

Appendix G
Environmental Overview Documentation

**HISTORIC RESOURCES DOCUMENTED IN
PRELIMINARY WINDSHIELD SURVEY OF KY 194/ KY 632
(KYTC ITEM NO. 2-8702.00), PIKE COUNTY, KENTUCKY**

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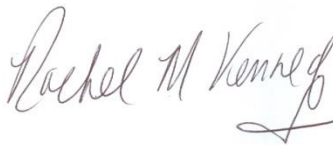
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January 17, 2014

ABSTRACT

This historic/cultural resource overview was prepared for the proposed improvement along KY 194/KY632 in Pike County (KYTC Item No. 2-8702.00). As part of this effort, Corn Island Archaeology (CIA) has assisted Qk4, Inc., in support of the Kentucky Transportation Cabinet, in their planning efforts by researching existing conditions within the project area relative to historic resources, assessing the potential for the presence of important unrecorded historic resources, and preparing an historic resources overview of the findings.

This overview of the result of background research and field observations was conducted by in December 2013 and January 2014. The results of a records check were received on December 11, 2013 (Reference No. FY14-1647) from the Kentucky Heritage Council/State Historic Preservation Office. The search revealed that there are no recorded historic resources within the project area. On December 13, a drive-through survey of the project corridor was made by CIA staff Tim Sullivan. The objective was to obtain a sense of the presence and number of buildings over 50 years of age along the corridor. Approximately 41 potential historic resources were identified, including five cemeteries. Analysis of this data and background research was accomplished by CIA architectural historian Rachel Kennedy in early January 2014.

The results of this study indicate the potential for historic resources along this corridor. Additional survey is recommended to determine eligibility for the National Register of Historic Places at the individual and district levels. Future research should also determine whether the unrecorded cemeteries meet Criterion Consideration C or D, utilizing guidance from National Register Bulletin 41, *Guidelines For Evaluating and Registering Cemeteries and Burial Places* and National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*.

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1

INTRODUCTION

From December 11 to 13, 2013, Corn Island Archaeology (CIA) conducted a preliminary cultural historic review of a 22-mile stretch of KY 194/KY632 in Pike County, Kentucky (**Figure 1**). The review was requested by Qk4 of Louisville in support of the Kentucky Transportation Cabinet (KYTC) which plans improvements along the route (KYTC Item No. 2-8702.00). The review included a records check with the Kentucky Heritage Council and a drive-through or windshield survey.

Figure 2 and **Figure 3** show the corridor planned for improvements, which traverses mountainous terrain in an area of active strip mining. The communities of Kimper and Phelps are located along this stretch of roadway. Kimper lies at the juncture of KY 1758 and KY 632. Other small communities nearby include Meta and Jamboree.



Figure 1. Location of Pike County, Kentucky.

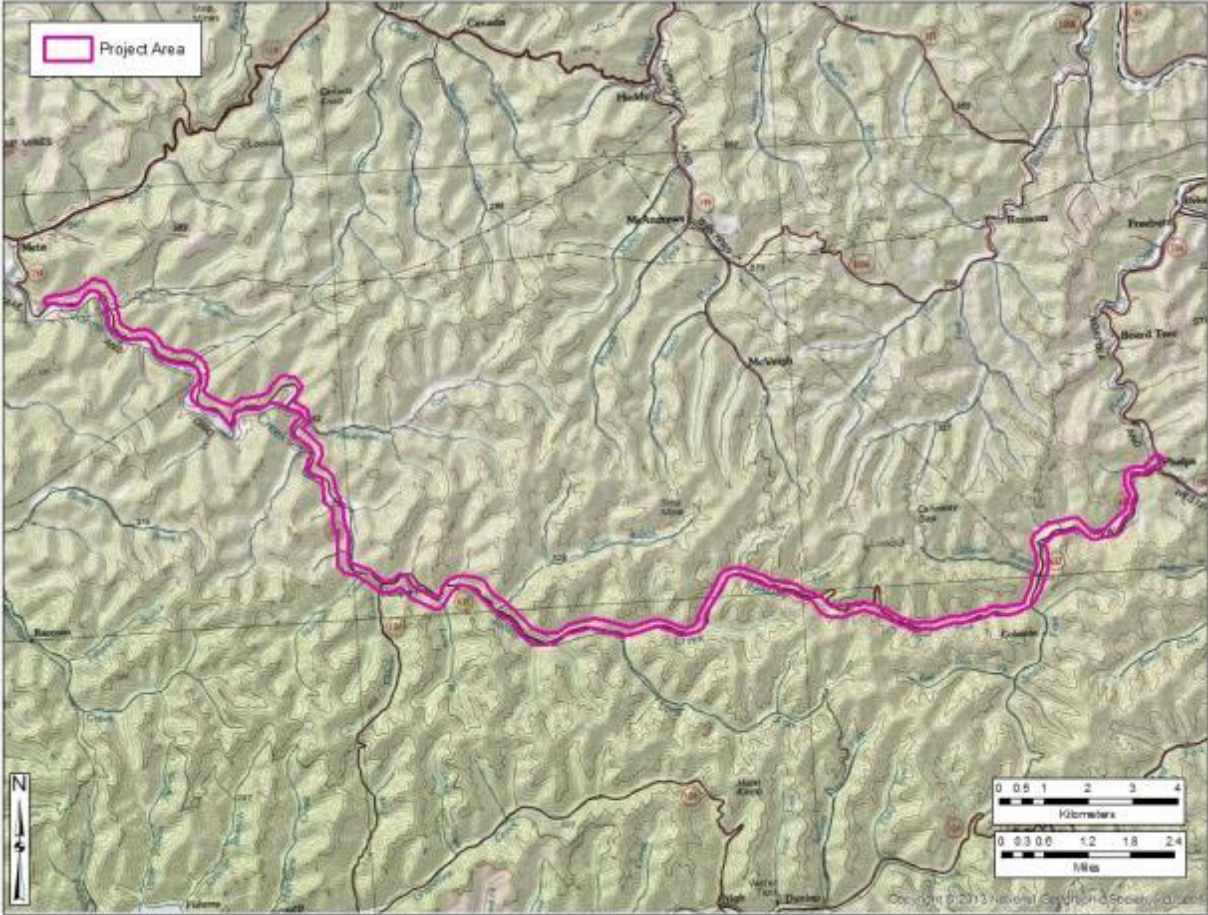


Figure 2. Route of KY 194/KY632 planned for improvements. USGS 7.5-minute topographic quadrangles Matewan Kentucky, Belfry Kentucky, Meta Kentucky, Jamboree Kentucky and Lick Creek Kentucky.

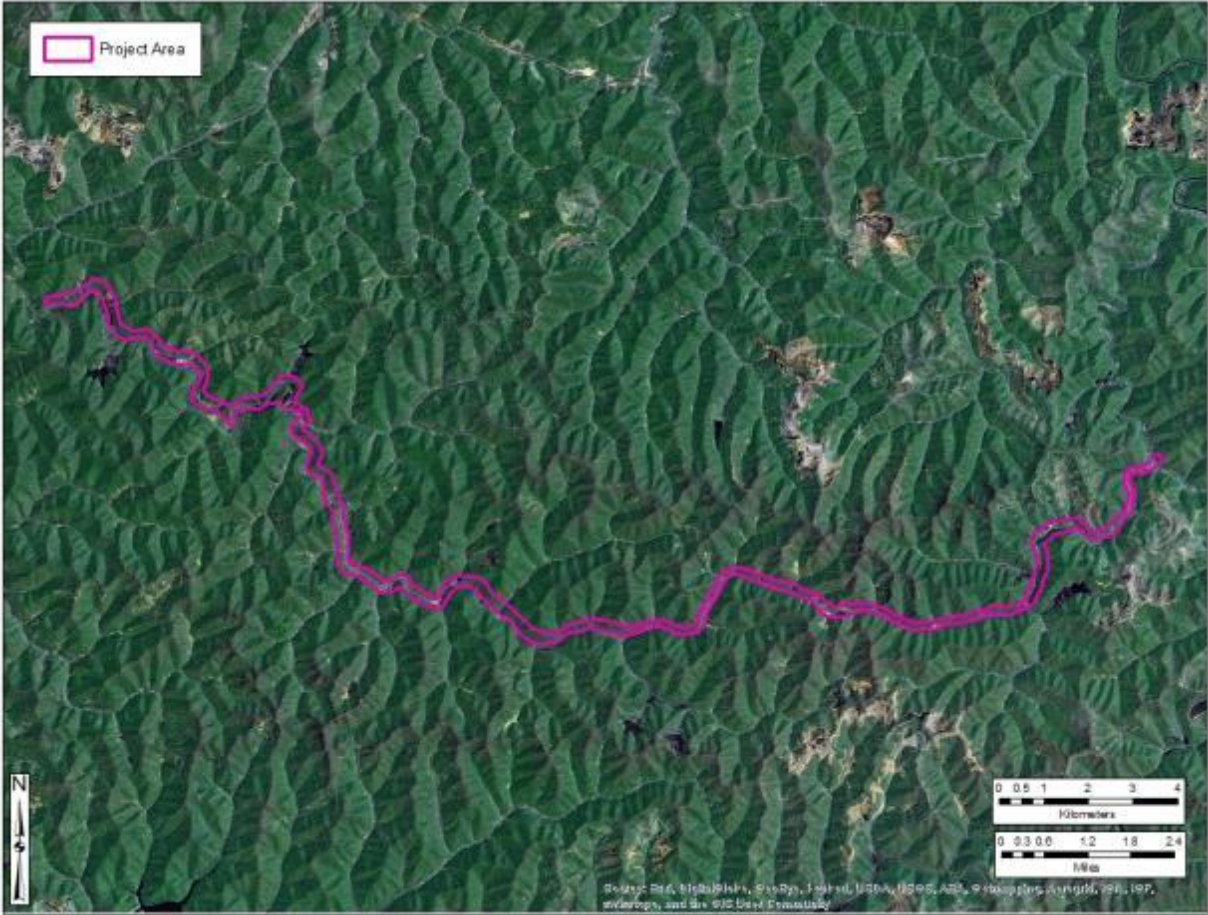


Figure 3. Aerial view of KY 194/KY632 corridor showing mountainous terrain.

2

RECORDS REVIEW

The results of a records check were received on December 11, 2013 (Reference No. FY14-1647) from the Kentucky Heritage Council/SHPO. The search revealed that there are no recorded historic resources within the project area. There is one resource listed in the National Register of Historic Places located west of the community of Jamboree, but this resource is outside the study area (**Figure 4**). The resource is the Graveyard of Nancy and Frank Phillips (PI-6).

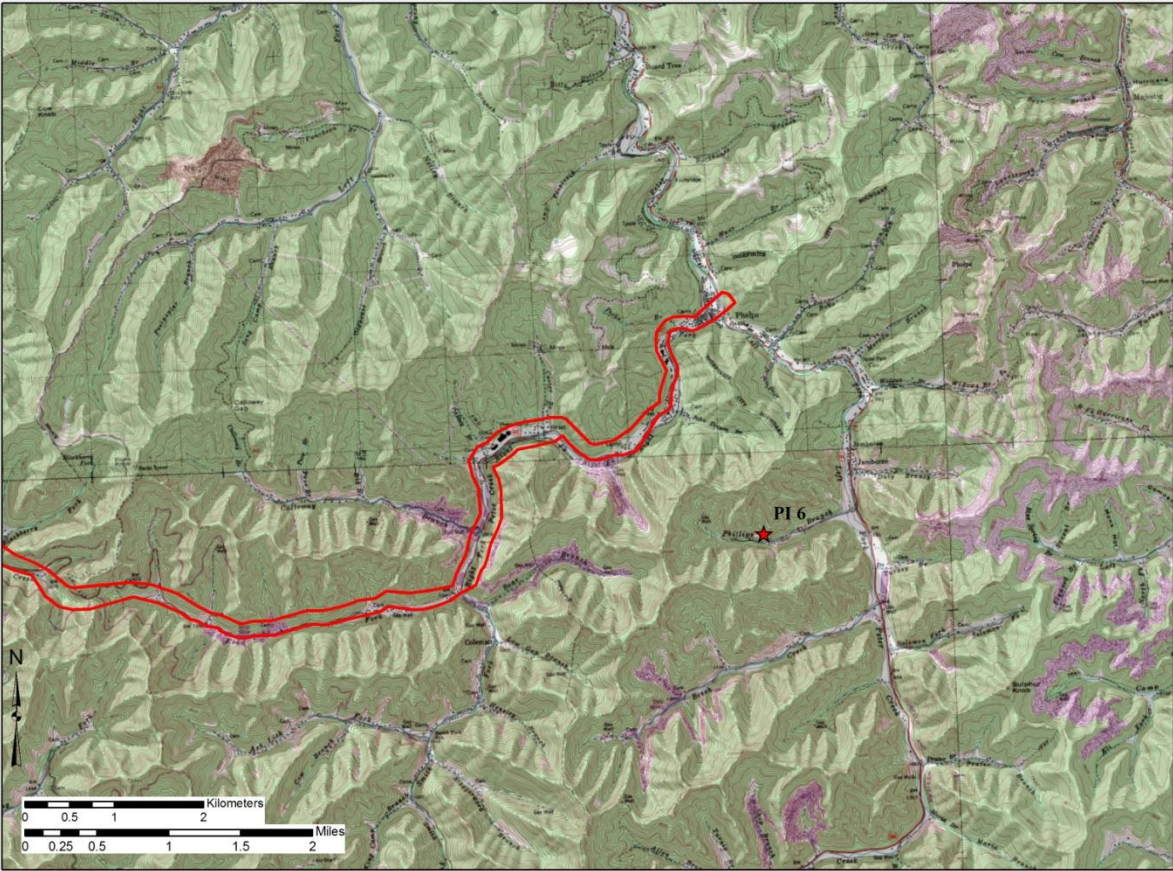


Figure 4. Location of resource listed in the National Register of Historic Places

There are five historic resources recorded in the Kentucky Historic Resources Inventory: PI-11 Old Log House; PI-15 Leslie Settlement; PI-16 Franklin King House; PI-17 Henry Helvey Cabin; and PI-18 Old Bond House. Three previously identified historic resources are located near the community of Kimper (**Figure 5**). Two are located near the communities of Zebulon and Meta (**Figure 6**). All of these are directly outside the project area.

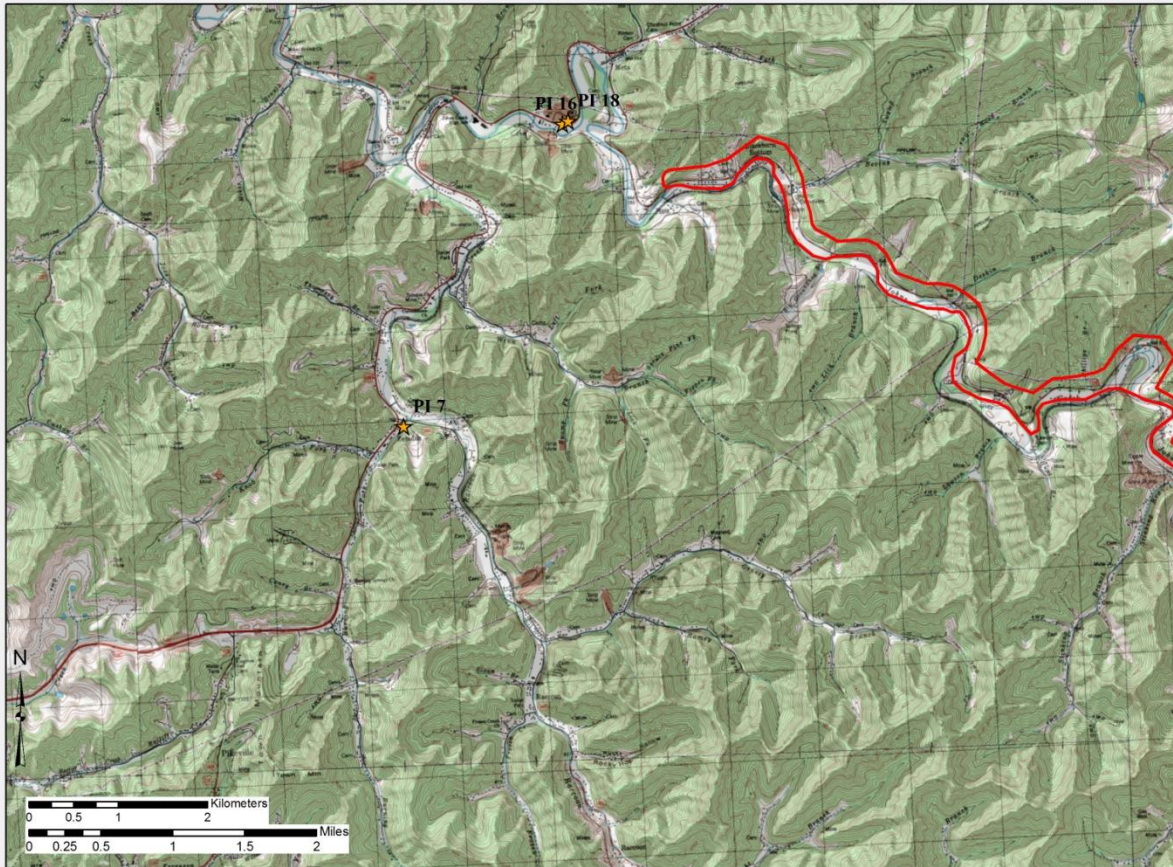


Figure 5. Historic resources recorded in the Kentucky Inventory near Kimper.

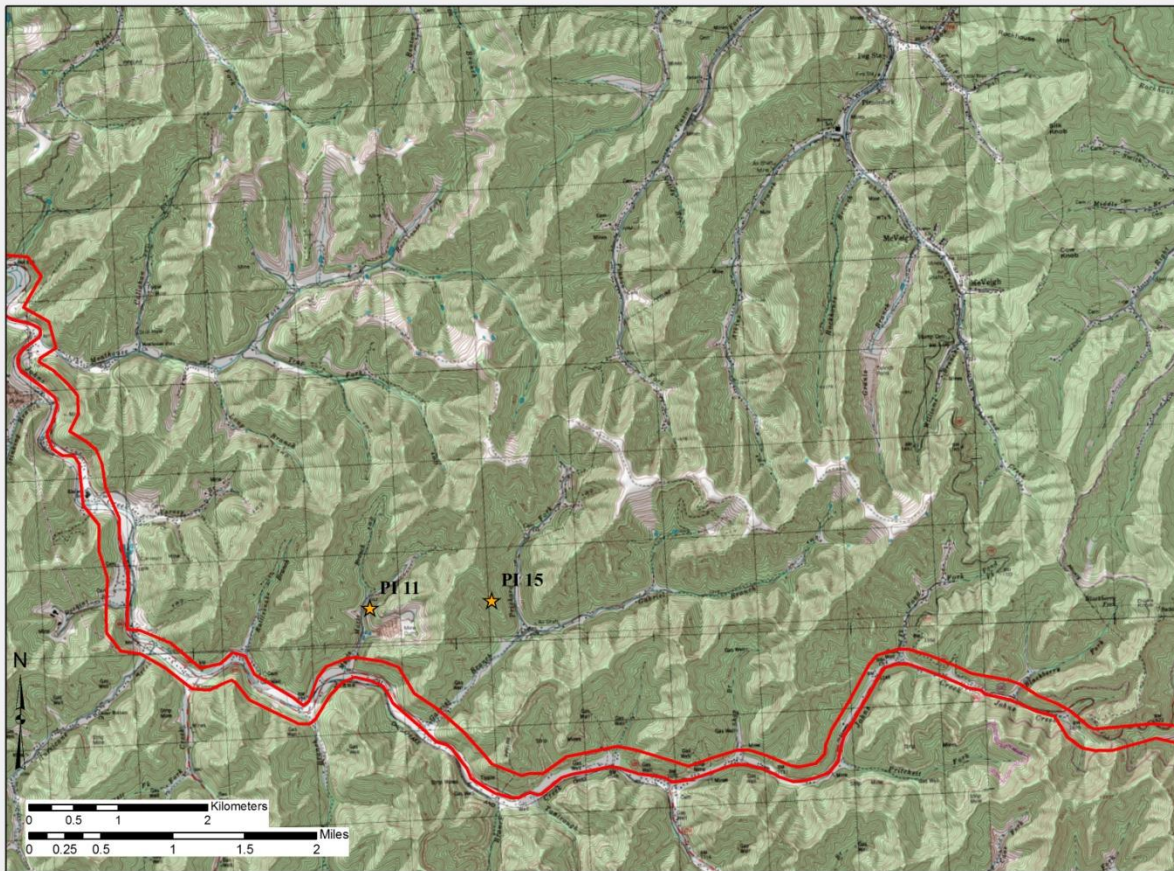


Figure 6. Historic resources recorded in the Kentucky Inventory near the communities of Meta and Zebulon.

3

BRIEF ENVIRONMENTAL and HISTORIC OVERVIEW

BRIEF ENVIRONMENTAL CONTEXT

Pike County is located in southeastern Kentucky and is bordered by Martin, Floyd, Knott, and Letcher Counties in Kentucky; by Pine Mountain on its far southeast boundary with Virginia; and by the Tug Fork of the Big Sandy River dividing the county from West Virginia on its northeast border. The county is characterized by mountainous terrain, fossil-fuel based energy production, and abundant waterways.

Situated within the Eastern Kentucky Cultural Landscape Region (**Figure 7**), as defined by the Kentucky Heritage Council, Pike County is considered part of the Central Appalachian Highlands topographically, described in the *Kentucky Encyclopedia* as, "a well-dissected plateau with alternating steep, narrow ridges and narrow stream-made valleys extending in all directions" (Rennick 1992:721). Two forks of the Big Sandy River drain all of Pike County. The Louisa drains the western half of the county, while the Tugg and its tributaries, which include Pond Creek and Peter Creek, drain the easternmost portion of Pike County (Burry and Amos 1998:2).

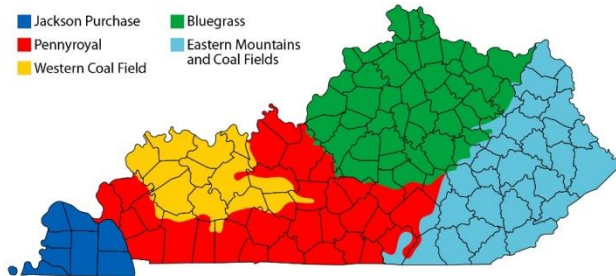


Figure 7. Kentucky's cultural landscape regions.

Pike County is known for its rich coal and natural gas deposits. It is among the most important producers of coal and natural gas in the Commonwealth of Kentucky, rating second in the state in coal production in 2013 (Wikipedia Contributors 2014). In spite of a declining coal-based economy, the county remains among the largest and wealthiest counties in the southeastern coalfields region.

The study area is located within the east-central portion of Pike County, near the borders with West Virginia and Virginia. USGS topographic maps represented in the study area are: Belfrey, Lick Creek, Jamboree, and Matewan. Small communities such as Kimber and Phelps are found on either end of the study area with Johns Creek and Peter Creek, running nearby the KY 194/KY 632 road corridor. Railroad lines are also present in the study area.

BRIEF HISTORIC CONTEXT, 1821-1960

Pike County was established in 1821 from a portion of Floyd County (Pinson 2014). The county was reportedly named for General Zebulon Pike, an explorer who claimed to have found Pike's Peak in Colorado. Early Pike County was characterized by a diversified economic base that included a mix of subsistence and cash-based agriculture, logging, and hunting. The first settlers of the area were largely from Virginia and North Carolina, descended from English, Scottish, Irish, French and German ancestry. (Deskins 1994:16).

The easternmost Tugg Fork region was initially explored by non-native peoples in the last quarter of the eighteenth century. "Due to its rough terrain, land along the Tugg Fork... was not permanently settled and developed until the 1820s" (Burry and Amos 1998:2). According to historian Chris Amos, the Tugg Valley basin was characterized by "the earliest settlers [who] claimed large land grants, first securing fertile bottom lands that also provided the best [water-based] transportation routes, and second well-timbered hills" (Burry and Amos 1998:5). Farmsteads were built in the bottom lands with domestic residences facing the Tugg Fork or one of its tributaries.

Among the initial Tugg Fork communities, Phelps was settled in the early 1820s by John Wolford, Sr., the patriarch of a large Peter Creek family (Rennick 1991:98). Located at the mouth of the left fork of Peter Creek at the junction of KY Routes 194 and 622, Phelps developed in the early nineteenth century due to its proximity to Peter Creek and limited overland transportation. The first active post office in Phelps was established in 1889 in a store owned by Jonathan Wolford, a grandson of the original settler (Rennick 1991:98).

Less is known of the initial origins of the community of Kimper. According to historian Rennick, this tiny community, situated on Johns Creek at the intersection of KY 194 and KY 632, established a post office in 1891. Johns Creek is an important tributary of the Levisa Fork of the Big Sandy River; another crucial early water transportation route (Rennick 1991:70).

Architecturally, early rural Pike County can be characterized by the morphology of mountain cabin types developed by the architectural historian Henry Glassie (Burry and Amos 1998:9). Most commonly, early settlers built single pen log houses which they appended with additions and stylistic updates throughout the nineteenth century. Early log houses are likely to have hewn logs and half-dovetail or V-notch corner notching systems (Macintire 1998:16-17). Typical floor plans include the hall-parlor plan and the single hall plan. Houses with sawn wood frame did not appear in the region until the advent of coal camp architecture (Burry and Amos 1998:9). Building in log continued well into the twentieth century in Appalachia (Macintire 1998)

Given a penchant for large families and reliance on agriculture, land holdings continued to be divided into the late nineteenth century across Pike County with third and fourth generation offspring living on the least desirable lands. As historian Amos puts it, "The cultural tradition of large families... and the practice of endowing sons and sometimes daughters with inherited lands, had a significant effect on late nineteenth century Appalachia. These traditions also burdened the natural ability of the valley to support its inhabitants" (Burry and Amos 1998:6). In spite of these practices, Eastern Kentuckians continued to practice a diversified economy with agriculture as a central focus in the late nineteenth century. Pike County followed these general Appalachian trends.

In the early twentieth century, development of railroad transport increased the population and modern economic advantages for Pike Countians. Railroad lines supplanted the steamboats and pushboats that traversed the area by the late nineteenth and early twentieth centuries

(Maddox and Maddox 1998:49). The Norfolk and Western Railroad extended into the Tugg Fork region of Pike County in the late nineteenth century (Deskins 1994:104). By the early twentieth century, the Chesapeake and Ohio Railroad line also traversed the area, aiding entrepreneurs in establishing coal towns and developing a mineral-based extraction industry on a national corporate scale (Maddox and Maddox 1998:49).

Towns established by coal companies or towns that expanded due to the coal industry were common in the Tugg and Levisa Fork regions of Pike County from approximately 1900 until the 1930s. This era is considered by many to be the golden age of coal in southern and eastern Kentucky (Spurlock and Doerrfeld 2004:27). In fact, Pike County counted 142 coal companies operating within its boundaries between 1907 and 1958 (The Kentucky Foundation 2014). This growth can be seen when looking at population statistics for Pike County which demonstrate an increase of 222 percent between 1900 and 1940 (Maddox and Maddox 1998:95). The Phelps Magisterial District counted a gain of 900 persons by 1930, due to increased economic activity in the area (Deskins 1994:130).

Neither the community of Kimper nor that of Phelps is included on the Kentucky Coal Energy and Education Project list of "coal towns," although it is likely - given the architecture seen during the windshield survey - that both communities benefitted from a coal-based economy. As demonstrated previously, the study area has a history that predates the coal boom. Examples of towns established by or solely due to the coal industry in Pike County include Hellier, Belfry, Stone, and Elkhorn City.

Community growth in the study area is likely associated with the advent of the coal industry and improved transit via rail lines. More research is necessary to demonstrate this connection. It is clear, however, that community institutions flourished in this era. An example of this is the Matthew T. Scott Academy in Phelps. The academy began in 1904 under the direction of Rev Alfred Erickson and was initially a boy's school until 1906 when girls were welcomed to attend (Pinson 1972:33); (Maddox and Maddox 1998:74). An associated 75-acre plot provided work and sustenance for the school. In 1914, this school was one of two high schools in Pike County (Deskins 1994:125). By the 1920s, the county school board took over management of the school due to increased enrollment demands (Maddox and Maddox 1998:74). In 1932, again responding to increased demand for facilities, Phelps High School was founded. In addition, the Peter Creek Presbyterian Church, built in native sandstone by Italian Stonemasons and local volunteers, was constructed in 1924 and continues to operate in the present day (Pinson 1972:33-34); (Richardson 2000). The town of Kimper established a post office initially in 1891 (Rennick 1991:70). This office was discontinued in 1896 and then re-opened in 1919 (Rennick 1991:70). In sum, it appears that community institutions began a period of growth coinciding with improved transportation systems and the coal-based economy.

The advent of the coal-based economy brought new ways of building into Pike County. Frame or box frame construction became more common beginning in the late nineteenth/early twentieth centuries (Burry and Amos 1998:11). In spite of this change, traditional floor plans, such as the central passage, double-pen, and single pen, were still favored when building in frame. Late Victorian detailing can be found on some of these houses, adorning the porch and eaves of housing in the region. By the early twentieth century, a common Appalachian house type was gaining in popularity across the region (Burry and Amos 1998:14-15). This house type is characterized by a front gable or clipped gable roof, a full-width front porch, and box or balloon framing method of construction. The house may be raised upon stilts, rest on stone piers, or have a continuous concrete block or stone foundation wall. It can feature details similar to the Craftsman style. Examples of this type can be seen in PI-60 and R17 and R33 in the undocumented resources section of this report. More research needs to be done to develop this

house type further. National architectural trends were also embraced in Pike County. The Craftsman bungalow is a building type seen throughout the study area and the region.

In Pike County, the first coal boom lasted until the late 1920s and declined with the advent of the Great Depression. According to historian Deskins, "the impact on the coal mining industry was immediate and devastating. Most mines shut down or worked a day or two a week to meet a specific order in hand" (Deskins 1994:147). The industry did not rebound until the late 1930s and began flourishing again during the Second World War. In the meantime, miners either migrated out of the area in search of work or returned to agricultural pursuits to feed their families. New Deal agencies had a great impact upon the eastern part of the state during the Great Depression, putting the unemployed back to work and building needed roads, schools, bridges, and other amenities for the region (Kennedy and Johnson 2005). A Civilian Conservation Corps (CCC) camp was located in the Peter Creek area "across the mountain from the left fork of Peter Creek" (Deskins 1994:149). This CCC camp, which included a few frame buildings, may have constructed a lookout tower on Dick's Knob near Johns Creek mountain (Deskins 1994:149). The CCC camp and lookout tower may be located within the study area. More research will be necessary to locate the camp site and the lookout tower.

Road transportation was always a challenge in the region due to the mountainous terrain. As historian Deskins puts it, "Within isolated sections, before the roads reached them, life was carried on in many ways similar to that lived by people of Pike County a hundred years previously. When the much anticipated and hoped for roads did come, with them came change, leading to the end of the pioneer/farmer subsistence lifestyle" (Deskins 1994:164). In the 1940s, Pike County established better road funding mechanisms and was able to construct evenly paved roads to high population areas, such as "Johns Creek to its head and over the mountain to Peter Creek and to the Tug Fork..." (Deskins 1994:164).

By the 1950s, the coal industry had largely mechanized many of the tasks formerly performed by workers and the industry, due to the practice of strip-mining and other factors. Another coal boom occurred in the early 1970s as a result of the OPEC oil crisis (Deskins :167 and 177). In spite of this economic cycle of boom and bust, previously established areas continued to see development, such as churches, schools, roads, and residences.

The Post-World War II era is characterized by national architectural trends with little known reference to earlier folk-building traditions. A common domestic architectural style and type noted in the study area and in the region is the ranch house. This type features a side gable or cross-gabled low-pitched roof, a single story building profile, moderate-to-wide roof overhangs, and brick veneer or frame as the main methods of construction. Commercial buildings of this era follow domestic patterns to a large extent and feature a low building profile and wide eave overhangs. Mid-twentieth century commercial buildings likely feature a flat or shed-roof system.

4

WINDSHIELD SURVEY

On December 13, a drive-through survey of the project corridor was made by CIA staff Tim Sullivan. The objective was to obtain a sense of the presence and number of buildings over 50 years of age along the corridor. Approximately 41 potential historic resources were identified, including five cemeteries. Some of the identified domestic residential sites may also have associated outbuildings, not included in this count.

As this was a windshield survey only, it is likely that additional buildings older than 50 years of age exist along this corridor. No research has yet been done to confirm the ages of other standing structures within the corridor. Rather, the effort was placed on identifying those buildings that appear on mapping between 1950 and 1955 (especially the 1954 topographic maps) that are extant along the roadway. An analysis of these historic resources was done by CIA architectural historian Rachel Kennedy in January 2014.

The project corridor was examined from west to east. Detailed maps that include all unrecorded potential historic resources (labeled numerically by “R”) as well as previously recorded resources are featured in **Figure 8** and **Figure 9**. Photographs of potential historic resources are identified and briefly discussed in the text below (**Figure 10** through **Figure 55**).

Given the rich historical context in this area since the inception of Pike County, as demonstrated in **Section 3**, it is likely that numerous historic resources would be discovered. Potential contexts include Community Development in Pike County from 1900-1960; Work of Italian Stone Masons in Pike County from 1900-1960; Agriculture in Pike County from 1821-1960; Common Architectural Styles and Types in Pike County 1890-1960; the Civilian Conservation Corps and the New Deal in Pike County, 1932-1943; and The Railroad in Pike County from 1880-1960.

As there are no previously recorded historic resources within the study area, the following text details the unrecorded resources identified upon initial survey. Additional survey will be necessary to determine the eligibility of many of these unrecorded resources. This future study should include individual eligibility as well as district-level eligibility for all unrecorded resources. The communities of Kimper and Phelps should be closely examined to determine whether either is eligible as an historic district.

Future research should also determine whether the unrecorded cemeteries meet Criterion Consideration C or D, utilizing guidance from National Register Bulletin 41, *Guidelines For Evaluating and Registering Cemeteries and Burial Places* and *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation*. (Potter and Boland 1992); (National Park Service 1997).

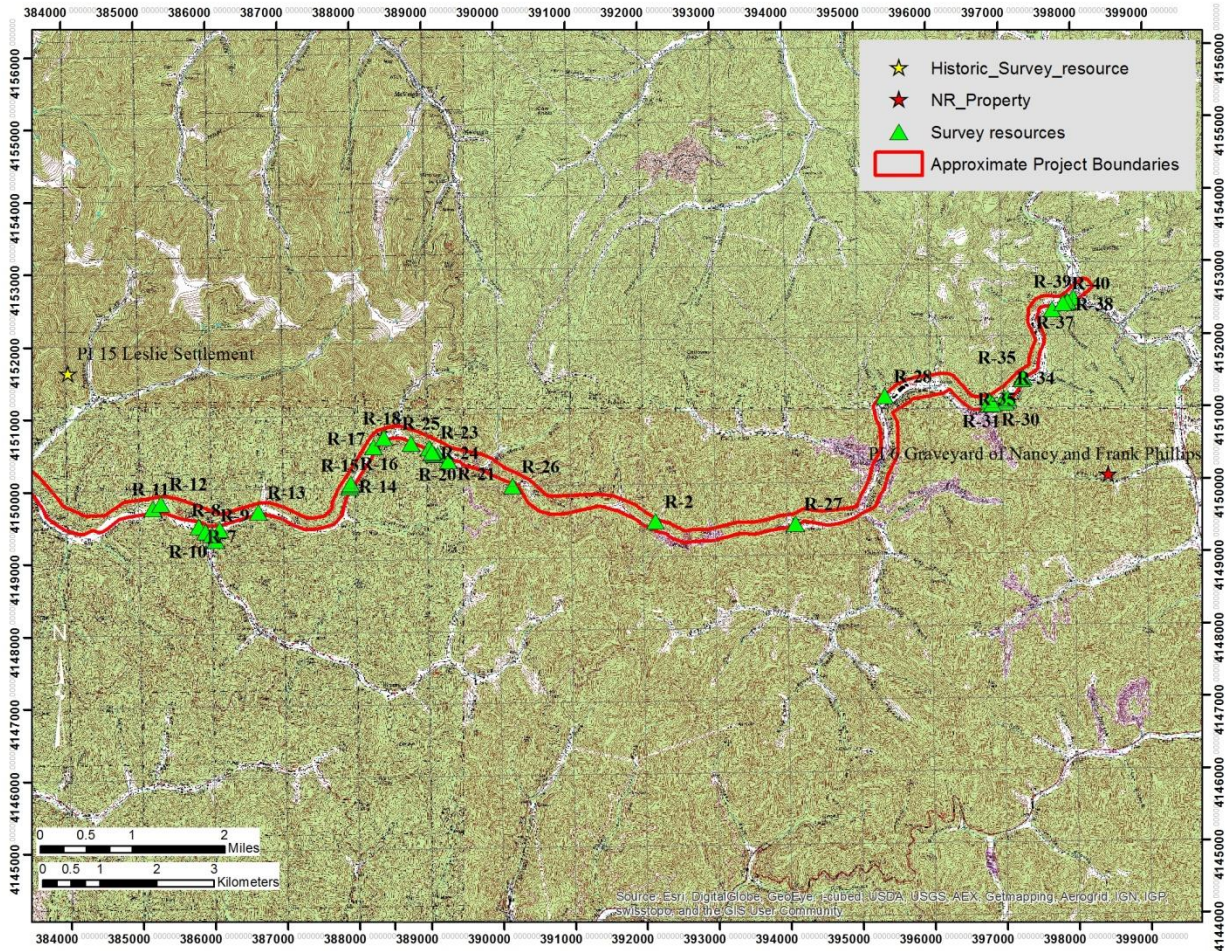


Figure 8: East portion of the study area.

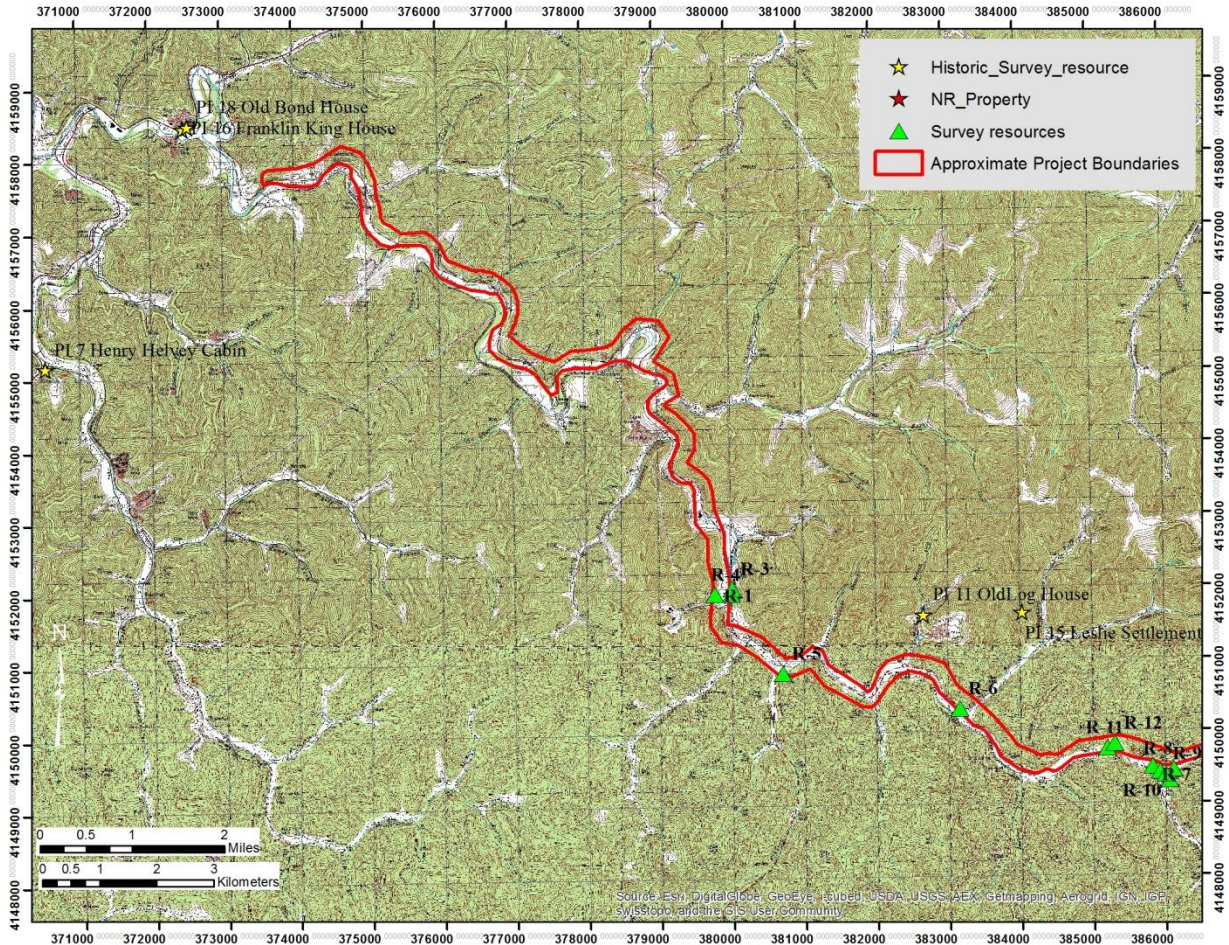


Figure 9: West portion of the study area.

UNRECORDED RESOURCES INVENTORY

Collins Deskin Cemetery (R1). This graveyard (Figure 10 and Figure 11) does not appear to be documented in the Kentucky Historical Society Cemetery database nor in the Find A Grave web-based database (Kentucky Historical Society 2014; Find A Grave 2014).



Figure 10. (R1) Collins Deskin Cemetery from KY 194, view to south.



Figure 11. (R1) Collins Deskin Cemetery from KY 194, view to south.

May Cemetery (R2). This graveyard (**Figure 12**) may be documented in the Find A Grave website. There is a *May Cemetery* in the Find A Grave web-based database. If this is the same graveyard, the database documents burials from the 1890s to present day. According to Find A Grave, family names documented in this cemetery include May, Phillips, Bowman, Coleman, and Justice.



Figure 12. (R2) May Cemetery, located around 7594 KY 194.

House (R3). This frame ranch house (**Figure 13**) appears to have been constructed circa 1950.



Figure 13. (R3) House located at about 8970 KY194.

Store/Service Station (R4). This concrete block store/service station with frame restroom addition appears to date from the mid-twentieth century circa 1940 (**Figure 14**).



Figure 14. (R4) Store/service station located about 8972 KY194.

House (R5). This house (**Figure 15**) appears to be a modern manufactured building constructed in the late twentieth century.



Figure 15. (R5) House, Intersection of KY 194 and KY 632.

Gabriel Valley Store (R6). This building appears to be a mid-twentieth century concrete block building with several additions and numerous alterations (**Figure 16** and **Figure 17**).



Figure 16. (R6) Gabriel Valley Food Store, 2040 KY 632.



Figure 17. (R6) Gabriel Valley Store, 2040 KY 632.

House (R7). This house is a frame bungalow dating from 1920-1940 (**Figure 18**). There are several frame outbuildings on the property (**Figure 19**).



Figure 18. (R7) House near intersection of KY 632 and Long Fork Road.



Figure 19. (R7) Side view of house near intersection of KY 632 and Long Fork Road.

House (R8). This frame gable-front house was constructed between 1920 and 1940. A modern one-story porch wraps what appears to be the original building (**Figure 20**).



Figure 20. (R8) House on corner of 1758 and KY 632.

Little Virgil Church and Cemetery (R9). This church building was constructed between 1940 and 1950 in the community of Kimper (**Figure 21**). The associated cemetery contains graves that appear to pre-date the church. The church graveyard (**Figure 22**) does not appear to be documented in the Kentucky Historical Society Cemetery database nor in the Find A Grave web-based database.



Figure 21. (R9) Little Virgil Church on 1758 near KY 632.



Figure 22. (R9) Little Virgil Church with associated cemetery.

Kimper Church of God (R10). This church building appears to have been constructed in the early-to-mid twentieth century. A closer examination of this building will be necessary to determine more details (**Figure 23**).



Figure 23. (R10) Kimper Church of God, near intersection of 1758 and KY 632.

Kimper Fire and Rescue (R11). This building is a late 1990s/early 2000s concrete block building (Figure 24).



Figure 24. (R11) Kimper Fire and Rescue located at about 3822 KY 632.

House (R12). This two-story frame house features a double-height front porch with decorative millwork columns and railing (**Figure 25**). It appears to have been constructed in the late nineteenth or early twentieth century. The house may be individually eligible for the National Register under Criterion C as an architectural type common to rural Pike County. It is very similar to the Lowe House (PI-41).



Figure 25. (R12) House 3846 KY 632, Kimber Kentucky.

Service Station (R13). This concrete block building appears to be an Oblong Box type of service station common in the 1930s and 1940s, as defined by the Kentucky Heritage Council. It has stylistic elements that imply speed, modernity, and progress (Johnson et al. 2004) (**Figure 26**).



Figure 26. (R13) Service Station located at about 4548 KY 632.

Houses near Kimper (R14). These residences (**Figure 27**) appear to date from the early-to-mid twentieth century. A common Appalachian house type is the gable-front one-story frame house with full-width front porch (Burry and Amos 1998:14-15). An example of this is PI-60, the Ball House. Several of these houses appear to be of that type.



Figure 27. (R14) Houses located around 5462 KY 632.

House (R15). This dwelling appears to be a modern manufactured house built in the late twentieth century (**Figure 28**).



Figure 28. (R15) Houses located around 5466 KY 632.

House (R16). This house may have been built in the early-to-mid twentieth century but has had numerous alterations (**Figure 29**).



Figure 29. (R16) House located at 5464 KY 632.

House (R17). This two-story frame house appears to have been built between the 1920s and 1940s (**Figure 30**). It is a type common to the Appalachian region. (Burry and Amos 1998:14-15)



Figure 30. (R17) House located about 5794 KY 632.

Old Path Bible Church (R18). This frame church (**Figure 31**) was constructed between 1930 and 1950.



Figure 31. (R18) Old Path Bible Church, 6030 KY 632.

House (R19). This gable-front frame house was constructed between 1920 and 1940. It features a prominent addition to its front that may have originally been an open porch (**Figure 32**).



Figure 32. (R19) House about 6741 KY 632.

Outbuilding (R20). This frame structure is of unknown use (**Figure 33**).



Figure 33. (R20) Outbuilding, about 6741 KY 632.

House (R21). This frame bungalow features a recently enclosed front porch. The house was likely constructed between 1920 and 1940 (**Figure 34**).



Figure 34. (R21) House 6623 KY 632.

Outbuildings (R22). Little information is currently available regarding these frame outbuildings (in background) (**Figure 35**).



Figure 35. (R22) Outbuildings near 6503 KY 632.

Garage (R23). This frame structure appears to be a garage/storage structure (**Figure 36**). Its date of construction is unclear.



Figure 36. (R23) Garage near 6502 KY 632.

Structure (R24). This frame structure appears to be a prefabricated structure, recently constructed or an older structure very heavily altered (**Figure 37**).



Figure 37. (R24) Structure near 6541 KY 632.

Outbuilding (R25). This frame outbuilding appears to be a multi-purpose structure, used as a corn crib with a side drive for equipment storage (**Figure 38**). A hatch provides access to the loft in order to load grains and/or corn. The structure may date from the 1920s to the 1950s.



Figure 38. (R25) Outbuilding 6287 KY 632.

House (R26). This building may have been built between the 1920s and 1940s. It may have been built for commercial or institutional purposes originally. It has received numerous modern updates that may impact its integrity (**Figure 39**).



Figure 39. (R26) House 7455 KY 632 KY 632.

House (R27). This house appears to be a manufactured house with a gable-front porch (**Figure 40**). It may have been placed on this site between 1960 and 1970.



Figure 40. (R27) House located about 7828 KY 632.

Dotson Cemetery (R28). There is a Dotson Cemetery documented in this approximate location on the Find-A-Grave website. More research is necessary to determine if this is the same Dotson Cemetery. According to this website, the earliest burials in this cemetery are late nineteenth and early twentieth centuries and approximately 177 persons are laid to rest there (**Figure 41**). Family names included in the cemetery are Dotson, Smith, and Coleman.



Figure 41. (R28) Dotson Cemetery off Abbey Branch Road and KY 632.

Outbuilding (R29). This board and batten frame outbuilding appears to be newly constructed. At the very least, the structure has a new stone foundation (**Figure 42**). The outbuilding may be used for equipment storage.



Figure 42. (R29) Outbuilding 12442 KY 632.

House (R30). This brick-veneer house is a ranch style dwelling with attached one-bay garage, constructed between 1960 and 1975 (**Figure 43**).



Figure 43. (R30) House at 12442 KY 632.

Cemetery (R31). No information was available regarding this cemetery (**Figure 44**).



Figure 44. (R31) Cemetery at 12442 KY 632.

Building (R32). Although currently a residence, this concrete block building may have originally served a commercial purpose. This flat-roofed building dates from the 1950-1960 time period and features modernist details and form (**Figure 45**).



Figure 45. (R32) Building 12444 KY 632.

House (R33). This clipped gable front frame house with full-width porch (**Figure 46**) is a common architectural type in Appalachia during the early twentieth century (Burry and Amos 1998:14-15).



Figure 46. (R33) House located at about 12750 KY632.

House and Outbuildings (R34). This frame house was likely constructed in the early twentieth century. A large concrete block addition has been appended to its side. There are several outbuildings on this property (**Figure 47**).



Figure 47. (R34) House and Outbuildings, 12578 KY 632.

House (R35). This two-story frame house rests on a well-dressed stone foundation. A portion of the original foundation wall, directly facing the road, has been replaced by what appears to be prefabricated concrete block veneer. This building was likely constructed in the early twentieth century. The foundation could have been associated with the work of Italian stone masons (**Figure 48** and **Figure 49**).



Figure 48. (R35) House near 12808 KY 632.



Figure 49. (R35) Front of house near 12808 KY 632.

Outbuilding (R36). This structure was likely built as a garage in the early-to-mid-twentieth century (**Figure 50**).



Figure 50. (R36) Outbuilding at about 13633 KY 632.

House (R37). This house may be a manufactured building of recent origins (**Figure 51**).



Figure 51. (R37) House 13770 KY 632.

Commercial Garage (R38). This concrete block building was most likely a commercial garage built between 1930 and 1950 to service automobiles (**Figure 52**).



Figure 52. (R38) Commercial Garage located at approximately 13772 KY 632.

House (R39). This house is a one-story ranch style dwelling constructed between 1960 and 1975 (**Figure 53**).



Figure 53. (R39) House at 13774 KY 632.

Apartment Building (R40). This apartment building features a two-story exterior entry porch. The building may have been a motel constructed in the 1960s-1980s before it was converted to apartment use in recent times (**Figure 54**).



Figure 54. (R40) Apartment building at 5th Street and KY 632, Phelps Kentucky.

The Hornet's Nest Restaurant (R41). This commercial building is a two-story brick veneer and frame building (**Figure 55**). The building was likely constructed between 1960 and 1980.



Figure 55. (R41) The Hornets Nest Restaurant, Ash Street and KY 632, Phelps Kentucky.

5

SUMMARY and RECOMMENDATIONS

It is recommended that more intensive survey work be done in this area to determine eligibility for the National Register of Historic Places at the individual and district levels. The previous windshield survey, along with the brief historic context developed in **Section 3**, demonstrate the presence of potential historic resources and the probability of discovering additional historic resources in the study area.

As discussed in the historic context section of this report, the study area was among the first settled in Pike County and has experienced continued development to present day. Historic resources may fit into one of the following contexts including Community Development in Pike County from 1900-1960; Work of Italian Stone Masons in Pike County from 1900-1960; Agriculture in Pike County from 1821-1960; Common Architectural Styles and Types in Pike County, 1821-1960; the Civilian Conservation Corps and the New Deal in Pike County, 1932-1943; and The Railroad in Pike County from 1880-1960.

Future research should also determine whether the unrecorded cemeteries meet Criterion Consideration C or D, utilizing guidance from National Register Bulletin 41, *Guidelines For Evaluating and Registering Cemeteries and Burial Places* and National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*.

6

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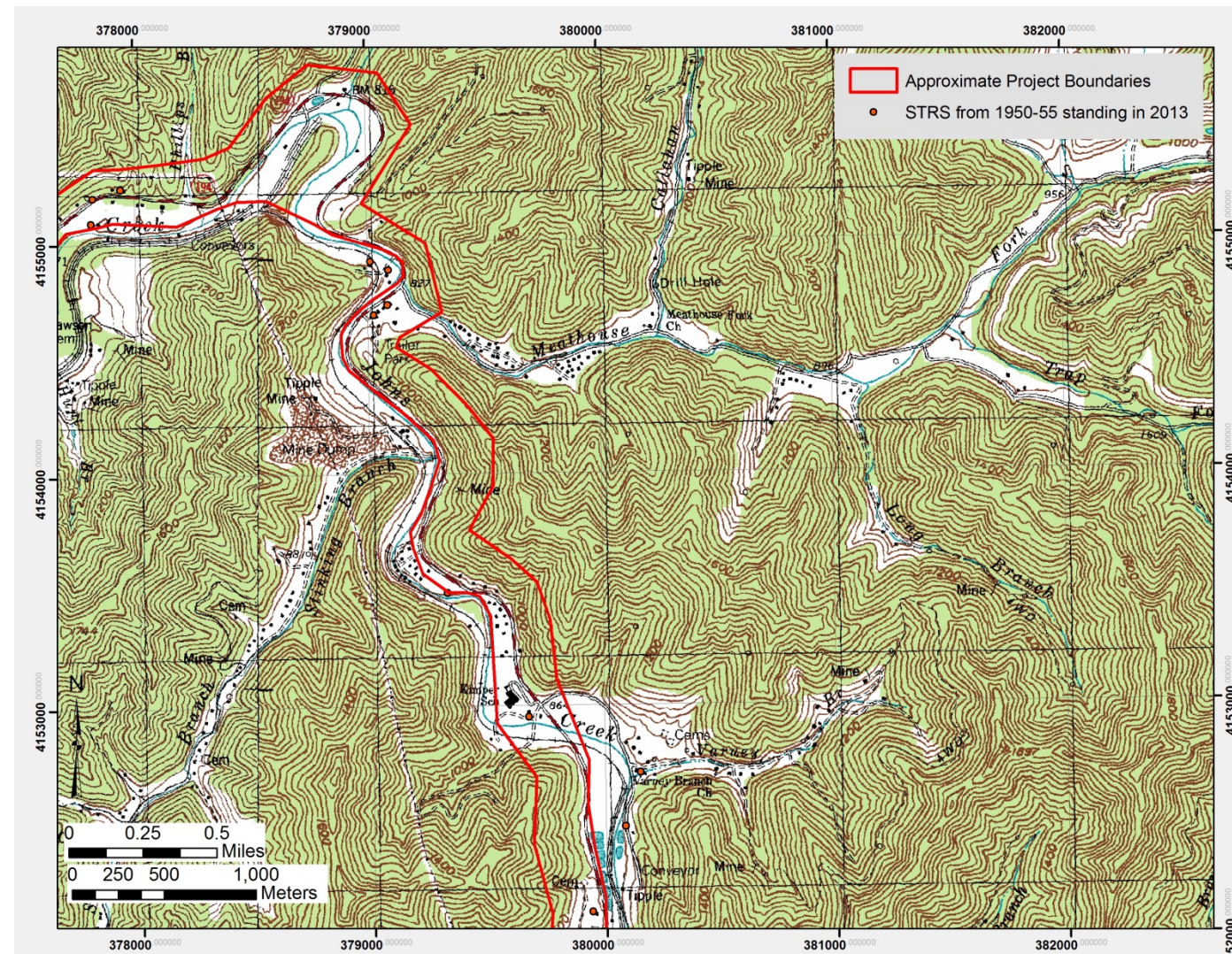
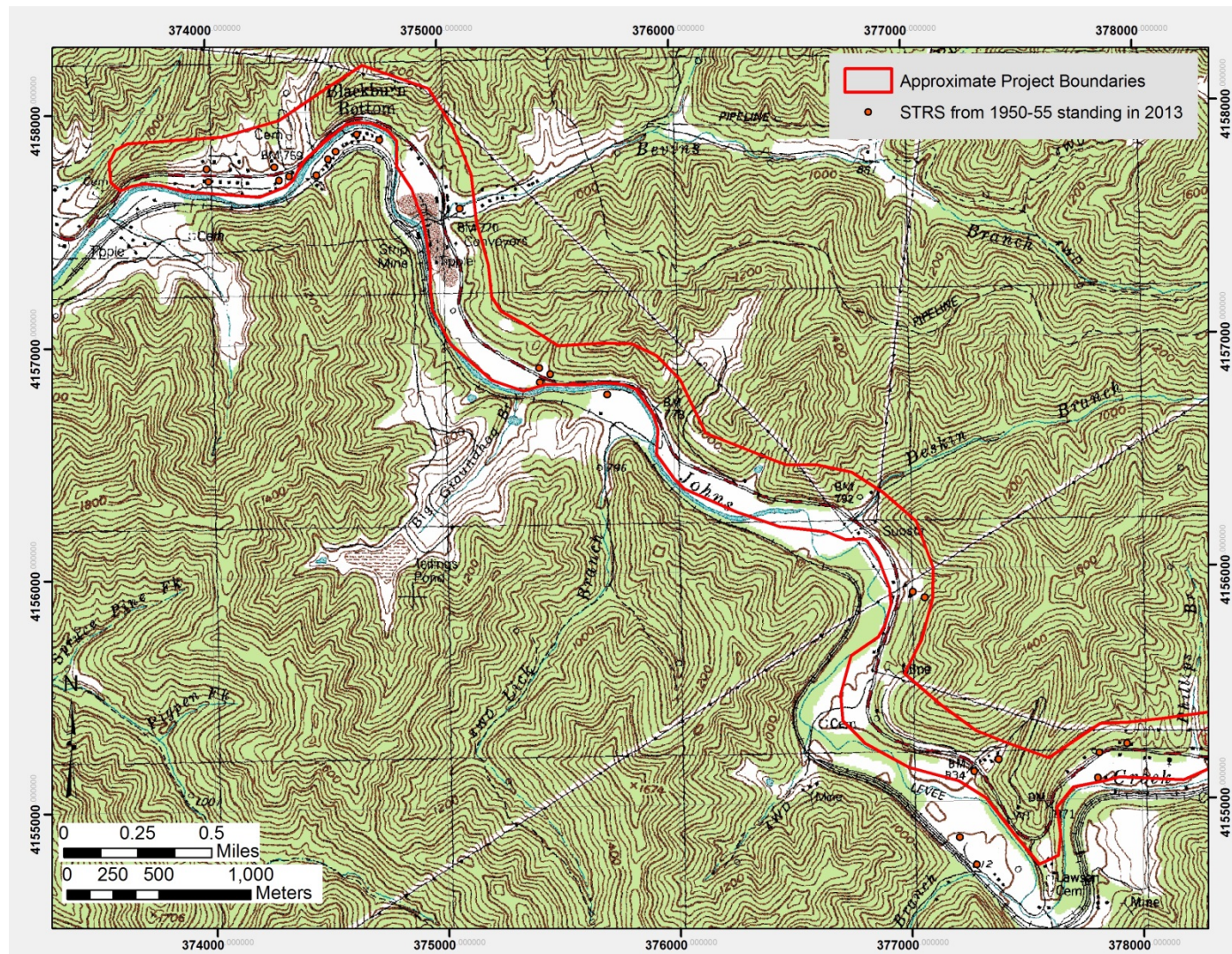
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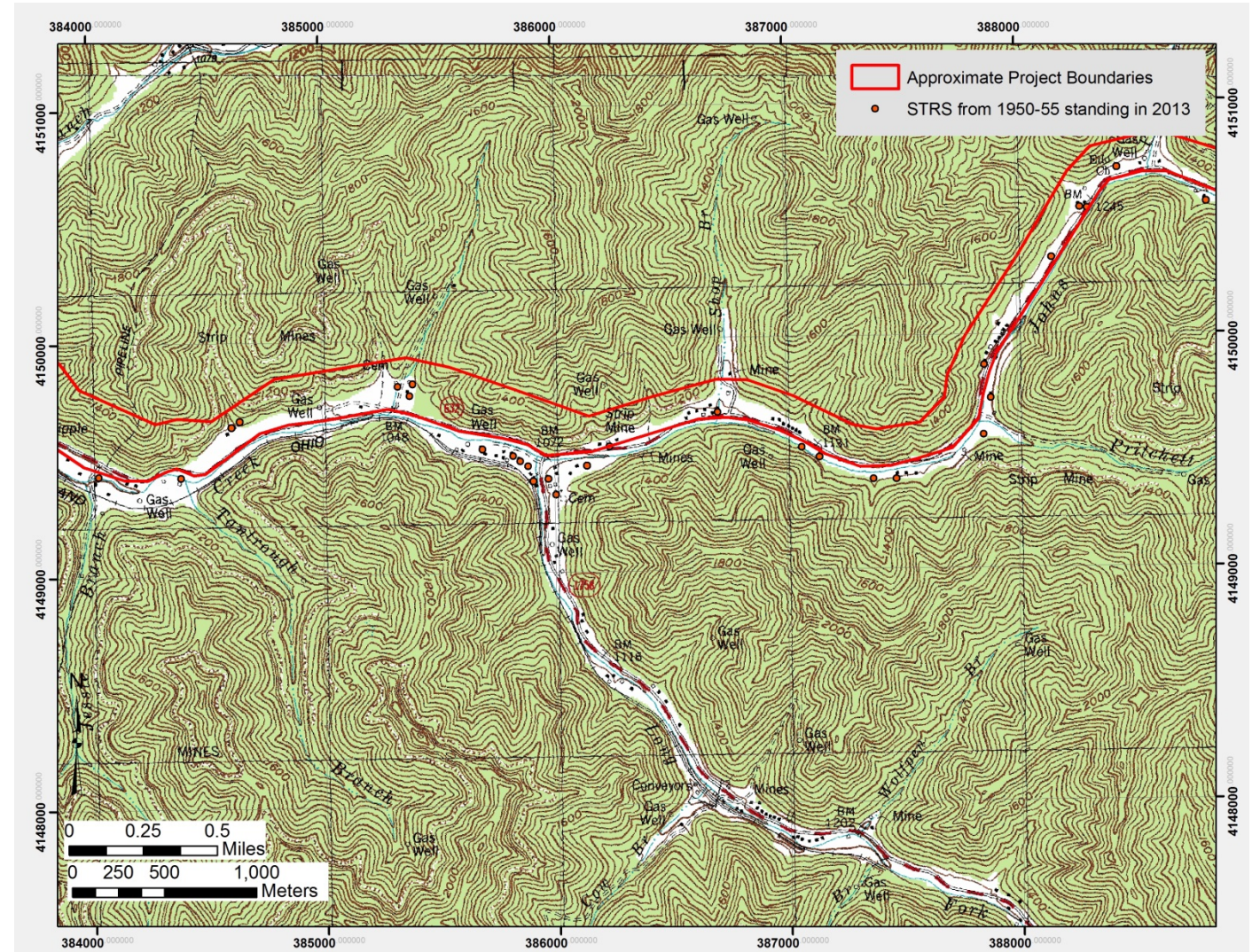
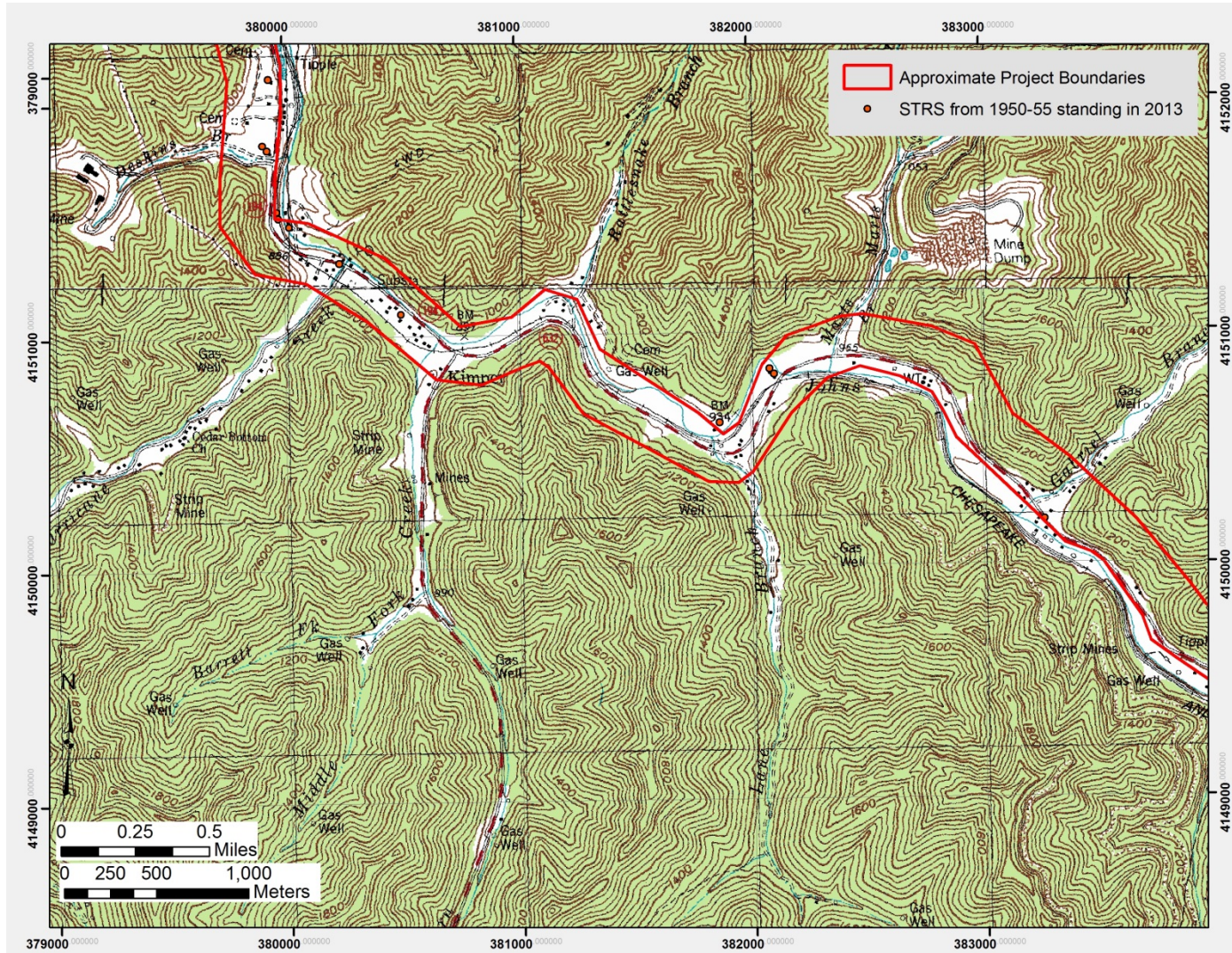
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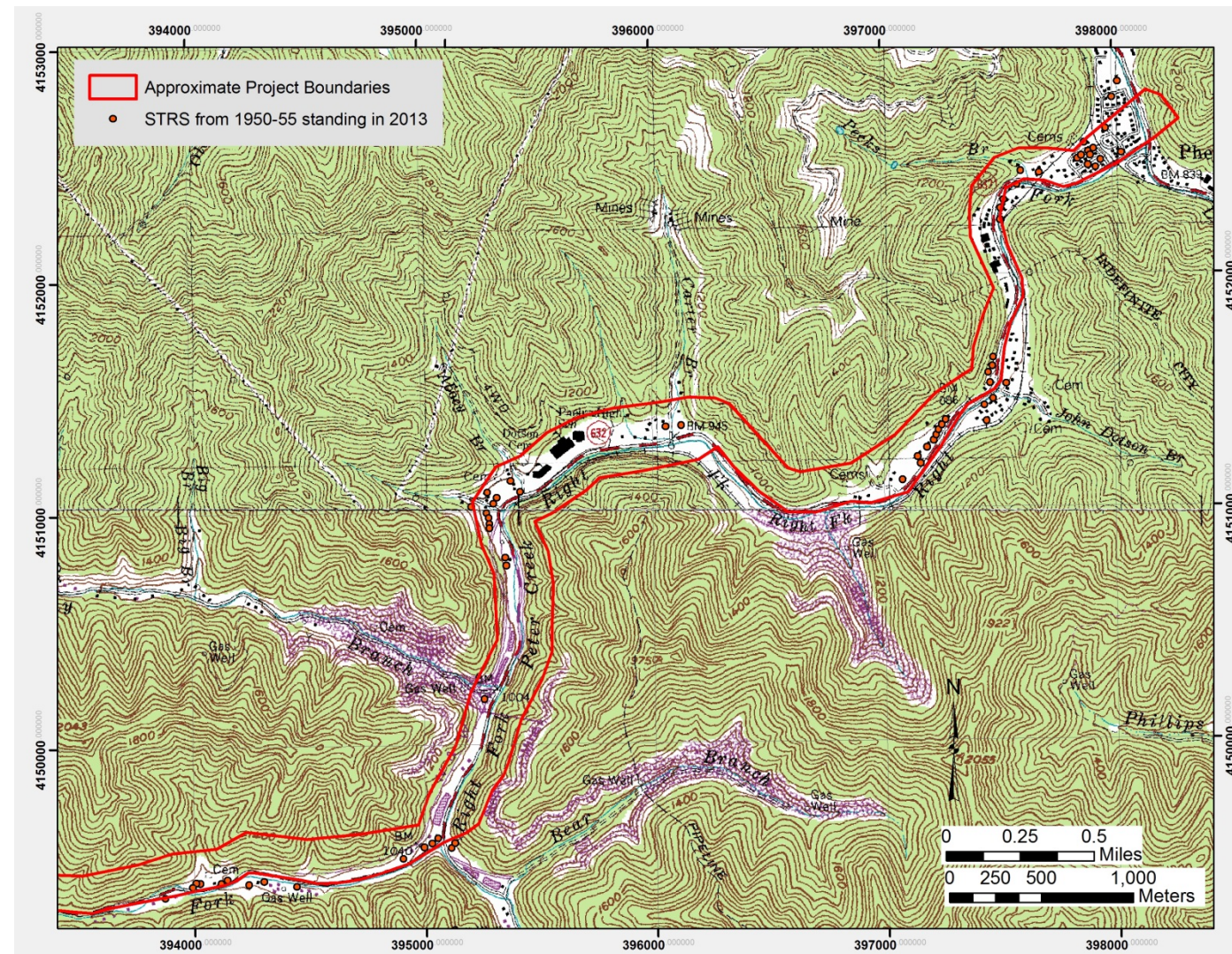
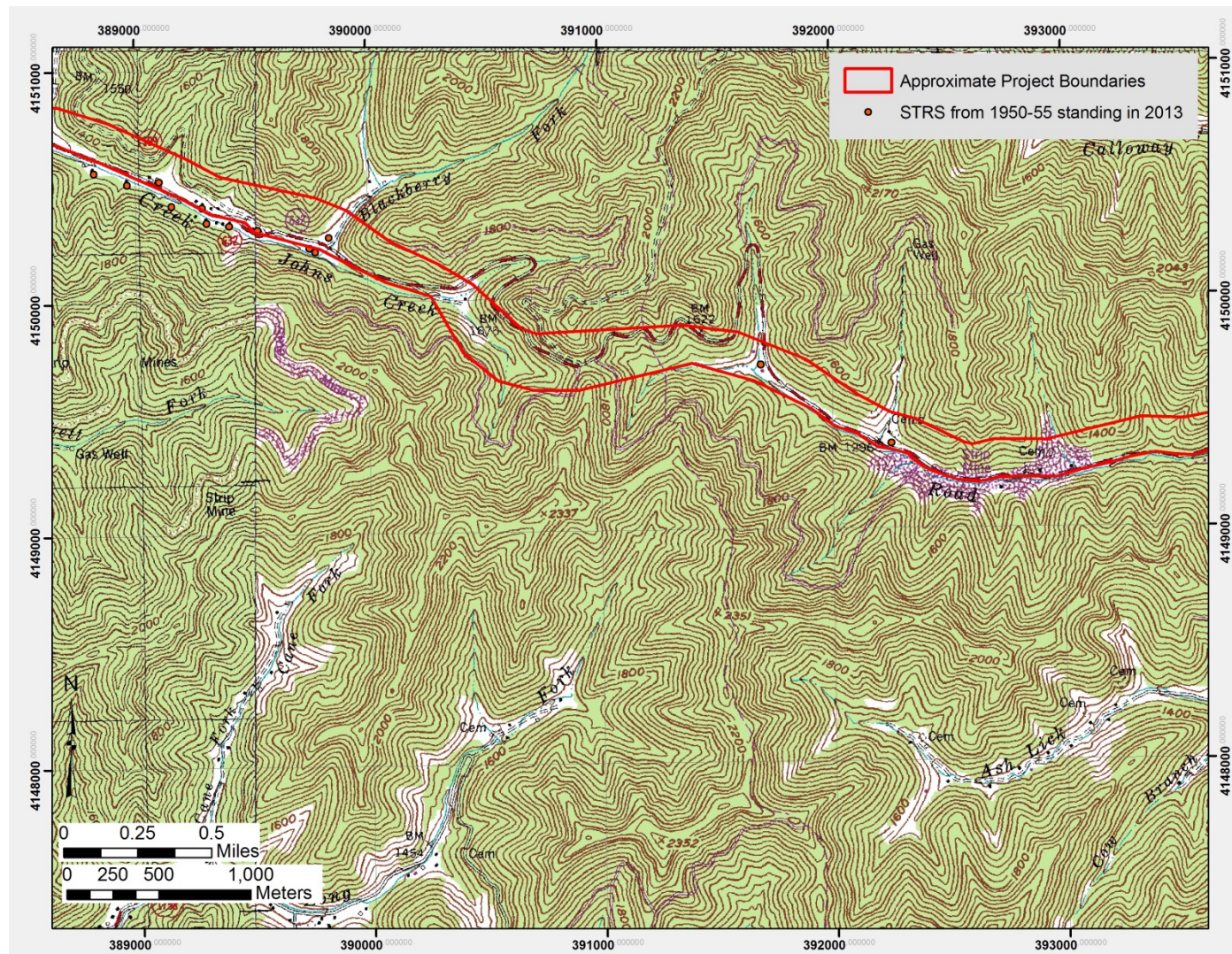
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KY 194/KY 632 Environmental Justice Impact Study

A study of the potential impact of the KY 194/KY 632 Improvement Project on traditionally underserved population groups within the proposed project corridor.



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1.0 INTRODUCTION

This report presents an overview of selected socioeconomic characteristics of the area potentially impacted by the proposed reconstruction of KY 194/KY 632 (mile points 18.0 to 26.670 on KY 194 and 0.0 to 14.019 on KY 632) in Pike County, as illustrated in *Appendix 1*. The purpose of the study is to identify the potential for any disproportionately high or adverse impact on any minority and/or low-income population within the proposed planning area in order to ensure the fair treatment of all people regardless of race, color, national origin, disability, or income. Demographic information is provided for all minority; low-income; elderly; and disabled populations living within the project area. The data used in this report has been compiled from various sources, including the U.S. Census Bureau *Census 2010*; *American Community Survey 5-Year Estimates*; KYTC Division of Planning; the Kentucky State Data Center; and local community members and field observations of the proposed project area. The information and results are intended to assist the Kentucky Transportation Cabinet in making informed, impartial and prudent decisions for this project area, especially in regard to the requirements of *Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, which states in part: “...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its program, policies, and activities on minority populations and low-income populations...”

2.0 WHAT IS ENVIRONMENTAL JUSTICE

The U.S. EPA Office of Environmental Justice (EJ) defines EJ as:

“The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socio-economic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal and commerce operations of the execution of federal, state, local and tribal programs and policies.”

A disproportionately high and adverse effect on a minority or low-income population means any adverse effect that:

1. Is predominately borne by a minority population and/or low-income population; or

2. Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or no-low-income population.

2.1 DEFINITIONS

USDOT Order 5610.2 on EJ, issued in the April 15, 1997 *Federal Register* defines what constitutes low-income and minority populations.

- **Low-Income** is defined as a person whose median household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines. A **Low-Income Population** is “any readily identifiable group of low-income persons who live in geographic proximity, and if circumstances warrant, geographically disbursed/transient persons...”
- **Minority** is defined as a person who is: (1) Black (a person having origins in any black racial groups of Africa); (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); (3) Asian-American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or (4) American Indian and Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition). A **Minority Population** is “any readily identifiable group of minority persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons...”

Executive Order 12898 and *USDOT Order 5610.2* do not address consideration of elderly or disabled populations. However, the USDOT encourages the early examination of potential populations of the elderly, children, disabled, and other populations protected by Title VI of the *Civil Rights Act of 1964* and related nondiscrimination statutes. Consequently, this study includes statistics for persons age 65 and older and disabled persons who reside within the project and comparison areas.

3.0 METHODOLOGY

For this study, data was collected by using the method outlined by the KYTC document “Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies” (*Appendix 2*).

The methodologies used in this planning document are appropriate for identifying possible areas of concern in small urban areas and potential project corridors. However, during future phases of project development a more detailed and robust analysis would be required for the National Environmental Policy Act (NEPA) documentation when assessing the potential for adverse and disproportionate impacts to low-income and minority populations.

The primary sources of data were the U.S. Census Bureau *Census 2010; ACS 5-Year Estimates* (2008-2012), KYTC Division of Planning, Kentucky State Data Center, and field observations of the project area. Statistics were compiled that present a detailed analysis of the community conditions for the KY 194/KY 632 project corridors.

4.0 CENSUS DATA ANALYSIS

The U.S Census Bureau defines geographical units as:

- **Census Tract (CT)** – “A small, relatively permanent statistical subdivision of a county or statistically equivalent entity delineated for data presentation purposes by a local group of census data users or the geographic staff of a regional census center in accordance with Census Bureau guidelines. CTs generally contain between 1,000 and 8,000 people. CT boundaries are delineated with the intention of being stable over many decades, so they generally follow relatively permanent visible features. They may also follow governmental unit boundaries and other invisible features in some instances; the boundary of a state or county is always a census tract boundary.”

The project and comparison area analysis includes the percentages for minorities, low-income, elderly, and disabled; and population levels for the affected census tracts versus Pike County.

5.0 STUDY AREA CENSUS DATA ANALYSIS

This Environmental Justice Report is to be used as a component of a Planning Study for the proposed improvements of KY 194, from the junction of KY 194 and US 119 (MP 18.0) to the junction of KY 194 and KY 632 (MP 26.670); and KY 632, from the junction of KY 194 and KY 632 (MP 0.0) to the junction of KY 632 and KY 194 (MP 14.019), and includes a ½ - mile buffer zone along the project corridor. This study is intended to help define the project location and populations potentially impacted by the project, and to better meet federal requirements regarding consideration of environmental issues as defined in the National Environmental Policy Act (NEPA).

The 2010 Census identifies Census Tracts in this study area. The tracts are listed below and also illustrated in *Appendix 3*:

Census Tracts 9312, 92317, 9318

These CTs were analyzed for underserved and disadvantaged populations within those CTs, and those results were compared to those populations with Pike County as a whole, using Pike County's percentages of these populations as a threshold for comparison.

Threshold Methodology

For purpose of analysis the percentage of each identified population within the Census Tracts is compared to the percentage of the same population within the county. Therefore the percentage of any identified population within the county is considered the **Base** population. Any Census Tract populations that are *up to 25% lower* than the county base are considered **Just Lower** than the base. Any populations that are *more than 25% lower* than the base are considered **Significantly Lower**. Conversely, populations *up to 25% higher* than the base are considered Just Higher, while populations that *are more than 25% higher* are considered **Significantly Higher**. For a detailed threshold table and methodology see *Appendix 4*.

Tables Used

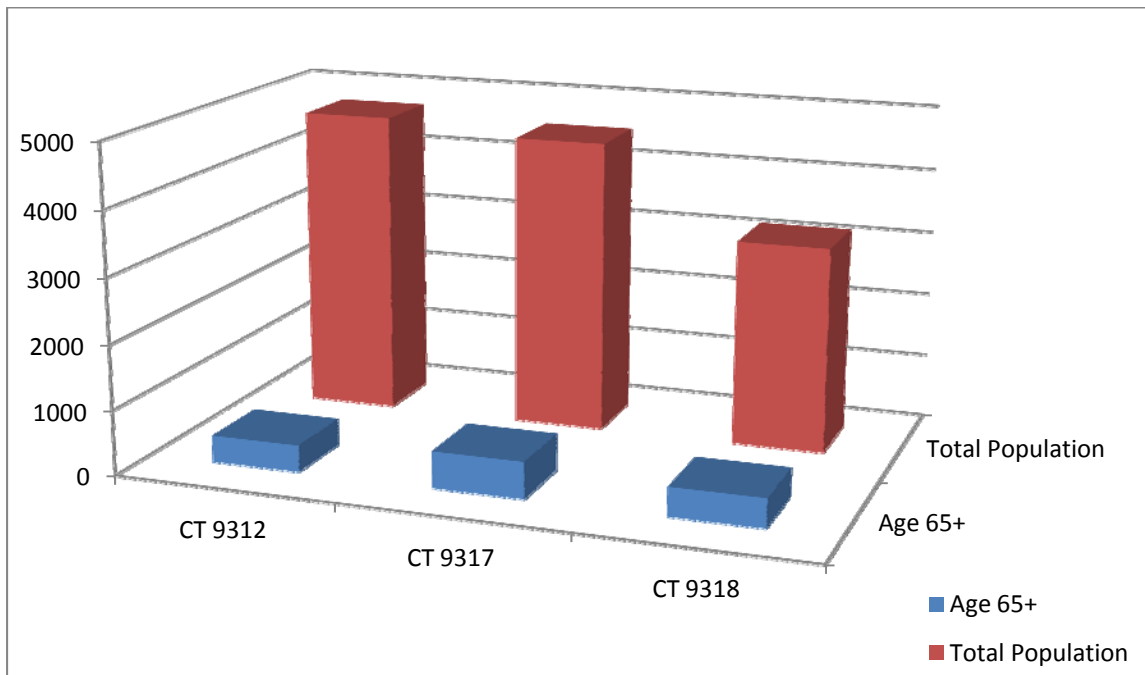
The census tables used to analyze and compare this data are:

- Table S0101 – Population by Age
- Table 18101 – Population by Disability

- Table DP03 – Income Level
- Table 03002 – Population by Race

5.1 STUDY AREA CENSUS DATA ANALYSIS/POPULATION BY AGE GROUP

The defined study area is in Pike County, and encompasses all or portions of three Census Tracts; CTs 9312, 9317 and 9318. Upon reviewing pertinent U.S. Census Bureau data (*Table S0101*) and maps, interviews with community members and field visits and observations, an analysis was made of Population by Age within the study area.



Census Tract 9312 contains 410 persons age 65 and older. This comprises 8.7% of the total population of CT 9312, which registers **significantly lower** than Pike County’s percentage of elderly population of 14.1%.

Census Tract 9317 contains 562 persons age 65 and older. This comprises 12.4% of the total population of CT 9317, which registers **just lower** than Pike County’s percentage of elderly population of 14.1%.

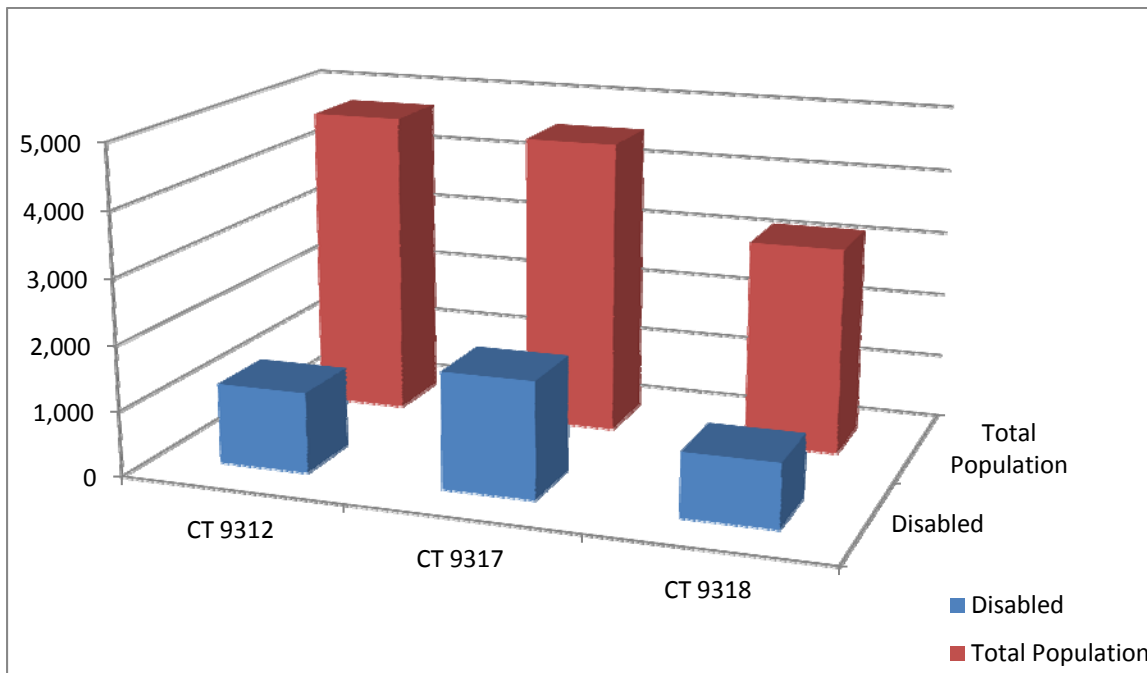
Census Tract 9318 contains 442 persons age 65 and older. This comprises 13.9% of the total population of CT 9318, which registers **just lower** than Pike County’s percentage of elderly population of 14.1%.

Discussions with local officials and community members resulted in the conclusion that there are no additional concentrations of elderly persons within the study area, except as noted in this report.

The data for this section is shown in *Appendix 6*.

5.2 STUDY AREA CENSUS DATA ANALYSIS/POPULATION BY DISABILITY STATUS

The defined study area is in Pike County, and encompasses all or portions of three Census Tracts; CTs 9312, 9317 and 9318. Upon reviewing pertinent U.S. Census Bureau data (*Table B18101*) and maps, interviews with community members and field visits and observations, an analysis was made of Population by Disability Status within the study area.



Census Tract 9312 contains 1,231 persons who are disabled. This comprises 26.1% of the total population of CT 9312, which registers **just lower** than Pike County’s percentage of disabled population of 26.9%.

Census Tract 9317 contains 1,776 persons who are disabled. This comprises 40.0% of the total population of CT 9317, which registers **just greater** than Pike County's percentage of disabled population of 26.9%.

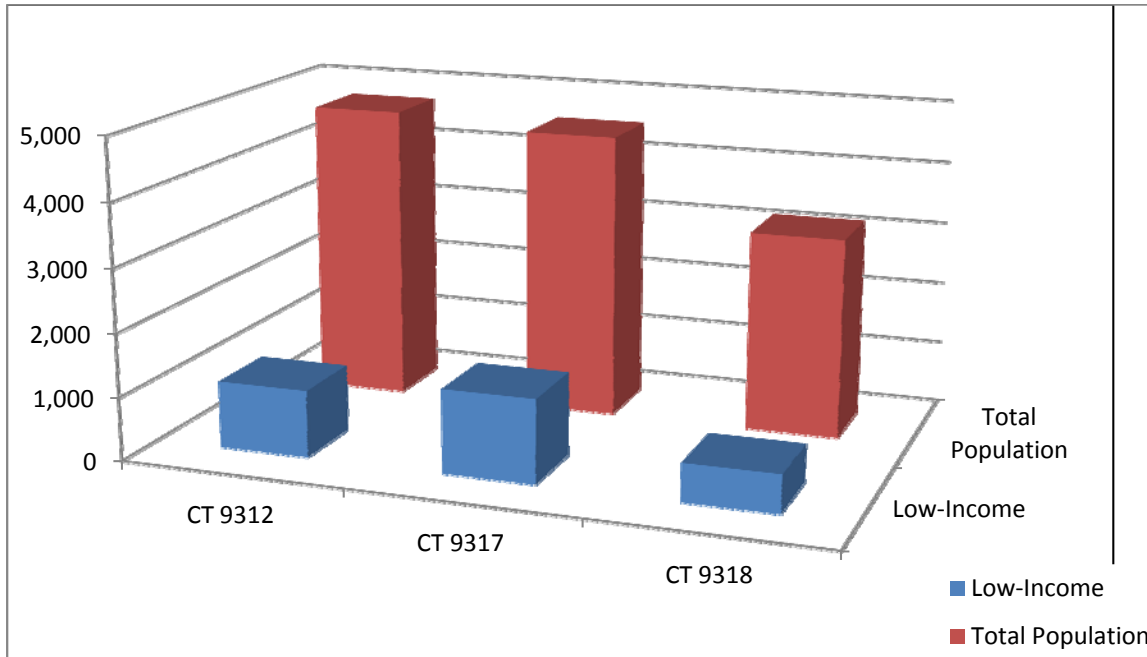
Census Tract 9318 contains 1,974 persons who are disabled. This comprises 33.8% of the total population of CT 9318, which registers **just greater** than Pike County's percentage of disabled population of 30.7%.

Discussions with local officials and community members resulted in the conclusion that the disabled population is consistent and fairly evenly distributed, and there are no additional concentrations of disabled persons within the study area, except as noted in this report.

The data for this section is shown in *Appendix 7*.

5.3 STUDY AREA CENSUS DATA ANALYSIS/POPULATION BY INCOME LEVEL

The defined study area is in Pike County, and encompasses all or portions of three Census Tracts; CTs 9312, 9317 and 9318. Upon reviewing pertinent U.S. Census Bureau data (*Table DP03*) and maps, interviews with community members and field visits and observations, an analysis was made of Population by Income Level within the study area.



Census Tract 9312 contains 1,056 persons currently below the poverty level. This comprises 22.4% of the total population of CT 9312, which registers **just greater** than Pike County’s percentage of low-income population of 20.6%.

Census Tract 9317 contains 1,318 persons currently below the poverty level. This comprises 29.7% of the total population of CT 9317, which registers **just greater** than Pike County’s percentage of low-income population of 20.6%.

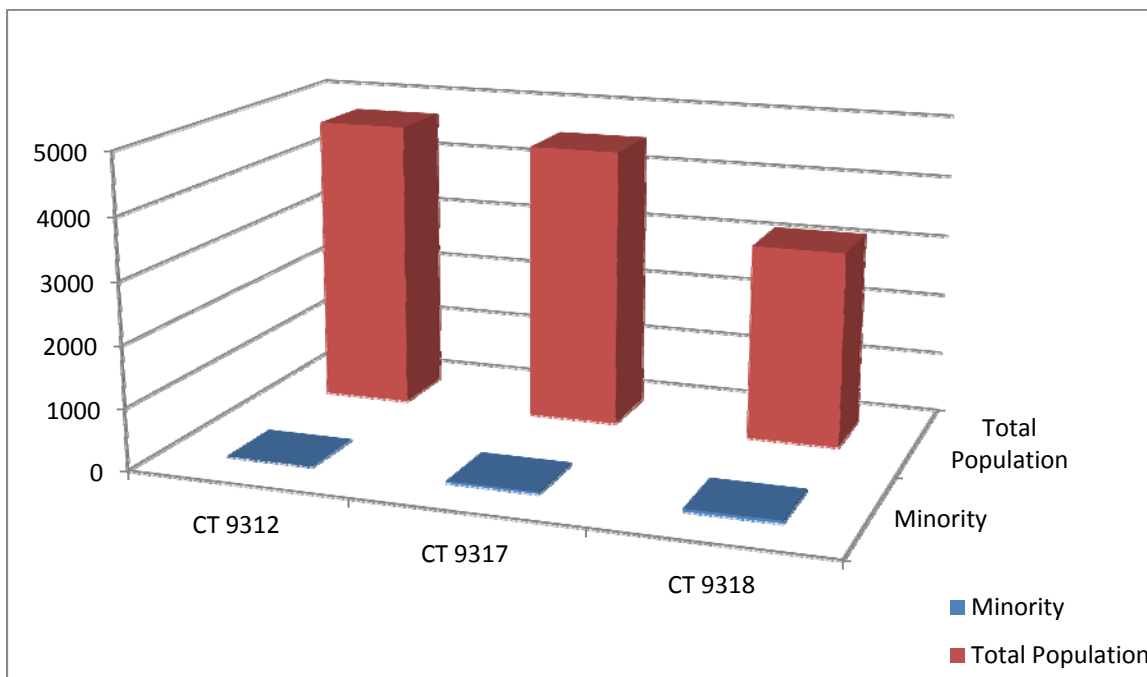
Census Tract 9318 contains 600 persons currently below the poverty level. This comprises 18.9% of the total population of CT 9318, which registers **just lower** than Pike County’s percentage of low-income population of 20.6%.

Discussions with local officials and community members resulted in the conclusion that there are no additional concentrations of low-income populations within the study area, except as noted in this report.

The data for this section is shown in *Appendix 8*.

5.4 STUDY AREA CENSUS DATA ANALYSIS/POPULATION BY MINORITY STATUS

The defined study area is in Pike County, and encompasses all or portions of three Census Tracts; CTs 9312, 9317 and 9318. Upon reviewing pertinent U.S. Census Bureau data (*Table B03002*) and maps, interviews with community members and field visits and observations, an analysis was made of Population by Race within the study area.



Census Tract 9312 contains 0 persons of a minority population. This comprises 0.0% of the total population of CT 9312, which registers **significantly lower** than Pike County’s percentage of minority population of 1.8%.

Census Tract 9317 contains 33 persons of a minority population. This comprises 0.7% of the total population of CT 9317, which registers **significantly lower** than Pike County’s percentage of minority population of 1.8%.

Census Tract 9318 contains 47 persons minority population. This comprises 1.5% of the total population of CT 9318, which registers **significantly lower** than Pike County's percentage of minority population of 1.8%.

Discussions with local officials and community members resulted in the conclusion that there are no additional concentrations of minority populations within the study area, except as noted in this report.

The data for this section is shown in *Appendix 9*.

6.0 CONCLUSIONS

Based on the data obtained from the U.S. Census Bureau for race, age, income, and disability, there does not appear to be a defined environmental justice community within the project area. However, this analysis is intended only to highlight possible areas of concern that will require a more detailed and robust analysis should this project be advanced to future phases.

Big Sandy Area Development District's Regional Transportation Planning staff will continue to assist the KYTC in monitoring the progress of this project and will reevaluate the study to document any socioeconomic changes that may occur in and around the study area throughout the life of the project.

APPENDICES

APPENDIX 1 – PROJECT LOCATION MAP

APPENDIX 2 – METHODOLOGY FOR ASSESSING POTENTIAL ENVIRONMENTAL JUSTICE CONCERNS FOR KYTC PLANNING STUDIES

APPENDIX 3 – CENSUS TRACTS MAP

APPENDIX 4 – THRESHOLD METHODOLOGY

APPENDIX 5 – STUDY CONTACT LIST

APPENDIX 6 – CENSUS DATA – AGE

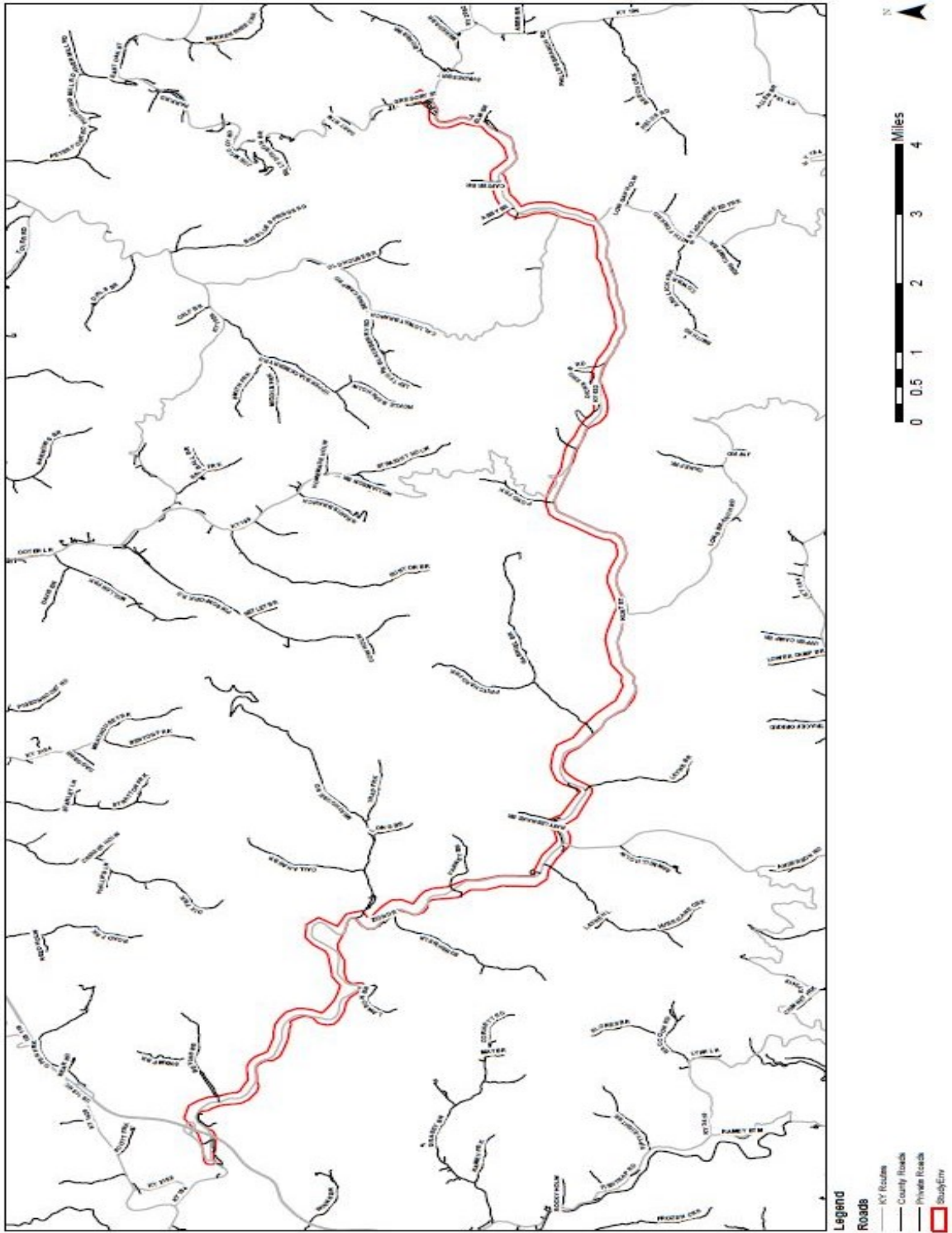
APPENDIX 7 – CENSUS DATA – DISABILITY

APPENDIX 8 – CENSUS DATA – LOW-INCOME

APPENDIX 9 – CENSUS DATA - RACE

APPENDIX 1

KY 194/KY 632 Environmental Justice Study Area



APPENDIX 2**Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies**

Reviewed: November 2009

The demographics of the affected area should be defined using U.S. Census data (Census tracts and block groups) and the percentages for minorities, low-income, elderly, or disabled populations should be compared to those for the following:

- Other nearby Census tracts and block groups,
- The county as a whole,
- The entire state.

Information from PVA offices, social service agencies, local health organizations, local public agencies, and community action agencies can be used to supplement the Census data. Specifically, we are interested in obtaining the following information:

- Identification of community leaders or other contacts who may be able to represent these population groups and through which coordination efforts can be made.
- Comparison of the Census tracts and block groups encompassing the project area to other nearby Census tracts and block groups, county, state, and United States percentages.
- Locations of specific or identified minority, low-income, elderly, or disabled population groups within or near the project area. This may require some field reviews and/or discussions with knowledgeable persons to identify locations of public housing, minority communities, ethnic communities, etc., to verify Census data or identify changes that may have occurred since the last Census. Examples would be changes due to new residential developments in the area or increases in Asian and/or Hispanic populations.
- Concentrations or communities that share a common religious, cultural, ethnic, or other background, e.g., Amish communities.
- Communities or neighborhoods that exhibit a high degree of community cohesion or interaction and the ability to mobilize community actions at the start of community involvement.
- Concentrations of common employment, religious centers, and/or educational institutions with members within walking distance of facilities.
- Potential effects, both positive and negative, of the project on the affected groups as compared to the non-target groups. This may include, but are not limited to:
 1. Access to services, employment or transportation.
 2. Displacement of persons, businesses, farms, or non-profit organizations.
 3. Disruption of community cohesion or vitality.
 4. Effects to human health and/or safety.

Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies

- Possible methods to minimize or avoid impacts on the target population groups.

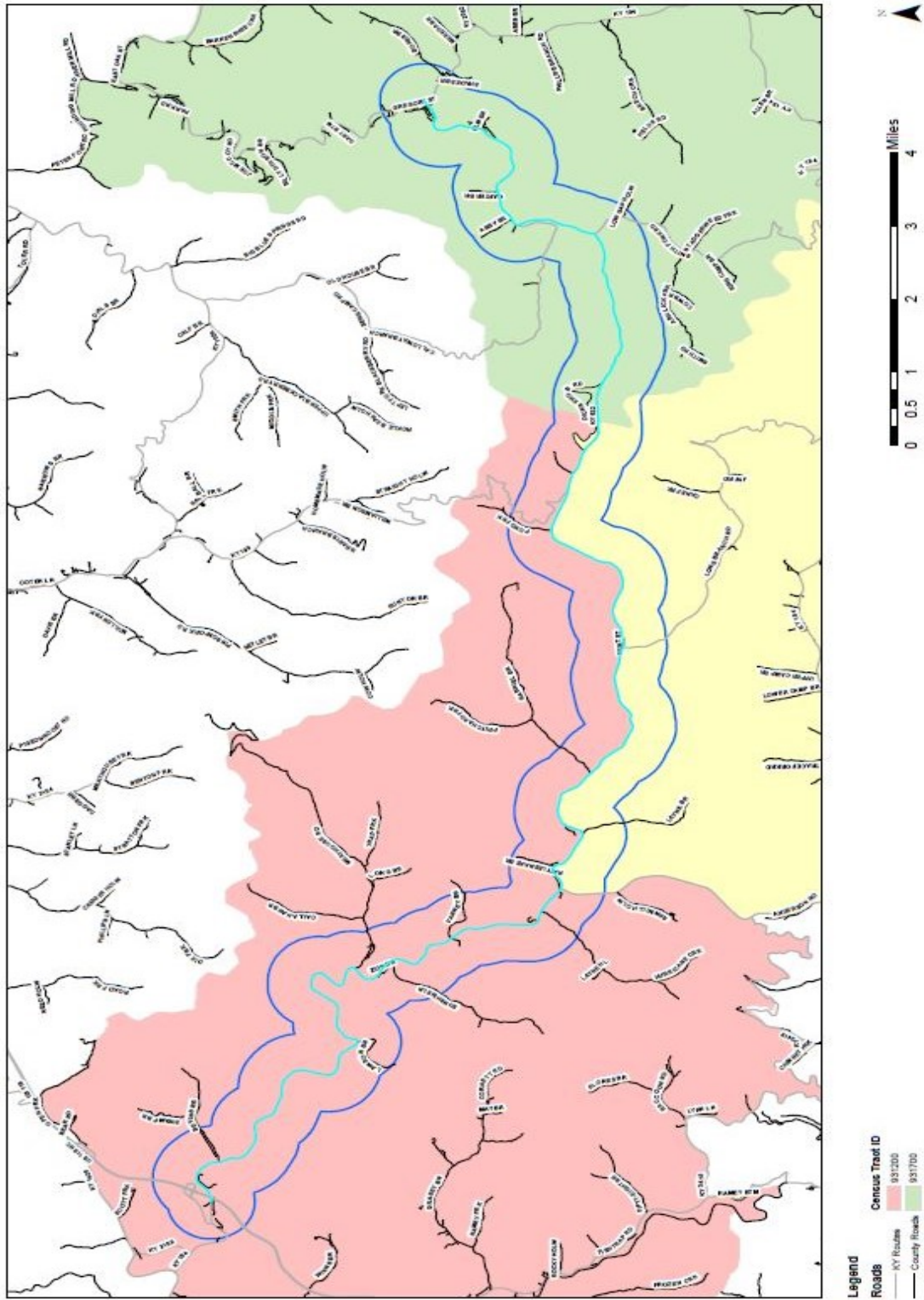
If percentages of these populations are elevated within the project area, it should be brought to the attention of the Division of Planning immediately so that coordination with affected populations may be conducted to determine the affected population's concerns and comments on the project. Also, with this effort, representatives of minority, elderly, low-income, or disabled populations should be identified so that, together, we can build a partnership for the region that may be incorporated into other projects. Also, we hope to build a Commonwealth-wide database of contacts. We are available to participate in any meetings with these affected populations or with their community leaders or representatives.

In identifying communities, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect. The selection of the appropriate unit of analysis may be a governing body's jurisdiction, a neighborhood, census tract, or other similar unit that is to be chosen so as not to artificially dilute or inflate the affected population. A target population also exists if there is (1) more than one minority or other group present and (2) the percentages, as calculated by aggregating all minority persons, exceed that of the general population or other appropriate unit of geographic analysis.

Maps should be included that show the Census tracts and block groups included in the analysis as well as the relation of the project area to those Census tracts and block groups.

APPENDIX 3

KY 194 / KY 632 Environmental Justice Census Tracts



APPENDIX 4

THRESHOLD METHODOLOGY

Pike County, Kentucky’s Census Data percentages from the *Census 2010; ACS 5-Year Estimates* are used as a comparison against the affected Census Tracts in this report, to show and identify any underserved population that might be present and negatively impacted in the project location, versus in other Census Tracts throughout the county.

For analysis purposes, percentages that are up to 25% lower than the county percentages, or **Base**, are considered **Just Lower**, while those above 25% lower are considered **Significantly Lower**. Conversely, percentages up to 25% higher than the county percentages are classified as **Just Higher**; percentages greater than 25% higher than the county percentages are **Significantly Higher**.

THRESHOLD TABLE

THRESHOLD	AGE 65+	DISABLED	LOW-INCOME	MINORITY
Significantly Higher	>21.15	>43.7	>30.9	>3.5
Just Higher	14.1-21.15	26.9-43.7	20.6-30.9	1.8-3.5
Base (County %)	14.1	26.9	20.6	1.8
Just Lower	10.6-14.1	21.8-26.9	19.95-20.6	1.6-1.8
Significantly Lower	<10.6	<21.8	<19.95	<1.6
<i>All numbers are percentages.</i>				

APPENDIX 5

STUDY CONTACT LISTING

Wayne T. Rutherford
Pike County Judge-Executive
606-432-6247

Frank Hatcher
Pike County Road Supervisor
606-432-6247

Hillman Dotson
Pike County Magistrate, District 5
606-456-7147

APPENDIX 6

CENSUS 2010; ACS 5-YEAR ESTIMATES - POPULATION BY AGE

SUBJECT	POPULATIONS BY AGE			
	POPULATIONS PIKE COUNTY	CENSUS TRACT 9312	CENSUS TRACT 9317	CENSUS TRACT 9318
SELECTED AGE CATEGORIES				
65 years of age and over	64,887	4,716	4,532	3,177
Total Population				
by Age of Concern	9149	410	562	442
by Percentage	14.1%	8.7%	12.4%	13.9%

Populations summarized from Census 2010; ACS 5-Year Estimates, Table S0101.

APPENDIX 7

CENSUS 2010; ACS 5-YEAR ESTIMATES - POPULATION BY DISABILITY

SUBJECT	POPULATIONS	POPULATIONS BY DISABLED STATUS			
		PIKE COUNTY	CENSUS TRACT 9312	CENSUS TRACT 9317	CENSUS TRACT 9318
DISABLED STATUS	Total Population	64,210	4,716	4,437	3,177
	by Disabled Status	17,303	1,231	1,776	974
	by Percentage	26.9%	26.1%	40.0%	30.7%

Populations summarized from Census 2010; ACS 5-Year Estimates, Table B18101.

APPENDIX 8

CENSUS 2010; ACS 5-YEAR ESTIMATES - POPULATION BY LOW-INCOME

SUBJECT	POPULATIONS	POPULATIONS BY LOW-INCOME STATUS			
		PIKE COUNTY	CENSUS TRACT 9312	CENSUS TRACT 9317	CENSUS TRACT 9318
LOW-INCOME STATUS	Total Population	52,145	4,716	4,437	3,177
Low-Income	by Low-Income Status by Percentage	10,742 20.6%	1,056 22.4%	1,318 29.7%	600 18.9%

Populations summarized from Census 2010; ACS 5-Year Estimates, Table DP03.

APPENDIX 9

CENSUS 2010; ACS 5-YEAR ESTIMATES - POPULATION BY RACE

SUBJECT	POPULATIONS	POPULATIONS BY MINORITY STATUS			
		PIKE COUNTY	CENSUS TRACT 9312	CENSUS TRACT 9317	CENSUS TRACT 9318
RACE					
	Total Population	64,887	4,716	4,532	3,177
	by Minority Status	1,194	0	33	47
	by Percentage	1.8%	0.0%	0.7%	1.5%
Minority Status					
Hispanic or Latino		443	0	0	35
Black or African-American Alone		358	0	5	0
American Indian and Alaska Native		28	0	0	0
Asian Alone		365	0	28	12
Native Hawaiian and Other Pacific		0	0	0	0
Some other race alone		0	0	0	0

Populations summarized from Census 2010; ACS 5-Year Estimates, Table B03002.

Prepared for the Division of Planning, Kentucky Transportation Cabinet



by the
Regional Transportation Planning Office,
Big Sandy Area Development District
110 Resource Court
Prestonsburg, KY 41653
606-886-2374, Ext. 317
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EXECUTIVE SUMMARY

The Kentucky Highway 194/Kentucky Highway 632 (KY 194) Improvement Planning Study has been requested to identify major environmental concerns associated with potential improvements to the roadway between US Highway 119 (US 119) and Phelps in central Pike County, Kentucky. This report covers the second phase of the project, which extends from the Kellogg Factory located near the intersection of KY 194 and Deskin Branch, eastward to Phelps. The project study area includes approximately twenty miles and 1,645 acres, centered along the current roadway. The assessment was completed through in-house review of available information and a reconnaissance of the study area on November 25 and 26, 2013.

The study area contains a mix of open/developed land (555 acres), scrub-shrub habitat (110 acres), and upland woods habitat (980 acres). Open and developed areas are located on the lower, flat ground and consist of residential and commercial development, industrial coal processing and storage facilities, and road right-of-way. Flat land in the corridor is at a premium and most flat areas have been heavily modified by past development activities, including stream ditching and culverting.

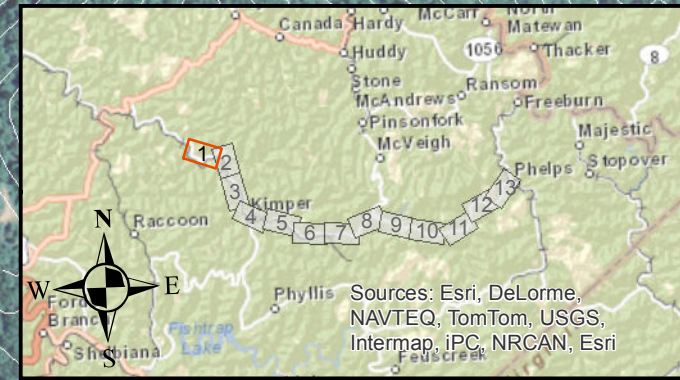
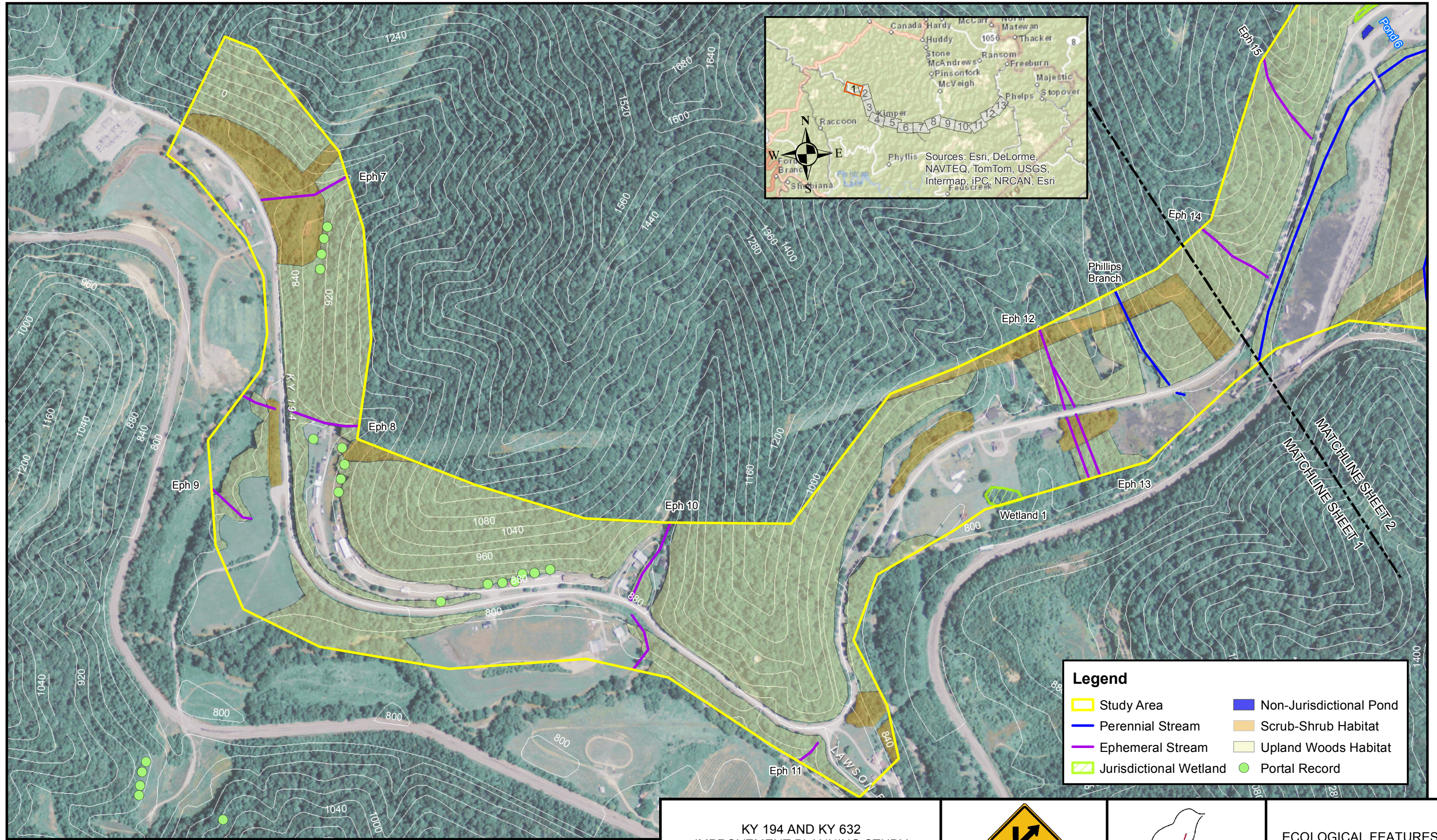
The study area includes twenty named and unnamed perennial streams that total 35,990 linear feet, which are listed in the table below. The study area also contains nine intermittent streams totaling 3,530 linear feet; 52 ephemeral streams totaling 22,565 linear feet; three wetlands totaling 1.366 acre; and four ponds totaling 0.501 acre. The streams generally flow to the central valley and then are routed through road ditches and culverts to two major streams: Johns Creek flows westward in the western and central portions of the study area, and Road Branch flows eastward in the eastern portion of the study area. Impacts to jurisdictional features (streams, wetlands and ponds) will likely require permitting through the U.S. Army Corps of Engineers and the Kentucky Division of Water.

No caves or rockshelters were observed within the study area, but the area has been extensively mined for coal. A review of mine maps, topographic quadrangle maps, and geologic maps identified 90 mine portals records within or immediately adjacent to the study area. Of these, four portals were field-located during the assessment. The portal records are dispersed throughout the study area, and most of the records occur in small clusters associated with coal facilities or mine benches. The study area is not underlain by karst geology, and no springs or sinkholes were observed during the reconnaissance.

Based on coordination and review of available database information from the U.S. Fish and Wildlife Service (USFWS), the Kentucky Department of Fish and Wildlife Resources, and the Kentucky State Nature Preserves Commission, federally-listed species potentially occurring within the study area are limited to the Indiana bat (*Myotis sodalis*; federally endangered), northern long-eared bat (*Myotis septentrionalis*, proposed federally endangered), and gray bat (*Myotis grisescens*; federally endangered). The upland woods habitat (980 acres) is considered potential Indiana bat and northern long-eared bat summer habitat. The wooded corridors along the perennial and intermittent streams provide potential foraging habitat for the gray bat. Mine portals are present in the study area, and provide potential winter roosting habitat for the Indiana bat and northern long-eared bat, and potential roosting habitat for the gray bat. The study area is not located in the vicinity of a known maternity roost or hibernacula for the Indiana bat, as designated by the USFWS 2014 map. Project impacts to habitat for federally-listed species would require coordination through the USFWS.

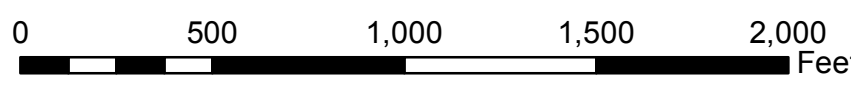
Feature	Status	Length (ft)	Area (acres)	Number
Ephemeral 7	Jurisdictional	485	0.022	---
Ephemeral 8	Jurisdictional	580	0.027	---
Ephemeral 9	Jurisdictional	275	0.013	---
Ephemeral 10	Jurisdictional	805	0.037	---
Ephemeral 11	Jurisdictional	145	0.007	---
Ephemeral 12	Jurisdictional	805	0.037	---
Ephemeral 13	Jurisdictional	585	0.027	---
Ephemeral 14	Jurisdictional	455	0.021	---
Ephemeral 15	Jurisdictional	510	0.023	---
Ephemeral 16	Jurisdictional	345	0.016	---
Ephemeral 17	Jurisdictional	455	0.021	---
Ephemeral 18	Jurisdictional	595	0.027	---
Ephemeral 19	Jurisdictional	320	0.015	---
Ephemeral 20	Jurisdictional	615	0.028	---
Ephemeral 21	Jurisdictional	540	0.025	---
Ephemeral 22	Jurisdictional	705	0.032	---
Ephemeral 23	Jurisdictional	120	0.006	---
Ephemeral 24	Jurisdictional	355	0.016	---
Ephemeral 25	Jurisdictional	280	0.013	---
Ephemeral 26	Jurisdictional	685	0.031	---
Ephemeral 27	Jurisdictional	720	0.033	---
Ephemeral 28	Jurisdictional	220	0.010	---
Ephemeral 29	Jurisdictional	755	0.035	---
Ephemeral 30	Jurisdictional	480	0.022	---
Ephemeral 31	Jurisdictional	665	0.031	---
Ephemeral 32	Jurisdictional	940	0.043	---
Ephemeral 33	Jurisdictional	260	0.012	---
Ephemeral 34	Jurisdictional	505	0.023	---
Ephemeral 35	Jurisdictional	320	0.015	---
Ephemeral 36	Jurisdictional	485	0.022	---
Ephemeral 37	Jurisdictional	240	0.011	---
Ephemeral 38	Jurisdictional	455	0.021	---
Ephemeral 39	Jurisdictional	70	0.003	---
Ephemeral 40	Jurisdictional	480	0.022	---
Ephemeral 41	Jurisdictional	190	0.009	---
Ephemeral 42	Jurisdictional	130	0.006	---
Ephemeral 43	Jurisdictional	440	0.020	---
Ephemeral 44	Jurisdictional	425	0.020	---
Ephemeral 45	Jurisdictional	325	0.015	---
Ephemeral 46	Jurisdictional	360	0.017	---
Ephemeral 47	Jurisdictional	460	0.021	---
Ephemeral 48	Jurisdictional	450	0.021	---
Ephemeral 49	Jurisdictional	390	0.018	---
Ephemeral 50	Jurisdictional	30	0.001	---
Ephemeral 51	Jurisdictional	385	0.018	---
Ephemeral 52	Jurisdictional	375	0.017	---
Ephemeral 53	Jurisdictional	420	0.019	---
Ephemeral 54	Jurisdictional	380	0.017	---
Ephemeral 55	Jurisdictional	75	0.003	---

Feature	Status	Length (ft)	Area (acres)	Number
Ephemeral 56	Jurisdictional	515	0.024	---
Ephemeral 57	Jurisdictional	650	0.030	---
Ephemeral 58	Jurisdictional	310	0.014	---
Ephemeral Stream Total		22,565	1.037	---
Unnamed Intermittent 2	Jurisdictional	740	0.034	---
Shop Branch	Jurisdictional	480	0.022	---
Unnamed Intermittent 3	Jurisdictional	165	0.008	---
Unnamed Intermittent 4	Jurisdictional	125	0.006	---
Unnamed Intermittent 5	Jurisdictional	435	0.020	---
Unnamed Intermittent 6	Jurisdictional	395	0.018	---
Unnamed Intermittent 7	Jurisdictional	365	0.017	---
Abbey Branch	Jurisdictional	515	0.024	---
Unnamed Intermittent 8	Jurisdictional	310	0.014	---
Intermittent Stream Total		3,530	0.163	---
Phillips Branch	Jurisdictional	625	0.036	---
Unnamed Perennial 1	Jurisdictional	200	0.011	---
Meathouse Fork	Jurisdictional	680	0.273	---
Johns Creek	Jurisdictional	13,315	7.122	---
Deskens Branch	Jurisdictional	690	0.040	---
Hurricane Creek	Jurisdictional	530	0.110	---
Elkhorn Branch	Jurisdictional	435	0.050	---
Rattlesnake Branch	Jurisdictional	105	0.010	---
Lane Branch	Jurisdictional	330	0.068	---
Marts Branch	Jurisdictional	700	0.048	---
Gabriel Branch	Jurisdictional	915	0.147	---
Pond Fork	Jurisdictional	470	0.027	---
Blackberry Fork	Jurisdictional	530	0.043	---
Road Fork	Jurisdictional	495	0.034	---
Calloway Branch	Jurisdictional	295	0.020	---
Unnamed Perennial 2	Jurisdictional	300	0.014	---
Carter Branch	Jurisdictional	510	0.023	---
Right Fork Peter Creek	Jurisdictional	13,755	5.526	---
Pecks Branch	Jurisdictional	475	0.027	---
Peter Creek	Jurisdictional	635	0.255	---
Perennial Stream Total		35,990	13.884	---
Wetland 1	Jurisdictional	---	0.313	---
Wetland 2	Jurisdictional	---	0.113	---
Wetland 3	Jurisdictional	---	0.940	---
Wetland Total		---	1.366	---
Pond 6	Nonjurisdictional	---	0.055	---
Pond 7	Nonjurisdictional	---	0.295	---
Pond 8	Nonjurisdictional	---	0.027	---
Pond 9	Nonjurisdictional	---	0.124	---
Pond Total		---	0.501	---
Open/Developed	---	---	555	---
Scrub-Shrub Habitat	---	---	110	---
Upland Woods Habitat	---	---	980	---
Mine Portals	---	---	---	90



Legend

Study Area	Non-Jurisdictional Pond
Perennial Stream	Scrub-Shrub Habitat
Ephemeral Stream	Upland Woods Habitat
Jurisdictional Wetland	Portal Record



NOTE: ECOLOGICAL RECONNAISSANCE PERFORMED BY REDWING ECOLOGICAL SERVICES ON NOVEMBER 25 AND 26, 2013.



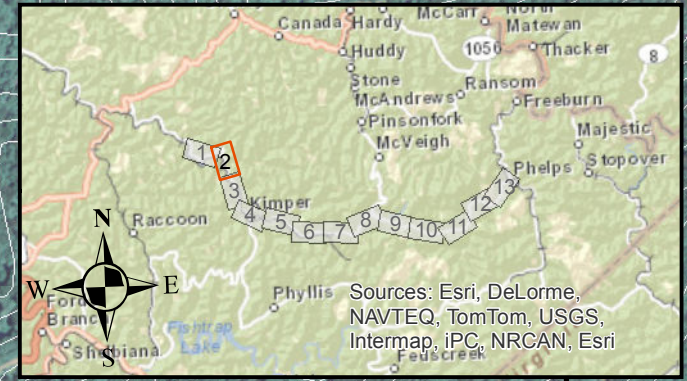
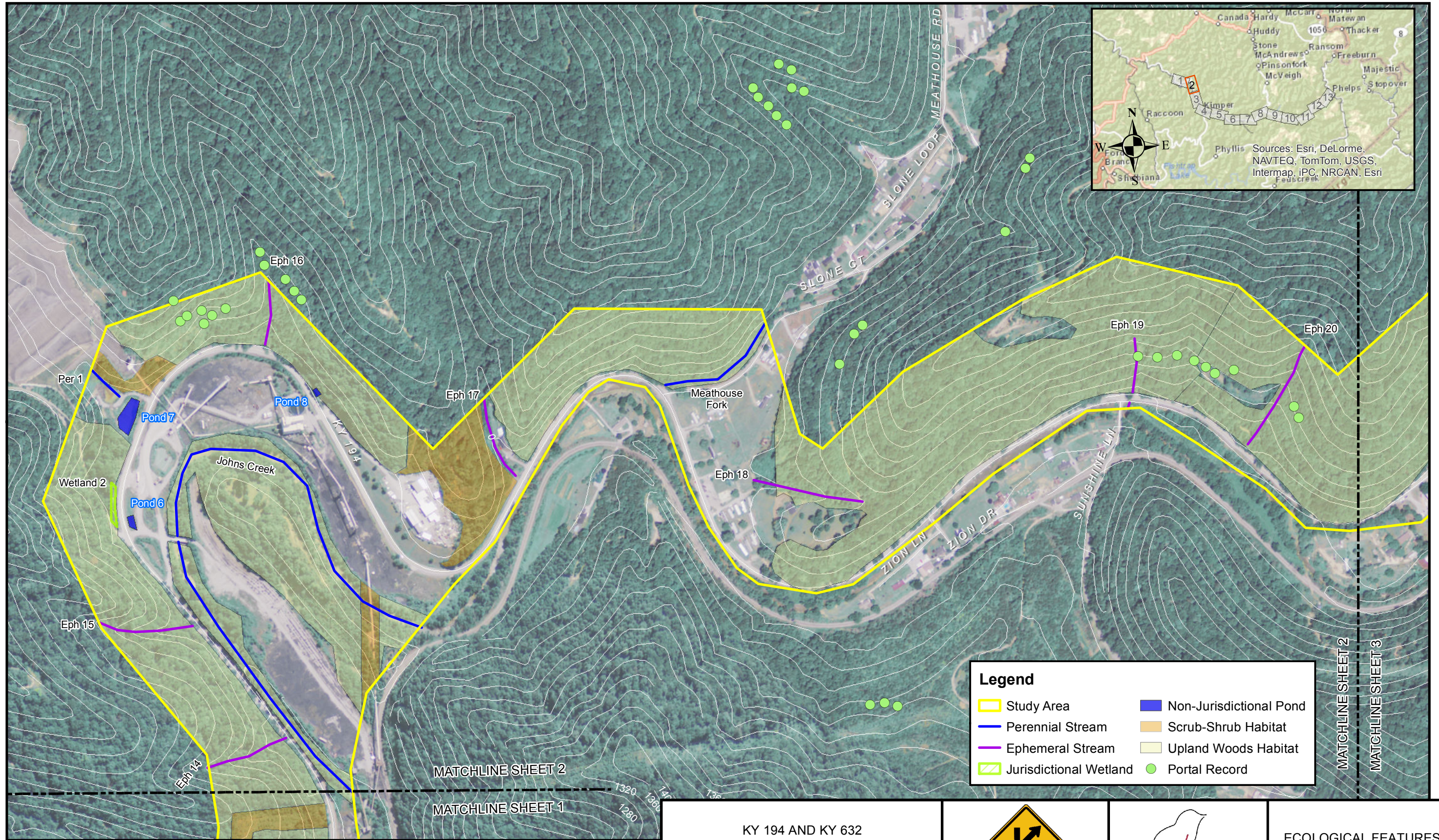
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PIKE COUNTY, KENTUCKY**

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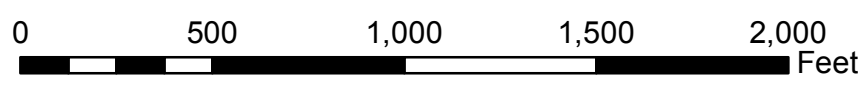
**ECOLOGICAL FEATURES
MAP**

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Legend

Study Area	Non-Jurisdictional Pond
Perennial Stream	Scrub-Shrub Habitat
Ephemeral Stream	Upland Woods Habitat
Jurisdictional Wetland	Portal Record



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KY 194 AND KY 632
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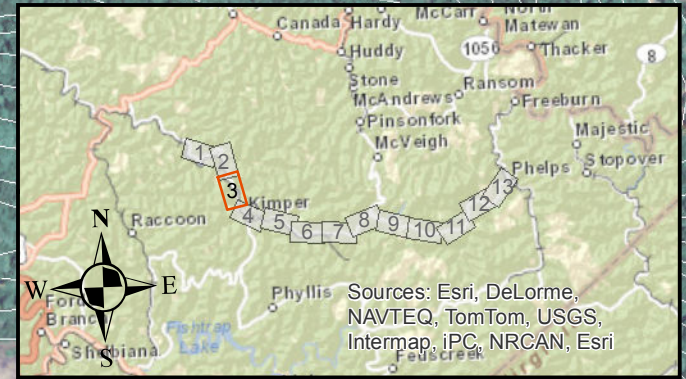
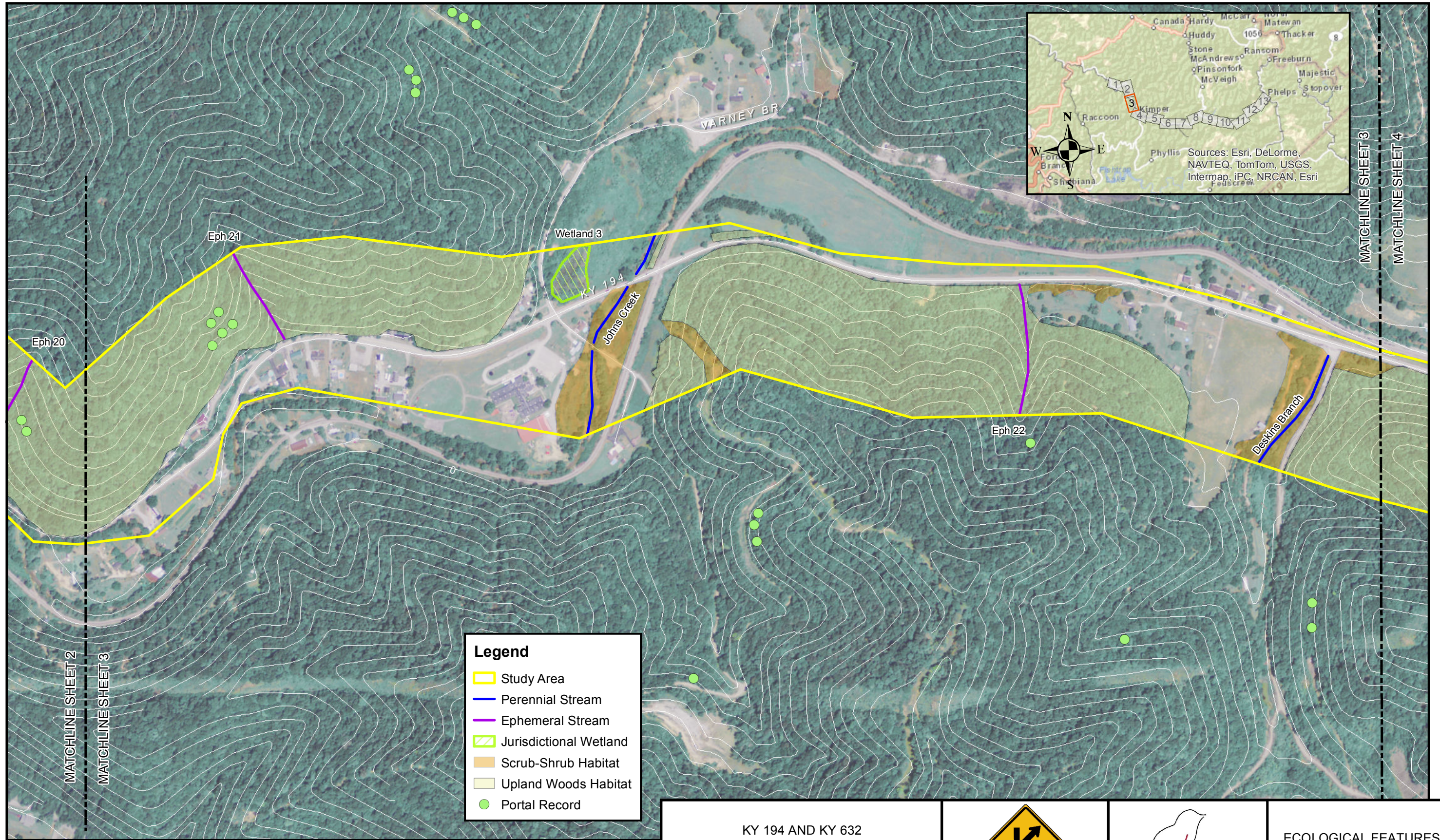
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ECOLOGICAL FEATURES
MAP

FIGURE 2
SHEET 2 of 13

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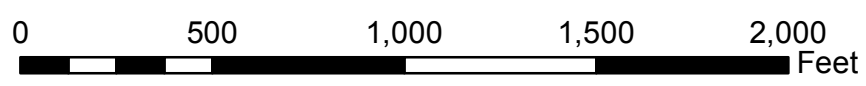


MATCHLINE SHEET 3
MATCHLINE SHEET 4

MATCHLINE SHEET 2
MATCHLINE SHEET 3

Legend

- Study Area
- Perennial Stream
- Ephemeral Stream
- Jurisdictional Wetland
- Scrub-Shrub Habitat
- Upland Woods Habitat
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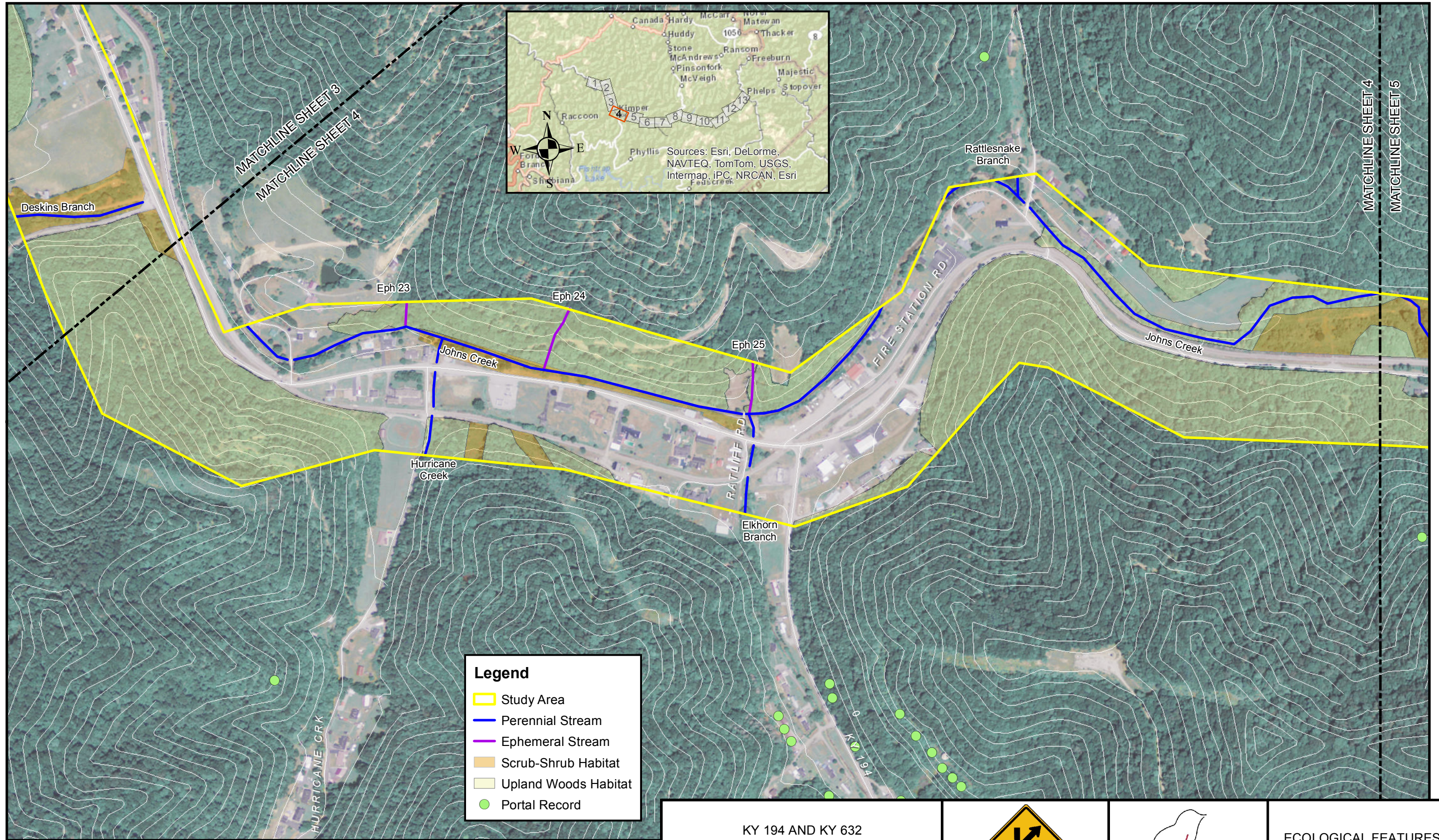
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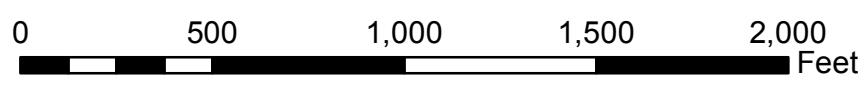
**ECOLOGICAL FEATURES
MAP**

FIGURE 2
SHEET 3 of 13



Legend

- Study Area
- Perennial Stream
- Ephemeral Stream
- Scrub-Shrub Habitat
- Upland Woods Habitat
- Portal Record



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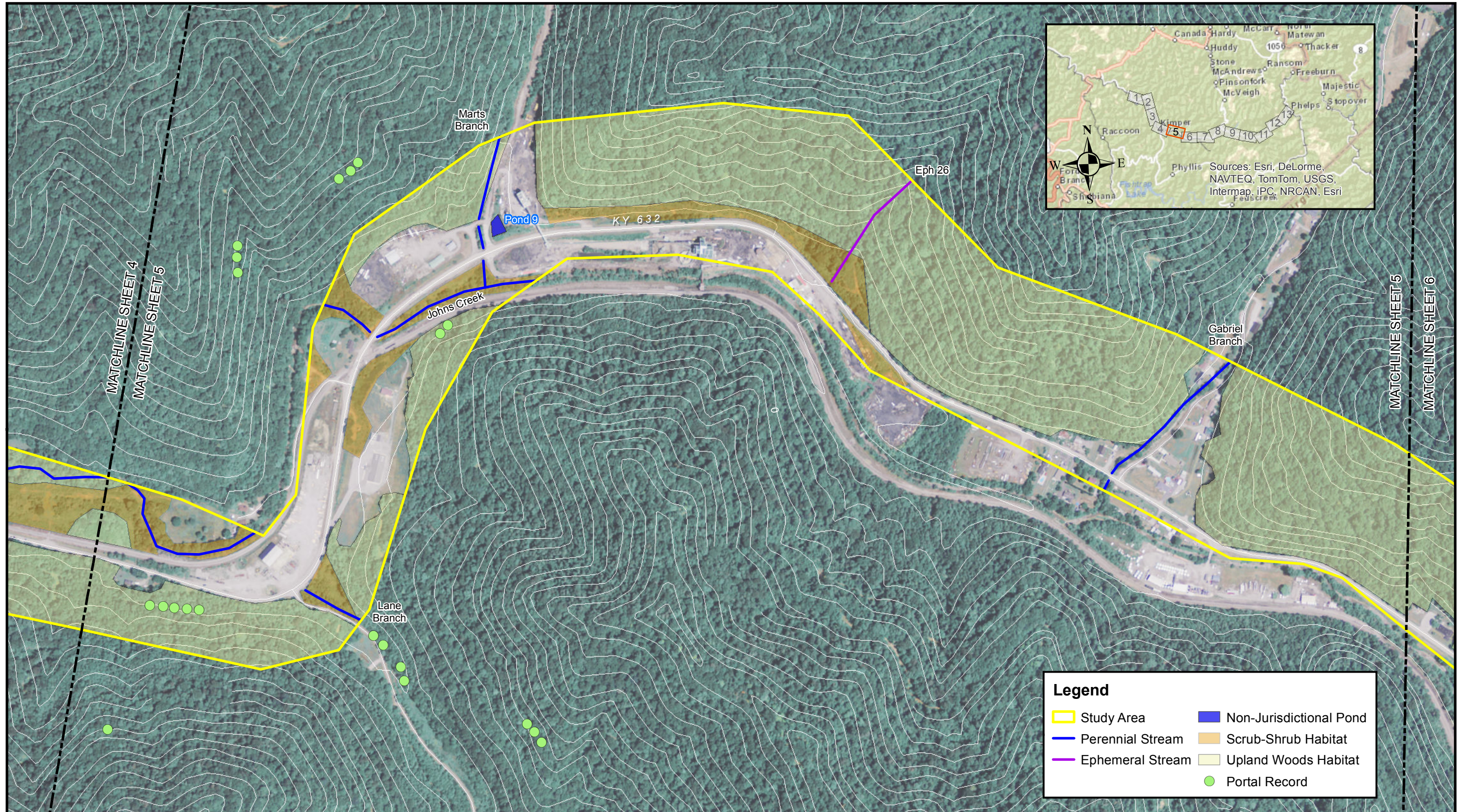
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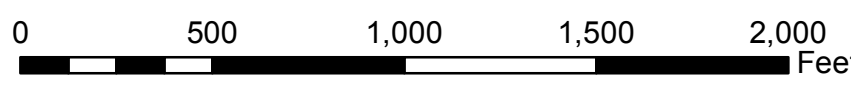
FIGURE 2
SHEET 4 of 13

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Legend

Study Area	Non-Jurisdictional Pond
Perennial Stream	Scrub-Shrub Habitat
Ephemeral Stream	Upland Woods Habitat
Portal Record	



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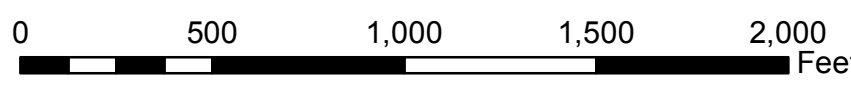
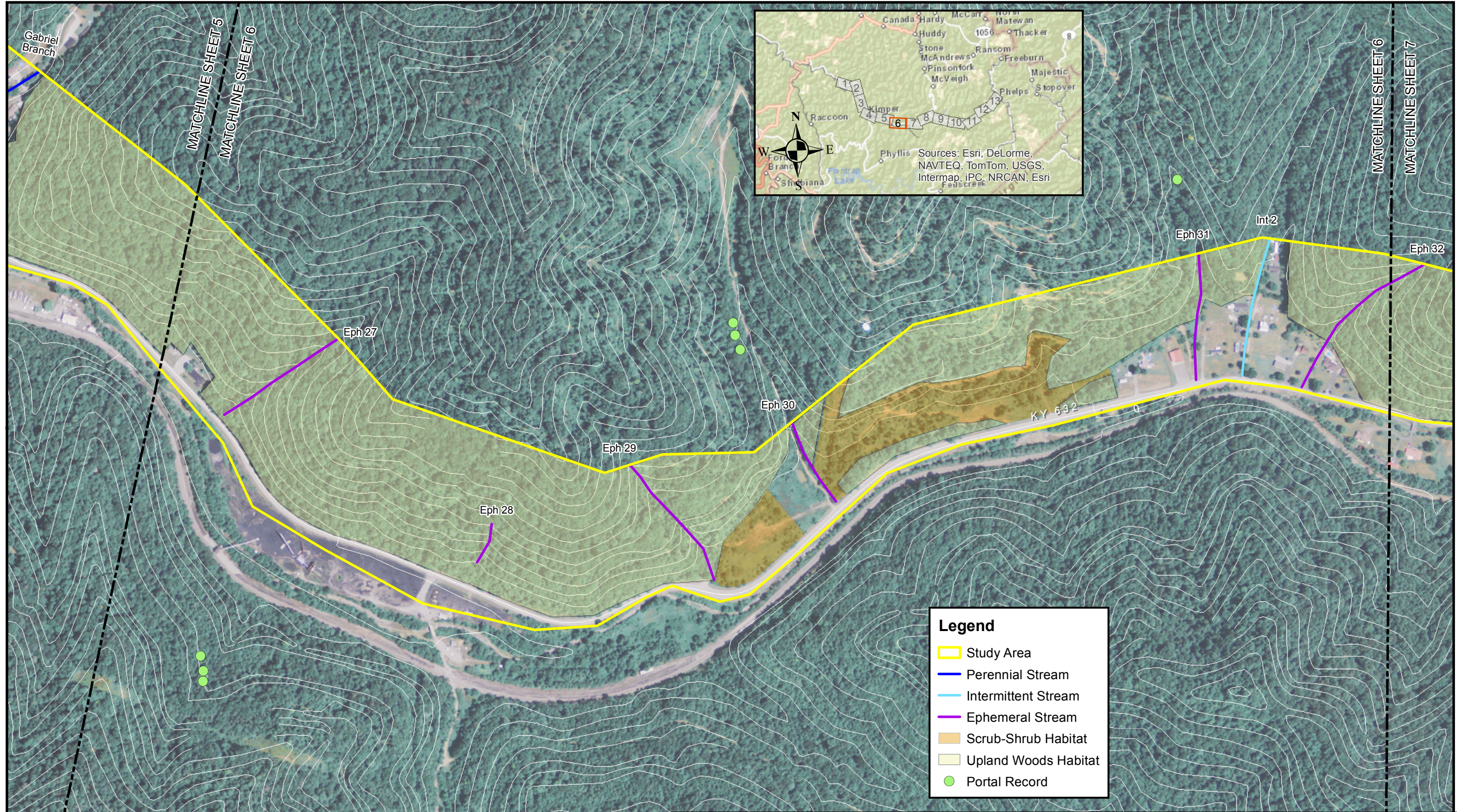
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**ECOLOGICAL FEATURES
MAP**

FIGURE 2
SHEET 5 of 13



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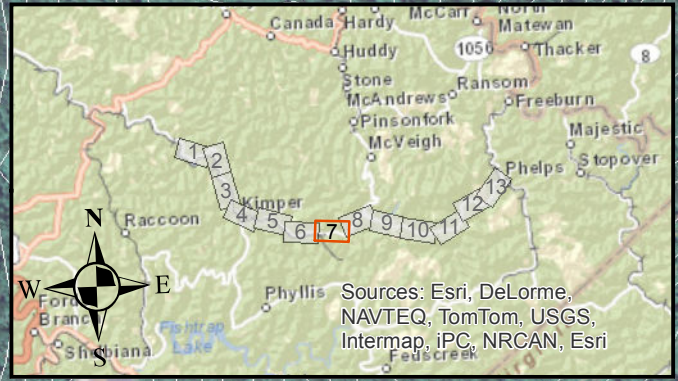
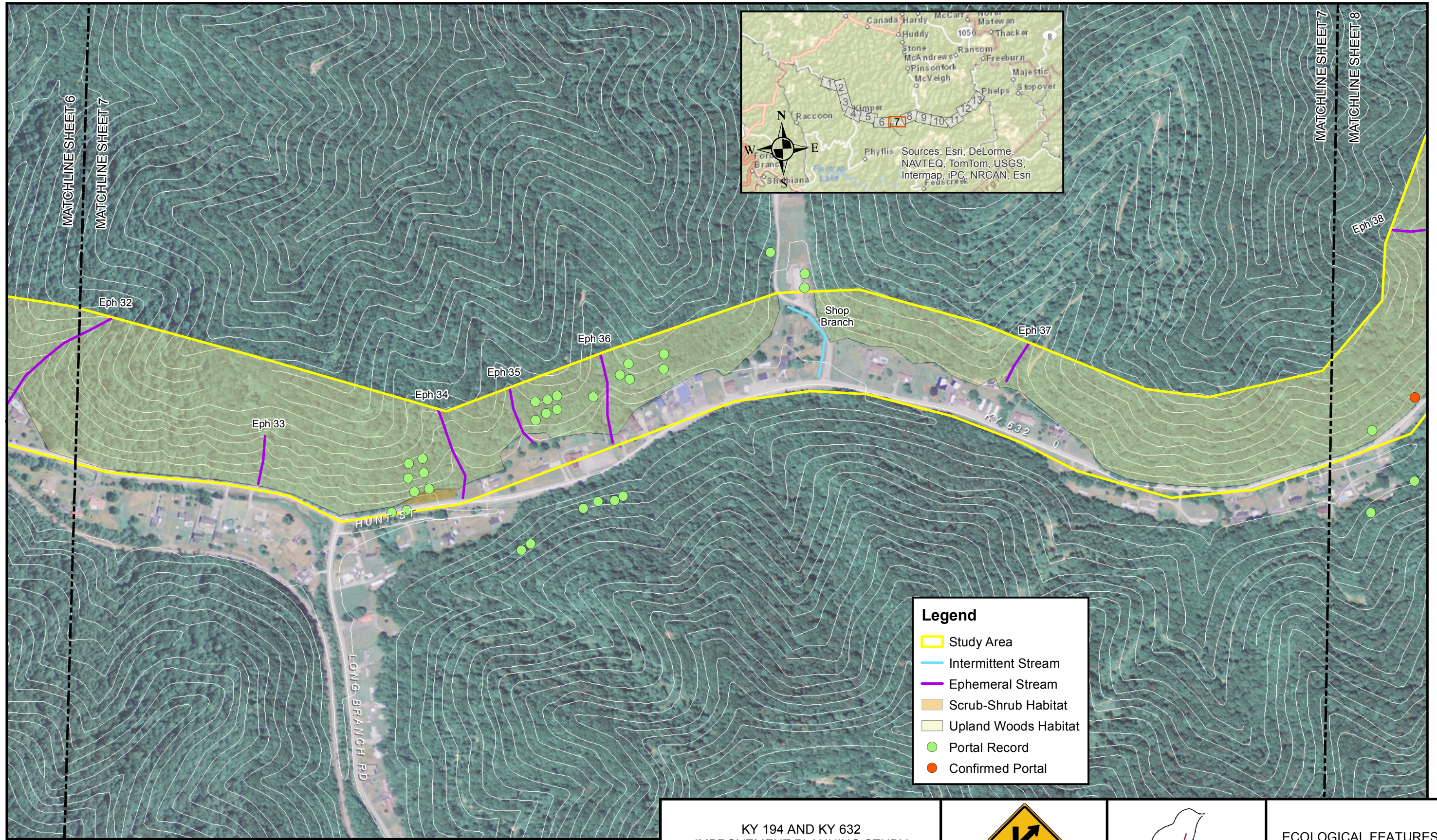
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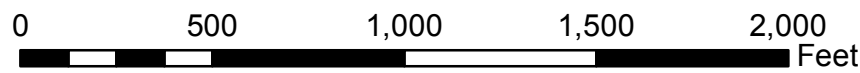
ECOLOGICAL FEATURES
MAP

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Legend

- Study Area
- Intermittent Stream
- Ephemeral Stream
- Scrub-Shrub Habitat
- Upland Woods Habitat
- Portal Record
- Confirmed Portal



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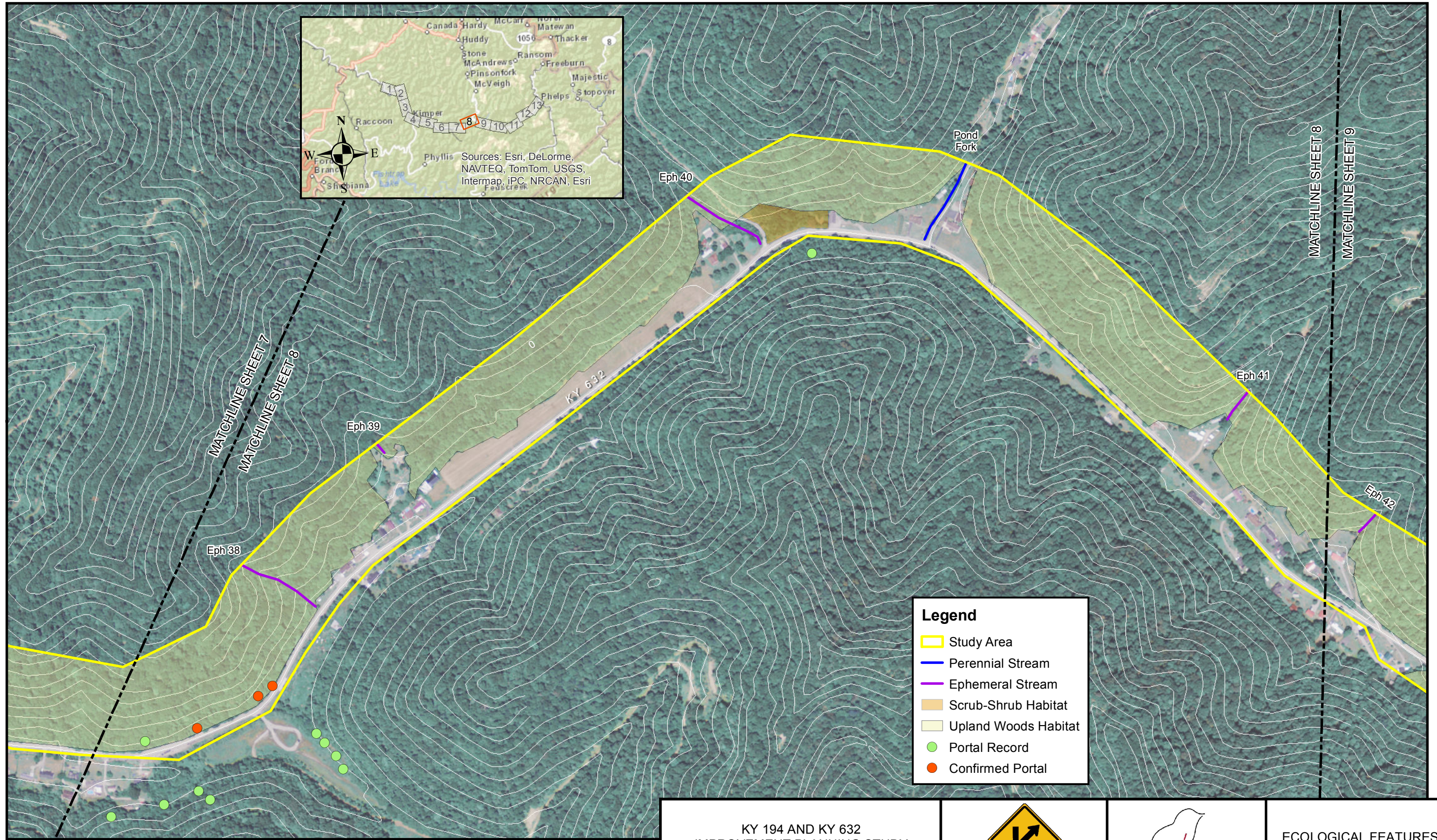
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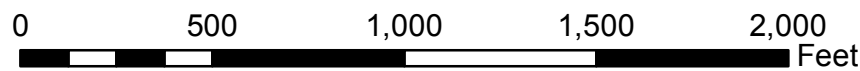
**ECOLOGICAL FEATURES
MAP**

FIGURE 2
SHEET 7 of 13



Legend

- Study Area
- Perennial Stream
- Ephemeral Stream
- Scrub-Shrub Habitat
- Upland Woods Habitat
- Portal Record
- Confirmed Portal



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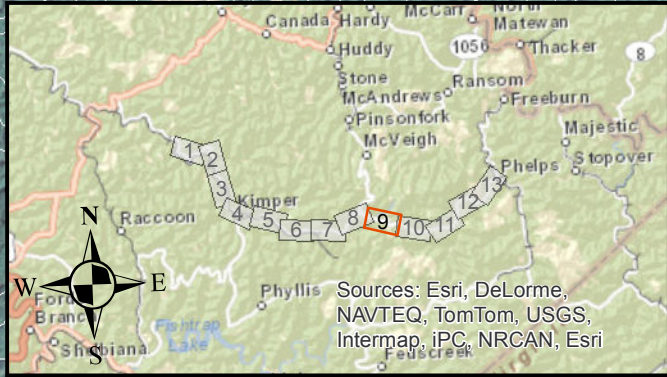
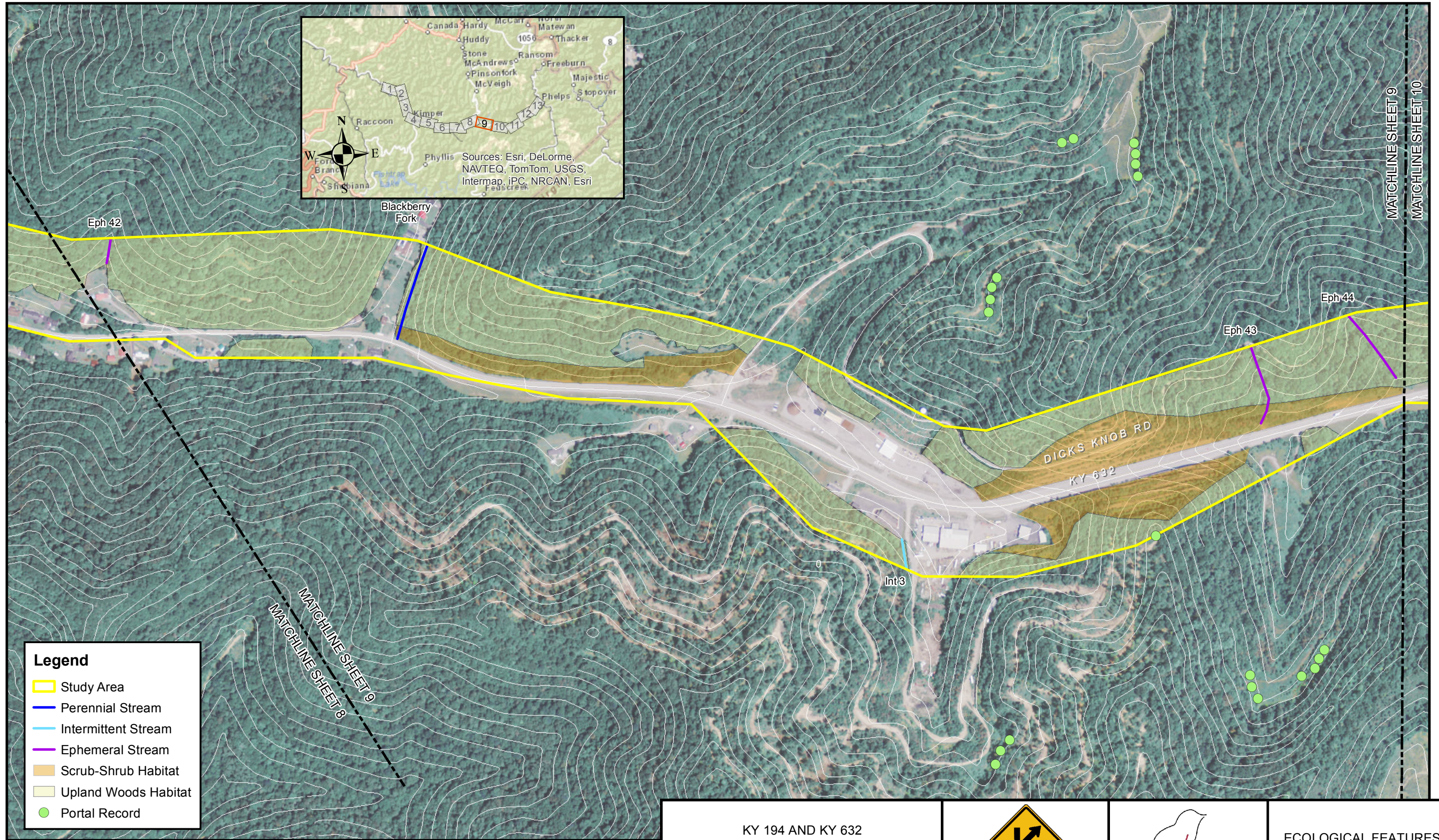
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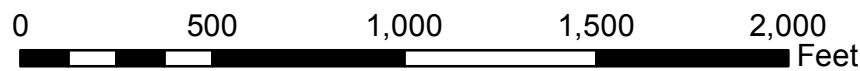


ECOLOGICAL FEATURES
MAP



Legend

- Study Area
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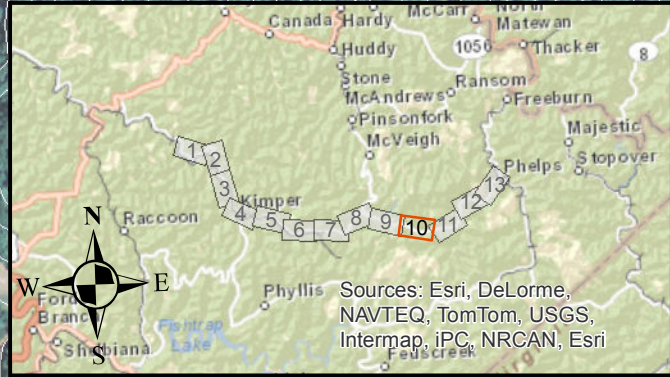
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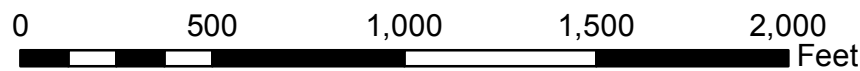


ECOLOGICAL FEATURES
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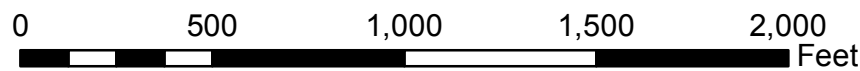


ECOLOGICAL FEATURES
MAP



Legend

- Study Area
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Scrub-Shrub Habitat
- Upland Woods Habitat
- Portal Record



NOTE: ECOLOGICAL RECONNAISSANCE PERFORMED BY REDWING ECOLOGICAL SERVICES ON NOVEMBER 25 AND 26, 2013.



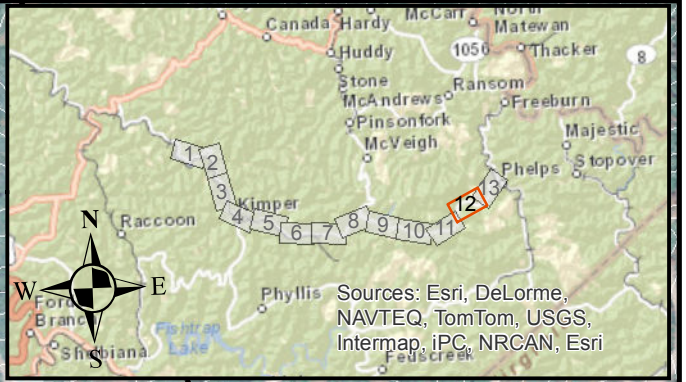
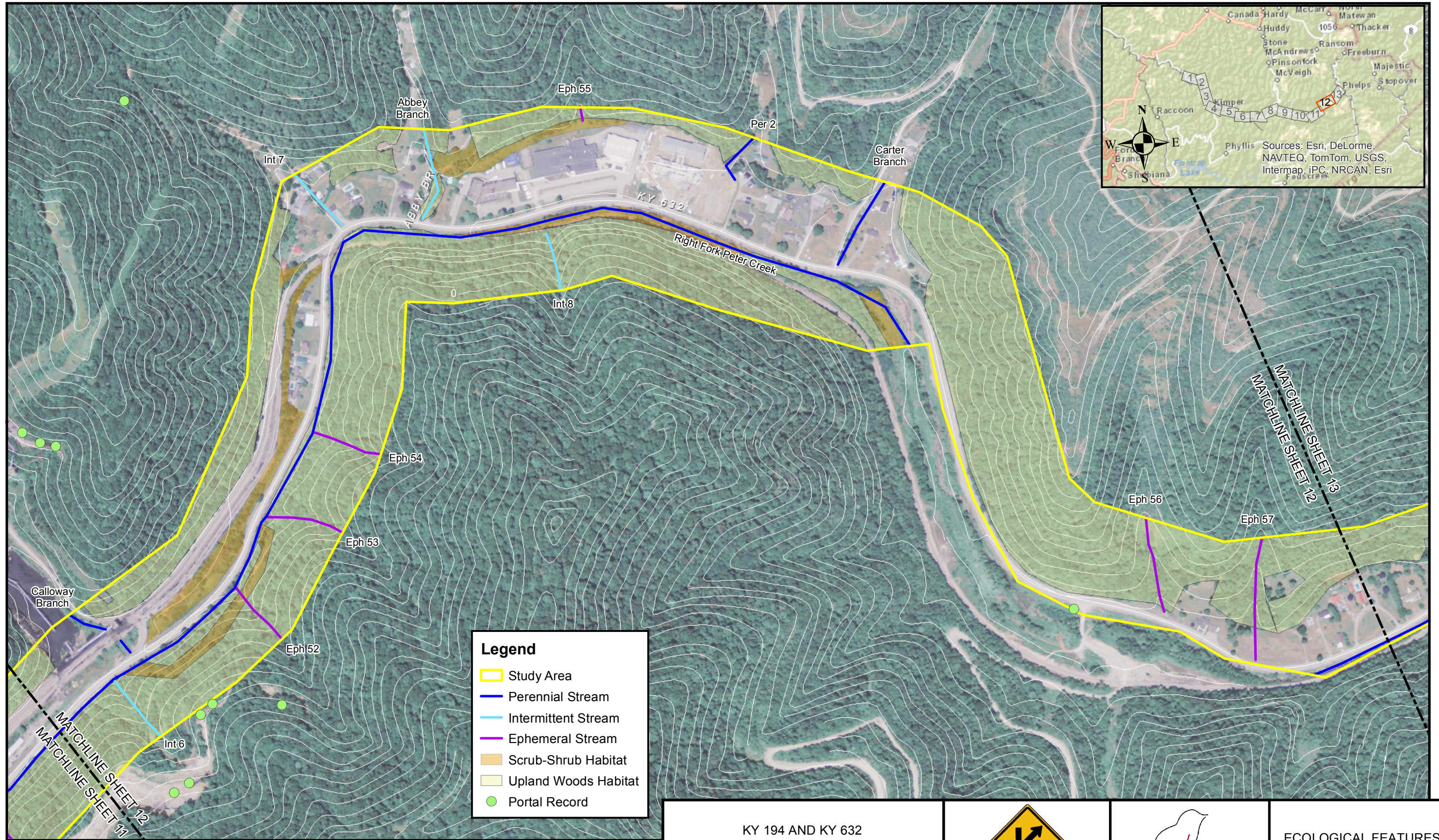
KY 194 AND KY 632
IMPROVEMENT PLANNING STUDY
PIKE COUNTY, KENTUCKY

REVISED DATE: 05-01-14

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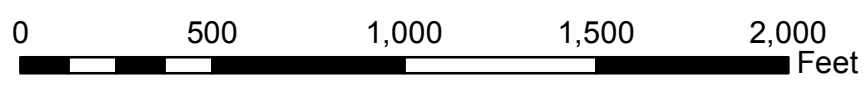


ECOLOGICAL FEATURES
MAP





Legend

- ▭ Study Area
- ▭ Perennial Stream
- ▭ Intermittent Stream
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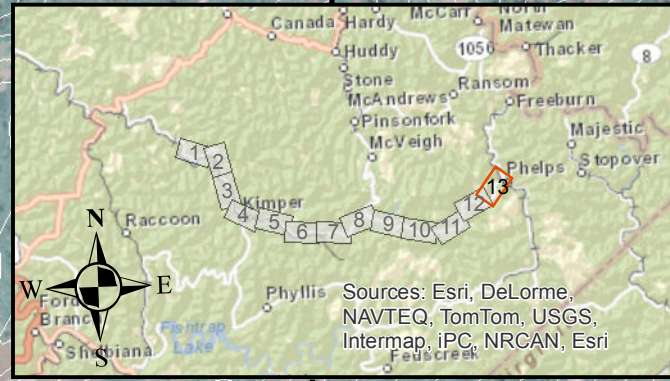
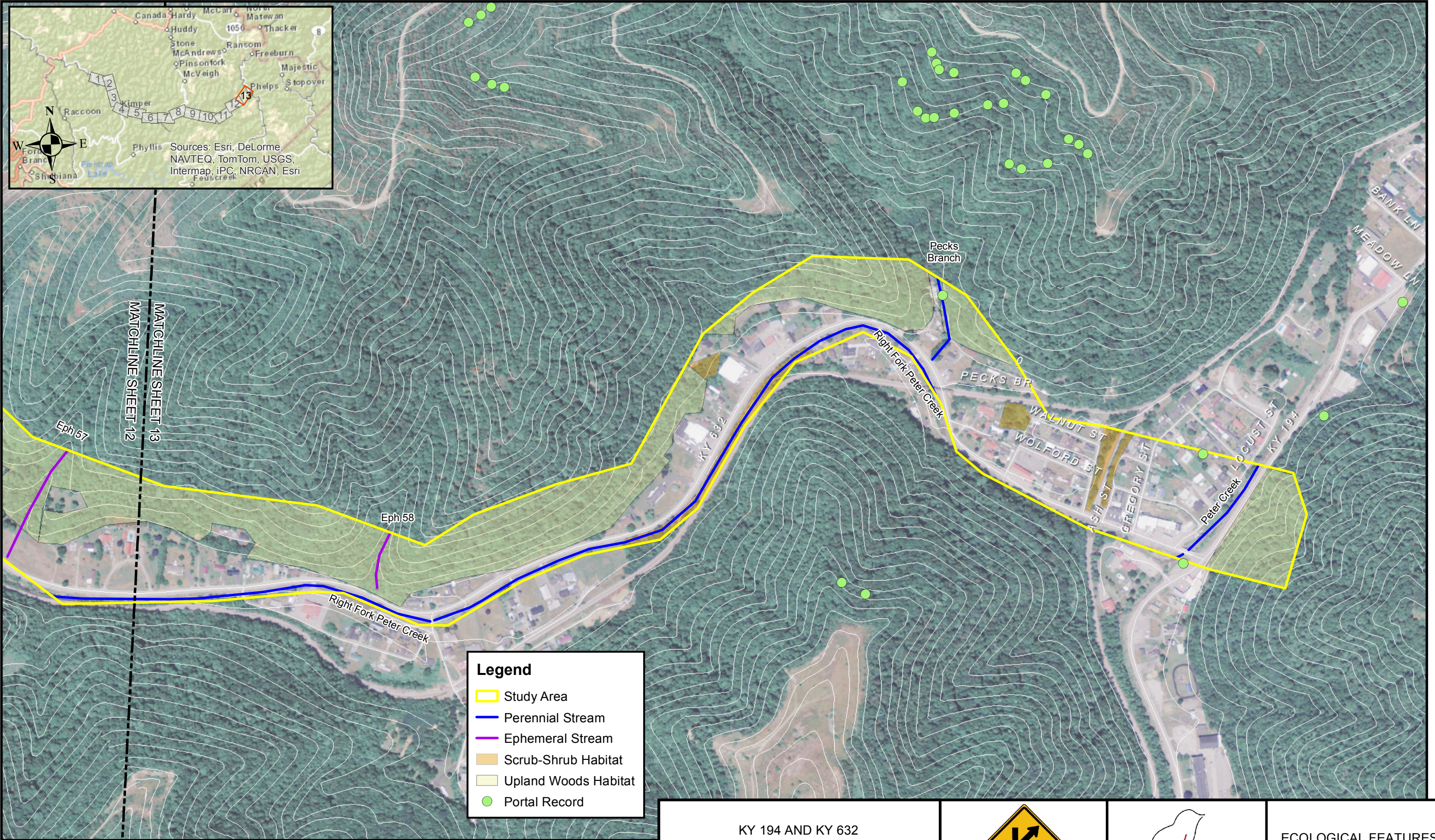


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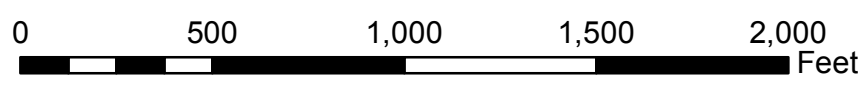
KY 194 AND KY 632 IMPROVEMENT PLANNING STUDY PIKE COUNTY, KENTUCKY			ECOLOGICAL FEATURES MAP
REVISED DATE: 05-01-14 DRAWN BY: EDB/LAD	FIGURE 2 SHEET 12 of 13		

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Legend

- Study Area
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**KY 194 AND KY 632
IMPROVEMENT PLANNING STUDY
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**ECOLOGICAL FEATURES
MAP**

FIGURE 2
SHEET 13 of 13