

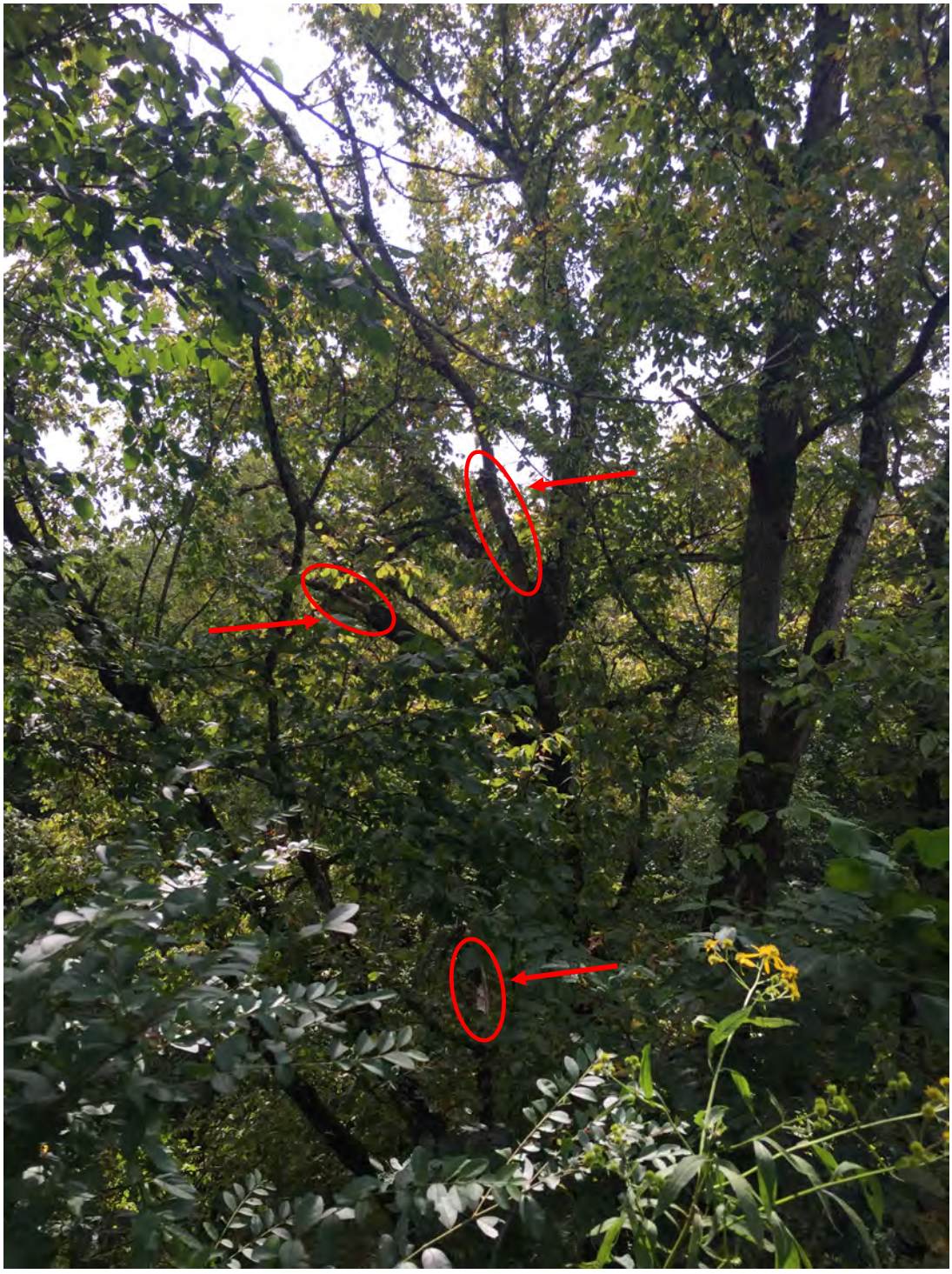

Photo 8. Potential bat habitat located at approximately 37.824619, -82.828331. Further detail of lowest branch shown in next photo.

Photo 9. Detail of lower dead branch shown in Photo 8. Likely 9 or 10” diameter.

Photo 10. Detail of upper 2 dead branches shown in Photo 8. Likely 5-6” and 10” diameter (left to right).

Photo 11. Dead branches at least 8” in diameter with loose bark located at approximately 37.824699, -82.828195.

Photo 12. Large dead sycamore with branches at least 10” diameter located at approximately 37.8247752, -82.8279733. Arrow points to at least one loose bark area with potential bat habitat.

Photo 13. Dead tree adjacent to sycamore tree at approximately 37.824821, -82.827939. May be small cracks or loose bark that could serve as bat habitat.

Photo 14. Two dead branches approximately 8” and 10” (left to right) in diameter located at approximately 37.824946, -82.827756.

Photo 15. More detail of two branches shown in Photo 14.

Photo 16. Cavity approximately 1’ X 2’ located at approximately 37.824944, -82.827735.

Photo 17. Further detail of cavity shown in Photo 16.

Photo 18. Dead tree with potential bat habitat approximately 6-8” in diameter located at approximately 37.825013, -82.827629. Arrow on left shows branch with hollowed out portions and arrow on right shows crack with potential habitat.

Photo 19. Further detail of branch with cavity that could serve as bat habitat, shown in Photo 18.

Photo 20. Dead branch approximately 5-8” diameter located at approximately 37.825019, -82.827620. Despite photo quality, appears to be some loose bark.

Photo 21. Sycamore tree with dead top (see arrow) approximately 10” in diameter. Multiple (3-4) dead branches as well, but probably too small (3-5” diameter) to serve as bat habitat. Located at approximately 37.825063, -82.827544.

Photo 22. Dead tree with loose bark under which bats could roost (see arrows). Diameter of largest branch is approximately 10”. Located at approximately 37.825063, -82.827544

Photo 23. Dead tree (approximately 10” dbh) with multiple dead branches located at approximately 37.825026, -82.827525. Arrow is pointing to loose bark under which bats could possibly roost.

Photo 24. Sycamore with multiple snags less than 6” in diameter located at approximately 37.825098, -82.827461.

Photo 25. Smooth dead tree approximately 12” dbh located at approximately 37.8251277, -82.8273768. Not habitat but ends of branches at top (shown in Photo 26) could be.

Photo 26. Dead branches at top of tree shown in Photo 23. Branches are likely 6-8” diameter at most.

Stormwater Drainage near 205 S Mayo St.

Photo 1. Vegetation in this area was characterized by kudzu, tulip poplar and sycamore saplings, a large box elder with small snags (less than 4” in diameter) and loose bark (way down the bank), and a silver maple with small snags and loose bark even farther down the bank. Jacob Sinkhorn said this entire area would not require clearing. Not sure if any potential bat habitat located here would need to be cleared.

Photo 2. Kudzu and tulip poplar sapling shown in foreground. In background (left of frame), large box elder with loose/curly bark & small snags (see arrows) can be seen. In background (middle of frame), large silver maple can be seen (see oval).

Photo 3. Loose or curly bark (leftmost arrow) and small snag (middle arrow; approximately 4” diameter at most) on large box elder. Snag with large crevice on silver maple (right arrow) shown in Photo 4.

Photo 4. Detail of snag with large crevice on silver maple shown in Photo 3. Snag is estimated at 10-12” diameter.

Photo 5. Second small snag on large box elder. Estimated at no more than 4” diameter.

Photo 6. Loose/curly bark on box elder shown in Photo 3 (leftmost arrow).

321 Broadway St

This area is characterized by box elder (most prevalent) , sycamore (second most prevalent),tulip poplar, honey locust, silver maple, sweet gum, black walnut, and Ohio buckeye, redbud trees and shrubby and/or understory plants such as jewelweed, blackberry, honeysuckle, privet, multiflora rose, Bradford pear, goldenrod, poison ivy, wild muscadine, and kudzu. Below are species, approximate dbh and snag diameters, and acronyms shown in map above (321 Broadway St).

Dead tree 1 (~6" dbh) —DT1

Dead tree 2 (~6" dbh) —DT2

Dead tree 3 (~6" dbh with dead top and loose bark) —DT3

Dead tree 4 (~11" dbh) —DT4

Fallen tree 1 (~9" dbh with approximately 6" diameter branches) —FT1

Fallen tree 2 (~9" dbh) —FT2

Box elder (~12" dbh with 2 snags ~9" diameter) —BE

Tree with flakey bark (~9 or 10" dbh) —FB

Other trees that did not appear to be potential bat habitat but were potentially within the tree removal footprint provided by Jacob include:

Box elder: 13" dbh

Tulip poplar:
- 10" dbh
- 5" dbh
- 25" dbh

Sweet gum: 4"dbh

Sycamore:
- 12" dbh
- 9" dbh
- 8" dbh (x2)

Silver maple

Photo 1. Looking south-southeast from behind southeastern corner of shopping center at 321 Broadway St at vegetation to be removed as part of the project. Red arrow indicates position from which Photo 2 was taken.

Photo 2. Looking east-northeast from location shown in Photo 1. Dead tree 1 (DT1) with approximately 6” dbh is shown in left of frame. Located at approximately 37.811870, -82.804871.

Photo 3. Looking east-southeast from location shown in Photo 1. DT2 with approximately 6” dbh is shown (arrow). Located at approximately 37.811811, -82.804836.

Photo 4. Another view of DT2 (see arrow).

Photo 5. Dead tree 3 (DT3) with loose bark. Located at approximately 37.811644, -82.804855.

Photo 6. Small dead tree (approximately 4” dbh) with loose bark; may be too small to serve as bat habitat (right arrow). Willow, or perhaps silver maple tree, with flakey bark (FB on map; left arrow). Located at approximately 37.811737, -82.804817.

Photo 7. Looking northeast from near power lines shown with southern arrow on the map. Northern area shows northern power line within footprint of this portion of project.

Photo 8. Looking southeast at tree line from near power lines shown with southern arrow on the map.

Photo 9. Looking north on Blackberry Branch which bisects (north-south) the footprint of this portion of the project. Camera located at approximately 37.8117830, -82.8046323.

Photo 10. Looking south on Blackberry Branch which bisects (north-south) the footprint of this portion of the project. Fallen tree 1 (FT1 on map) that is ~9” dbh with ~6” diameter branches is shown. Loose bark is evident if you zoom in on image (see arrow). Camera located at approximately 37.8117830, -82.8046323.

Photo 11. Loose bark on fallen tree 2 (FT2 on map) shown via red arrow.

Photo 12. Approximately 12” dbh box elder (BE on map) with 2 snags at least 9” diameter with loose bark (evident if you zoom in). Located at approximately 37.8117096, -82.8045442. More detail shown in Photo 13.

Photo 13. Box elder with 2 snags at least 9” diameter with loose bark shown in Photo 12 (BE on map).

Photo 14. Dead tree 4 (DT4 on map) with ~11” dbh. Located at approximately 37.811834, -82.804661.

State Street

This area (tree removal at end of road) is characterized by box elder (most prevalent), redbud, sycamore, mimosa, elm (second most prevalent), and silver maple trees. Brush and/or understory plants include privet, honeysuckle, and wild muscadine. One sycamore is approximately 4 feet dbh. The largest box elder was approximately 13” dbh. Because there was no right-of-entry from CSX Railroad for this portion of the project footprint, I do not have GPS points for several of the trees of interest listed below. Missing GPS points can be gathered on a subsequent site visit. The yard at the corner of State St (western end of road) and Depot Rd has two silver maples (SM1 and SM2) with loose bark. See below for list of potential bat habitat, approximate dbh and diameters, and acronyms corresponding to locations on map above (for some).

Silver maple 1 (~3’ dbh with loose bark and a few snags at end of branches) —SM1

Silver maple 2 (~5’ dbh with loose bark) —SM2

Dead tree (~12-13” dbh with numerous small cavities) —DT

Silver maple 3 (~12” dbh with cavity) —SM3

Sycamore (with small [~3” diameter] snags at top and one ~9” diameter mid- to lower canopy snag) —S1

Sycamore (~4’ dbh with no apparent bat habitat except possible loose bark) —S2

Box elder (with 8” tall holey snag) —BE

Photo 1. Silver maple 1 (SM1) with ~3’ dbh, loose bark, and multiple snags shown in foreground (37.812749, -82.795152). Silver maple 2 (SM2) with ~5’ dbh and loose bark in background (37.812935, -82.795089).

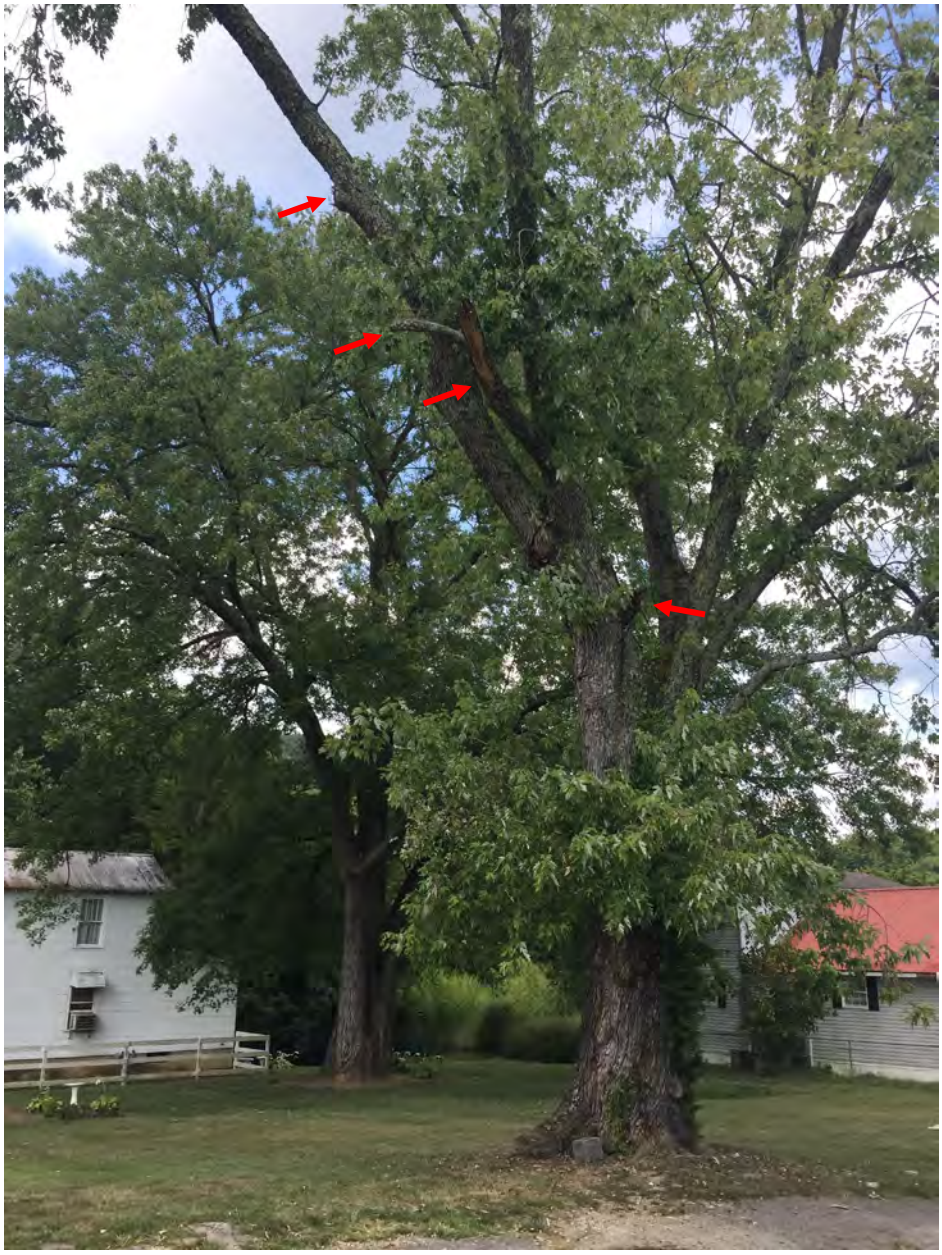

Photo 2. SM1 with a few snags/cavities visible (see arrows).

Photo 3. SM1 with at least one more snag/cavity visible (see arrow).

Photo 4. Looking east from eastern end of State St. Sycamore with dead branches at top (S1 on map) is shown (see left arrow; further detail shown in Photo 5). Large sycamore (approximately 4’ dbh; S2 on map) with no apparent bat habitat other than possible loose bark is also shown (right arrow).

Photo 5. Further detail of sycamore with small [~3-5” diameter] snags (S1 on map).

Photo 6. Silver maple 3 (SM3) with ~12” dbh and cavity (see oval).

Photo 7. Dead tree (~12-13” dbh) with numerous small cavities (DT on map).

Photo 8. Box elder with 8” diameter snag with loose bark (BE).