

**KY 30 Overview
Jackson and Owsley Counties
Item Number: 10-279.50**

Table of Contents

Topography and Geology.....	1
Topography	1
Geology.....	1
Soils	2
Water Quality	5
Channel Work.....	6
Floodplain Encroachment	7
Wetlands.....	7
Flora and Fauna.....	9
Threatened and Endangered Species.....	9
Ecosystem Effects	10
Natural Areas.....	11
4(f) Involvement	11
6(f) Involvement	11
Alternate Descriptions.....	12
Comments and Coordination.....	12
References	13
Appendices	15

Topography and Geology

Topography

This project is located in Jackson and Owsley Counties. Jackson County is located in the coalfield area of southeastern Kentucky. It is an upland area characterized by deeply entrenched streams and cliff-lined valleys. Elevations in excess of 300.0 m (1000.0 ft) prevail over most of the county. Elevations less than 300.0 m (1000.0 ft) are found only along a few of the larger streams. The quadrangle maps that apply in Jackson County are Maulden, Tyner, and Sturgeon.

Owsley County is in the eastern Kentucky coalfield. Elevations range from 195.0 m (650.0 ft) to a high of 516.0 m (1720.0 ft). The county is well dissected by normal stream erosion. The South Fork of the Kentucky River has carved a valley that is 90.0 m (300.0 ft) below the upland in the north and is more than 180.0 m (600.0 ft) below the higher adjacent mountains in the south. The quadrangle maps that apply in Owsley County are Sturgeon and Booneville.

Geology

The overview area contains three (3) geologic formations. These formations are:

- Alluvium. This formation consists of sand, silt, clay and gravel intermixed. It is 0-6.0 m (0-20.0 ft) thick. This formation is found along some of the streams in the project area, such as Sturgeon Creek and Buck Creek.
- Breathitt Formation. This formation consists of sandstone, siltstone, shale, and coal. It ranges from 30.0 m (100.0 ft) to greater than 202.5 m (675.0 ft) thick. This formation is found in the majority of the project area. This formation contains several important coal seams, such as the Manchester coal bed and the Gray Hawk coal bed. Instability of thick sequences of shale and siltstone of the Breathitt Formation is a factor affecting construction projects. Steepening of slopes by artificial cuts may cause landslides, particularly when the rock units are saturated with water.
- Breathitt and Lee Formation. This formation consists of sandstone, shale, and coal. This formation can be as much as 135.0 m (450.0 ft) thick. This formation is found at the end of the project near Tyner. The formation has a sandstone layer in some areas.

In the Booneville Quadrangle, coal is the principal mineral resource. The chief economic coal beds are the Jellico, Upper Elkhorn Number 3, the Amburgy coal zones, and the Copland coal bed. Oil and natural gas have been produced in small quantities

from many wells in the quadrangle. Selected shale from the Breathitt Formation may have potential use as material for brick, tile, and lightweight aggregate.

In the Sturgeon Quadrangle, coal is the principal mineral resource. Oil and gas have been produced in small quantities from many wells in this quadrangle at depths ranging from about 300.0 m (1000.0 ft) to 390.0 m (1300.0 ft). The principal oil fields are the Sturgeon Creek field centered roughly on Mummie and the Ida May field near the northeast corner of the quadrangle extending north. Most of wells in these fields were reported as abandoned in the 1970's.

The Maulden Quadrangle has coal that is of good quality, but is generally found in thin seams. Although many coal workings and prospects have been identified on the geologic quadrangle (Lee and Jones, 1974), only a few coal beds have been commercially mined. Natural gas was produced commercially from wells along Sexton Creek, but nothing in the project area. Resistant sandstone in the lower part of the Breathitt Formation is suitable for road metal and dimension stone. Shale from the lower part of the Breathitt Formation could be used to make good lightweight aggregate.

Within the Tyner Quadrangle small amounts of sandstone aggregate, coal, oil, and gas have been produced. The coal is of good quality, but is generally too thin to be commercially produced. Commercial quantities of natural gas have not been found in this area, but there have been wells that produced enough for domestic use.

Soils

The project crosses two (2) soil associations, the Shelocta-Gilpin and the Gilpin-Shelocta-Rayne. The Shelocta-Gilpin soil association has deep and moderately deep, well-drained, steep to gently sloping soils that have a loamy subsoil. This association is found on long hillsides and ridgetops. The Gilpin-Shelocta-Rayne soil association has moderately deep and deep, well-drained, steep to gently sloping soils that have a loamy subsoil. This association is found on hillsides and ridges. In addition to the soil associations, there are several mapping units and complexes found within the project area. They are as follows:

- Allegheny Variant silt loam, 2 to 6 percent slopes. This soil is deep and well-drained. It is on stream terraces along major streams. Also included are small areas of soils that are moderately well-drained and somewhat poorly drained. The permeability of is moderate and the available water capacity is high for this soil. Depth to bedrock is 1.0 m (3.3 ft) to 1.5 m (5.0 ft). This soil is well suited to most urban uses and is a prime farmland soil.

- Allegheny Variant silt loam, 6 to 20 percent slopes. This soil is deep and well-drained. It is on stream terraces. Small areas are found along Sturgeon Creek in eastern Jackson County. Hard sandstone bedrock is below the subsoil and ranges from 1.0 m (3.3 ft) to 1.5 m (5.0 ft). The permeability of this soil is moderate and the available water capacity is high. In most areas, this soil has a limited potential for urban use because of moderately steep slopes. This soil is a highly erodible soil.
- Bethesda-Fairpoint complex, steep, benched. The soils in this complex are deep and well-drained. They formed from soil and geologic material disturbed as a result of strip mining. These soils are mostly on narrow benches and slopes where steep hillsides have been contour mined; however, other mined areas are included. The slopes are as much as 70 percent. The permeability of the complex is slow and the available water capacity is low. The shrink-swell potential of the soil is moderate. These soils have severe limitations for most urban use because of steep slopes, moderately slow permeability, differential settling, and slippage. This is a highly erodible soil.
- Gilpin silt loam, 6 to 12 percent slopes. This soil is moderately deep and well-drained. The permeability is moderate and the available water capacity is moderate. The depth to bedrock is greater than 0.9 m (3.0 ft). This soil is strongly acid to extremely acid throughout except where lime has been added. Most limitations for urban use are moderate; however, slope and depth to bedrock are major concerns. This soil is a highly erodible soil.
- Gilpin-Rayne silt loams, 2 to 6 percent slopes. The soils in this complex are well-drained, moderately deep and deep. Permeability is moderate and the available water capacity is moderate. The depth to bedrock ranges from 0.5 m (1.7 ft) to 1.0 m (3.3 ft). The soils in this complex are suitable for some urban uses. Depth to bedrock and impervious layers is a limitation that good design can help overcome. This is a prime farmland soil.
- Gilpin-Rayne-Sequoia silt loams, 12 to 25 percent. These soils are well-drained, steep and moderately steep. For the Gilpin and Rayne soils the permeability is moderate, the available water capacity ranges from moderate to high, and the depth to bedrock ranges from 0.9 m (3.0 ft). The Sequoia soil has a permeability that is moderately slow and an available water capacity that is moderate. The shrink-swell potential is moderate. The soils in this complex are poorly suited to urban use.

because of the steep slopes and in places, depth to bedrock. This is a highly erodible soil.

- Grigsby fine sandy loam, 0 to 3 percent slopes. This soil is deep, well-drained and frequently flooded. Hard sandstone bedrock is below the subsoil depth of 1.5 m (5.0 ft). The permeability is moderate or moderately rapid and the available water capacity is high. This soil is subject to frequent flooding and is poorly suited to most urban uses because of the flooding hazard. This is a prime farmland soil.
- Grigsby-Orrville Variant complex, 0 to 3 percent slopes. The soils in this complex are deep, well-drained and somewhat poorly drained. They are on narrow floodplains. The Grigsby soil has a permeability that is moderate or moderately rapid and an available water capacity that is high. The Orrville Variant has a permeability that is moderate and an available water capacity that is high. The Orrville Variant in the winter and early spring is saturated below a depth of 0.3 to 0.8 m (1.0 to 2.5 ft). These soils are subject to frequent flooding and are poorly suited to urban uses. This is a prime farmland soil.
- Riney-Allegheny complex, 4 to 12 percent slopes. The soils in this complex are deep and well-drained. The permeability of the Riney soil is moderately rapid and the available water capacity is high. The Allegheny soil has a permeability that is moderate and an available water capacity that is high. These soils are suited to most urban uses, but slope and seepage are moderate limitations.
- Rowdy silt loam, 0 to 4 percent slopes. This soil is deep and well-drained, but occasionally flooded. It is on low stream terraces and alluvial fans along major streams and their tributaries throughout the project area. The permeability of this soil is moderate and the available water capacity is high. In most areas, this soil is poorly suited to urban uses because of the hazard of flooding and the wet spots.
- Shelocta-Gilpin channery silt loams, steep. The soils in this complex are deep and moderately deep, and they are well-drained. The permeability of this Shelocta soil is moderate and the available water capacity is high. The Gilpin soil has a moderate permeability and the available water capacity is moderate. They are not suited to urban uses because of the steep slopes, but are suited as habitat for forest species of wildlife. This complex is found in the majority of the project area. This complex contains highly erodible soils.
- Steinsburg and Gilpin soils and Rock outcrop, steep. This undifferentiated group consists of moderately deep, well-drained soils and Rock outcrop. Steinsburg soil

makes up about 35 percent of the map unit, Gilpin soil about 25 percent, Rock outcrop about 12 percent, and included soils about 28 percent. Rock outcrop occurs randomly throughout the map unit as small isolated areas of bedrock and discontinuous cliffs below the shoulder slope. The Steinsburg soil has bedrock below the substratum at 0.8 m (2.8 ft), has a permeability that is moderately rapid and an available water capacity that is low. The Gilpin soil has permeability and an available water capacity that is moderate. Depth to bedrock for the Gilpin soil ranges from 0.5 to 1.0 m (1.7 to 3.3 ft). These soils are poorly suited to urban use because of steep slopes and moderate depth to bedrock. This is another complex that is found in the majority of the project area. This complex consists of highly erodible soils.

Water Quality

The topographic quadrangles for the project indicate there are numerous streams in the project's corridor. The main streams in the area with the largest watersheds are Sturgeon Creek at the beginning of the project and Little Sturgeon Creek near the middle of the project corridor. At the end of the corridor, outside of the corridor's limits, is the South Fork of the Kentucky River. The only stream from the project's corridor that drains into the South Fork of the Kentucky River is Buck Creek.

In the corridor, the named tributaries of Sturgeon Creek that contribute drainage to this stream are Herd Fork, Rocky Branch, and Wilfred's Fork. All of these streams appear to have good habitat for macroinvertebrates and fish. Sturgeon Creek appears to have a wide, well-defined floodplain throughout most of the project corridor. In some areas the riparian zone provides a dense canopy that shades the entire stream width. Sturgeon Creek is considered to have a Class 1 Botanical Resource corridor character from river mile 13.7 to 15.6 in Owsley County (Kentucky Division of Water and the National Park Service, 1992).

Little Sturgeon Creek, like Sturgeon Creek, has a well-defined floodplain. In some areas, this floodplain has been cleared and used for growing crops or as livestock pasture or for residential dwellings. This stream has numerous tributaries, which are mostly first order streams. The tributaries include: Hartsock Branch, Rowlette Branch, Beals Fork, Wilson Fork, and some unnamed tributaries. All of these tributaries appear to have a defined floodplain and, for the most part, good riparian zones. All of these streams have the potential to support fish and macroinvertebrate populations.

Buck Creek appears to be a second order stream. There are sections of Buck Creek where the floodplain is well-defined and then there are sections where the stream channel has been constricted between hillsides with steep slopes. This stream, like the previously discussed streams, appears to have habitat that would be conducive to supporting fish and macroinvertebrate populations.

Bruce McKinney with the Kentucky Natural Resources Environmental Protection Cabinet-Division of Water (KNREPC-DOW), Groundwater Branch, identified no wellhead protection areas within the corridors. There are numerous domestic use water wells in the corridor. Most of the wells are concentrated around the community of Travellers Rest. The rest are spread throughout the project corridor.

According to the Availability of Ground Water in Bell, Clay, Jackson, Knox, Laurel, Leslie, McCreary, Owsley, Rockcastle, and Whitley Counties, Kentucky, in the project there are two (2) geologic formations that are important to the hydrology of the area. The Breathitt Formation yields water from sandstone, shale, and coal. Joints and openings along bedding planes supply most of the water to wells. Drilled wells in the project area that are in the valley bottoms are adequate for a minimum domestic supply (380 liters per day or 100 gallons per day) and some are adequate for a modern domestic supply (more than 1900 lpd or 500 gpd). A few springs supply sufficient quantities of water for domestic use. The chemical character of the water is highly variable. Most of the wells are moderately hard and contain noticeable amounts of iron. Salty water is found in a few drilled wells.

Sandstone is the principal aquifer of the Lee Formation, but shale yields water to some wells and coal to a few. Joints and openings along bedding planes, best developed in sandstone, supply most of the water to wells. Most of the wells drilled in the valleys are adequate for a modern domestic supply. Nearly all the wells in the valleys are adequate for a minimum domestic supply. A few springs supply sufficient quantities of water for a domestic use. Water from most of the wells is soft or moderately hard and contains noticeable amounts of iron.

Channel Work

The need for any channel changes will be determined by which alternate is chosen and where it is located relative to the stream. At the very least, a culvert or bridge will be needed to cross the area streams.

Floodplain Encroachment

Several streams within the project corridor have floodplain areas (Appendix B). Sturgeon Creek appears to have a wide, well-defined floodplain throughout most of the project corridor. Little Sturgeon Creek also has a well-defined floodplain. In some areas, this floodplain has been cleared and used for growing crops, livestock pasture or residential dwellings. This stream has numerous tributaries, which are mostly first order streams including Hartsock Branch, Rowlette Branch, Beals Fork, Wilson Fork, and some unnamed tributaries. All of these tributaries appear to have a defined floodplain and, for the most part, good riparian zones. Buck Creek, which appears to be a second order stream, has sections where the floodplain is well defined and then there are sections where the stream channel has been constricted between hillsides with steep slopes.

According to the Flood Insurance Rate Map (FIRM) provided by the Federal Emergency Management Agency (FEMA), a floodplain exists along Sturgeon Creek, Little Sturgeon Creek, and the South Fork of the Kentucky River in Owsley County. The floodplains along Sturgeon Creek and Little Sturgeon Creek are designated as areas of 100 year flood their entire reach in Owsley County. Designated 100 year floodplains are also on the South Fork of the Kentucky River and the Booneville area. In Jackson County, the floodplains along Sturgeon Creek in the project area are considered Special Flood Hazard Areas.

Wetlands

NWI maps for the Tyner, Maulden, Sturgeon, and Booneville Quadrangles were reviewed to determine the presence of wetlands in the corridor. NWI maps are not always accurate and may not indicate all of the wetlands that exist in the area. More in-depth field work is needed to determine if these wetlands as well as others exist in the project area. Refer to the exhibit maps for locations of these wetlands.

The Tyner Quadrangle has an extensive riverine wetland along Herd Fork. The NWI map categorized this wetland as riverine, lower perennial, unconsolidated bottom, permanently flooded. This wetland extends the length of Herd Fork in the project area. The Maulden Quadrangle indicates there is another riverine, lower perennial, unconsolidated bottom, permanently flooded wetland along Maulden Branch. This may or may not be in the project area.

The Sturgeon Quadrangle NWI map indicates numerous wetlands in the overview corridor. Most of these wetlands are riverine and follow the numerous streams

in the area. Sturgeon Creek has a riverine, lower perennial, unconsolidated bottom, permanently flooded wetland following much of its reach. Near Elias, located on the broad floodplain of Sturgeon Creek is a palustrine, forested, broad-leaved deciduous, temporarily flooded wetland. In this same area, are two (2), palustrine, scrub-shrub, broad-leaved deciduous wetlands. One of these scrub-shrub wetlands has a water regime of being temporarily flooded and the other is seasonally flooded and modified by a dike or an impoundment.

Another riverine wetland on the Sturgeon Quadrangle follows the course of Little Sturgeon Creek. North of Travellers Rest, this portion of the creek has a riverine, lower perennial, unconsolidated bottom, permanently flooded wetland along its reach. South of Travellers Rest, can be found several palustrine, forested, broad-leaved deciduous, temporarily flooded wetlands. There is also one palustrine, emergent, persistent, and semi-permanently flooded wetland. This wetland has been impounded or otherwise modified by man. Farther up the stream's reach and the riverine wetland changes characteristics and becomes a riverine, intermittent, streambed that is seasonally flooded.

Rowlette Branch has a riverine, lower perennial, unconsolidated bottom, permanently flooded wetland. There are several scrub-shrub wetlands that can be found in Rowlette Branch's floodplain. Both of the unnamed tributaries that connect to Rowlette Branch have riverine, lower perennial, unconsolidated bottom, permanently flooded wetlands along their reaches.

The Sturgeon Quadrangle NWI map also indicates a wetland north of Elias along KY 30. This wetland is palustrine, emergent, persistent, and semi-permanently flooded. This wetland has been impounded or otherwise modified by man. Another palustrine, palustrine, emergent, persistent, and semi-permanently flooded is northeast of Travellers Rest.

The Booneville Quadrangle indicates riverine, lower perennial, unconsolidated bottom, permanently flooded wetlands along Buck Creek. There are two (2) palustrine, emergent, persistent, semi-permanently flooded wetlands that have been excavated west of Booneville. These palustrine wetlands are located on a reclaimed mine site. There are three (3) possible scrub-shrub wetlands located in "The Sag" area near Booneville.

Direct impacts for this project could be more than the area threshold. If mitigation is justified, coordination with the Army Corps of Engineers (COE) will be

necessary. The COE may require a Nationwide Permit #14. Under a Nationwide #14 any non-tidal waters of 0.2 ha (0.5 ac) or tidal and adjacent waters of 0.8 ha (0.3 ac) and 200 linear feet (60 linear meters) will require notifying the COE and mitigation. Impacts greater than those for a Nationwide Permit #14 will require an Individual Permit. Wetland encroachment with any placement of fill material will require cooperation with the KNREPC-DOW and may require a 401 Permit.

There are numerous ponds in the project area. They all serve as surface water retention basins, as habitat for amphibians and as a water resource for wildlife in the area. According to Section 401 of the Clean Water Act, the loss of a pond is not something that requires mitigation. Ponds do play a valuable role in the lifecycle of wildlife and the hydrologic cycle. Replacement should be considered for the ponds taken by this project.

Flora and Fauna

The project corridor is an area disturbed by humans. Most of the land uses are forested, agricultural, open and residential areas. The forested areas are second growth deciduous species. Some of the forests are on steep hillsides where development is almost impossible. The agricultural areas consist of cropland, livestock pasture and developed areas for housing livestock, grain, and farm equipment. Some of the open areas were abandoned fields or house sites. A few open areas were in early successional stage transition. The residences consist of manicured lawns with introduced and native species. Where wetlands exist, hydrophytic species would be expected. Further field work is necessary to determine the existence of any sensitive communities or species.

Wildlife species that would be expected in the area would be species adapted to the encroachment of man. All of the species would be common to the area. Man has definitely impacted habitats in the project area. Forests have been cleared and wetlands drained. There are no sensitive habitats in the area and probably no sensitive species. Further field work is necessary to determine the types of species utilizing the area, their habitats, and whether they are threatened or endangered.

Threatened and Endangered Species

Information from the Kentucky Department of Fish and Wildlife Resources (KDFWR) does not indicate federally listed endangered or threatened species occurring within the project impact area. Information from the U. S. Fish and Wildlife Service (USFWS) indicates there are no federally listed or proposed threatened or endangered

species occurring within the project area. Information from the Kentucky State Nature Preserves Commission (KSNPC) states there is the possibility of two (2) KSNPC special concern species occurring with the project area. Kentucky lady's slipper (*Cypripedium kentuckiense*) and the Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) are both special concern species that have been identified within the project's corridor. KSNPC also states the Indiana bat (*Myotis sodalis*) is known to occur in Jackson County. KSNPC indicated Sturgeon Creek supports a high diversity of native mussels species.

Further field work will be necessary to determine if these species exist in the project's corridor and within the right-of-way of the alternates.

Ecosystem Effects

Construction of the project will initially eliminate all flora and fauna in the project's path. Because this area has already been impacted to a large degree, the environmental changes may not be adverse impacts. If forested areas are taken, this could limit habitat for small mammals and any larger game animals that might inhabit the area. Breaking up large tracts of forested areas could result in habitat fragments and decreases in wildlife populations.

The streams in the area could be impacted with the construction of this project. The necessity of any channel changes will depend on the alternate and its location relative to the stream. All that may be necessary is a culvert or small bridge to cross the area streams. Placement of either of these may not cause any adverse effects to the streams. There may be an increase in nonpoint source discharges to the streams with the construction of the road.

Impacts to wetland areas will depend on the placement of the road. Obviously, any wetland area that is paved over will be a total loss. Some wetlands may not be directly impacted. If a wetland functions to retain floodwaters, the loss of that wetland could increase the likelihood of flood damage to areas that have not previously experienced such damage. The loss of a wetland could have an impact on how groundwater is filtered in the area of impact.

If it is necessary to remove a pond from the project area, the effects should not have an adverse impact on the environment, as a whole. There will be a loss of sediment retention capabilities and a loss of habitat for some wildlife. A careful study will determine if there are any endangered or threatened species associated with these ponds.

In some areas, the completed road may increase the amount of nonpoint source pollution that could find its way into the groundwater. With careful management the nonpoint source pollution should be filtered out of surface waters before they reach the groundwater aquifers.

Careful review of the quadrangles did not indicate any caves on the project area. Further field work will be necessary to determine if there are caves in the project's corridor and what role they play in the ecosystem.

Permits

Federal and State laws require the Kentucky Transportation Cabinet to obtain the appropriate permits and certifications prior to construction activities that involve the waters of the United States, such as rivers, lakes, streams, or wetlands. Permits that will be necessary if there are stream or jurisdictional wetland impacts anticipated, are the COE's Nationwide Permit #14 under Section 404 of the Clean Water Act and a 401 Water Quality Certification from the KNREPC-DOW.

Under Section 404, a permit is needed to discharge dredged or fill material into any waters of the United States. A 401 certification is needed before conducting any activity that may result in a discharge of pollutant into the waters of the United States. These permits will be necessary prior to any activity that obstructs or alters any of the waters of the United States, including navigable water and wetlands.

If there are floodplain impacts, there could be permits required from the COE, the DOW, and any local governing body. Permit requirements may depend on the type of floodplain involved and the impacts to the floodplain.

Natural Areas

According to information provided by KSNPC and KDFWR, there are no registered natural areas in the vicinity of the proposed project.

4(f) Involvement

There are no Wild and Scenic Rivers or Outstanding Resource Waters in the project area. There are no exemplary natural communities that are monitored by KSNPC in the project area. The project area does not contain any recreational areas or wildlife and waterfowl refuges.

6(f) Involvement

There are no outdoor recreational land and water areas or facilities established from grants-in-aid from the Land and Water Conservation Fund Act (LWCF).

Alternate Descriptions

Alternates are currently being developed.

Comments and Coordination

The USFWS, KDFWR, and KSNPC were contacted for information on protected federal and state listed species that may be affected by the project. Information was also requested from KDFWR and KSNPC concerning critical habitat areas and monitored natural areas in the project area.

The NREPC-DOW was contacted for water quality impacts and groundwater information. The Data Processing Branch of DOW provided the National Wetland Inventory maps for the project quadrangles. The maps along with data from the United States Department of Agricultural-Natural Resource Conservation Service (USDA-NRCS) were studied to locate possible wetlands. The COE provided information on any necessary permits. The U.S. Geological Survey (USGS) provided the project's topographic quadrangles and the geologic quadrangles. FEMA provided the Flood Insurance Rate Maps (FIRM) for Jackson and Owsley Counties, KY.

Copies of all letters of correspondence with regulatory agencies can be found in the Appendices section of this report.

References

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Appendices

Letters of correspondence with state and federal agencies.

- Division of Water-Ecological Support Section (Mike Mills)
- Division of Water-Groundwater Branch (Joseph Ray)
- Division of Water-Groundwater Branch (Bruce McKinney)
- Kentucky Department of Fish and Wildlife Resources
- U.S. Fish and Wildlife Service
- U.S. Department of Agriculture Natural Resources Conservation Service
- Kentucky State Nature Preserves Commission

JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
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RECEIVED

JUL 17 2001

PALMER
ENGINEERING

July 13, 2001

Devetta Hill, Biologist
Palmer Engineering
273 Shoppers Drive
PO Box 747
Winchester, Kentucky 40392-0747

RE: Item No. 10-279.50: KY 30, Owsley and Jackson counties

Dear Ms. Hill:

The Water Quality Branch has reviewed your request for information about the referenced area. There are no Wild Rivers within the proposed corridor. However, Sturgeon Creek from RMI 33.4 to RMI 4.0 is listed as an Exceptional Water. This designation provides extra protection under Kentucky Surface Water Standards. Sturgeon Creek is crossed by KY 30 at approximately RMI 25.4. Wetland field delineation should be done prior to final site selection, to avoid impact to wetland areas. If wetlands cannot be avoided, any wetland losses must be mitigated. I have enclosed biological data for Sturgeon Creek. We have no data on other streams within the corridor.

For future reference, information on Special Use Waters can be found on the Division of Water web site (<http://water.nr.state.ky.us/dow/dwhome.htm>). Click on **Topics and Programs within the Division**, then scroll down and click on **Special Use Waters**. This list is frequently updated as new streams are added.

If you have any questions or need further information on biological communities, Exceptional Waters or wetlands, please contact me by phone (502/564-3410) or e-mail (mike.mills@mail.state.ky.us).

Sincerely,

A handwritten signature in cursive script that reads "Michael R. Mills".

Michael R. Mills, Supervisor
Ecological Support Section

C: file



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Subject: [Fwd: Baseline ecological assessment- two projects]

Date: Thu, 02 Aug 2001 10:28:21 -0400

From: Melanie Gabbard <mgabbard@palmernet.com>

To: Devetta Hill <dhill@palmernet.com>

Subject: Baseline ecological assessment- two projects

Date: Thu, 2 Aug 2001 10:15:40 -0400

From: Joe.Ray@mail.state.ky.us

To: palmer@palmernet.com

August 2, 2001

Devetta Hill:

The proposed Clay County Industrial Connector is located in the sandstone, siltstone, shale, coal, and minor limestone concretions of the Breathitt Formation (Taylor, 1978: USGS GQ-1485). No significant karst hydrology is expected in these less soluble rocks. At least six domestic water wells are shown in our database within the project area. These wells are largely supplied by water-bearing fractures in the bedrock and are recharged locally. Potentially affected wells should be monitored before and after construction activities in order to document and mitigate any water-quality impacts.

The KY 30, Item No. 10-279.50 project in Owsley and Jackson counties is located in the shale, siltstone, and sandstone of the Breathitt Formation (Weir, 1978: USGS GQ-1479). No significant karst hydrology is expected in these less soluble rocks. At least 15 domestic water wells and 2 monitoring wells are shown in our database within the project area. These wells are largely supplied by water-bearing fractures in the bedrock and are recharged locally. Potentially affected wells should be monitored before and after construction activities in order to document and mitigate any water-quality impacts.

Sincerely,

Joseph A. Ray, P.G.
Groundwater Hydrologist III
Groundwater Branch
Division of Water

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Davetta,

I copied the parts of the quads that were indicated on the maps that you sent. None of the quads has a public water supply wellhead protection area according to our database. The wells that are shown are domestic use water wells.

If you need any further information please feel free to contact me.

Thanks



Bruce McKinney

FISH & WILDLIFE COMMISSION

Mike Boatwright, Paducah
Tom Baker, Bowling Green, Chairman
Allen K. Gailor, Louisville
Charles E. Bale, Hodgenville
Dr. James R. Rich, Taylor Mill
Ben Frank Brown, Richmond
Doug Hensley, Hazard
Dr. Robert C. Webb, Grayson
David H. Godby, Somerset



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF FISH AND WILDLIFE RESOURCES
C. THOMAS BENNETT, COMMISSIONER

July 16, 2001

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JUL 20 2001

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ENGINEERING**

Devita Hill
Palmer Engineering
273 Shoppers Drive
P.O. Box 747
Winchester, KY 40392-0747

Re: Threatened/Endangered species review: Improvements to KY 30 from Levi, Owsley County to Tyner, Jackson County, Kentucky

Dear Ms. Hill:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has received your request for the above-referenced information. The Kentucky Fish and Wildlife Information System indicates that no federally threatened or endangered species are known to occur in the Booneville, Maulder, Sturgeon, and Tyner 7.5 minute USGS quadrangle(s). Please be aware that our database system is a dynamic one that only represents our current knowledge of the various species distributions.

The KDFWR recommends the following for any portion of the project that will be instream or near streams:

1. Development/excavation during a low flow period to minimize disturbance;
2. Proper placement of erosion control structures below highly disturbed areas to minimize entry of silt to the stream;
3. Replanting of disturbed areas after construction, including stream banks and right-of-ways, with native vegetation for soil stabilization and enhancement of fish and wildlife populations;
4. Return all disturbed instream habitat to its original condition upon completion of construction in the area, and;
5. Preservation of tree canopy overhanging the stream.

I hope this information will be helpful to you. Should you require additional information, please contact me at (502) 564-7109, ext. 367.

Sincerely,

A handwritten signature in black ink, appearing to read "Marla T. Barbour".

Marla T. Barbour
Fisheries Biologist III

cc: Environmental Section File





United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

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August 8, 2001

Ms. Devetta Hill
Biologist
Palmer Engineering
273 Shoppers Drive
P.O. Box 747
Winchester, Kentucky 40392-0747

Re: FWS #01-3088

Dear Ms. Hill:

Thank you for your letter and enclosures of July 12, 2001, regarding the Kentucky Transportation Cabinet's (KTC) proposed Kentucky Highway 30 Improvements Project in Jackson and Owsley counties, Kentucky. The KTC proposes to improve Kentucky Highway 30 from northwest of Levi to southeast of Tyner as shown on the attachments to your correspondence. Fish and Wildlife Service (Service) personnel have reviewed the information submitted and we offer the following comments.

Information available to the Service indicates that wetlands may exist in the vicinity of the proposed project. This information is provided for your convenience. Our wetlands determination has been made in the absence of a field inspection and does not constitute a wetlands delineation for the purposes of Section 404 of the Clean Water Act. The Corps of Engineers should be contacted regarding the presence of regulatory wetlands and the requirements of wetlands protection statutes.

We note that the proposed project may require stream crossings. Perennial streams should be bridged rather than culverted. Further, we recommend that silt barriers be put in place when working adjacent to all streams to prevent runoff of sediment. If a stream crossing is necessary, it should be accomplished during low flow periods and the streambanks reseeded with native vegetation beneficial to wildlife immediately following completion of the stream crossing.

According to our records, the federally endangered Indiana bat (*Myotis sodalis*) may occur in the project impact area. A qualified biologist should assess potential impacts and determine if the proposed project may affect the species. A finding of "may affect" could require initiation of formal consultation. Please submit a copy of your assessment and findings to this office for review and concurrence.

Thank you for the opportunity to comment on this action. If you have any questions regarding the information which we have provided, please contact Wally Brines of my staff at 931/528-6481, extension 222.

Sincerely,

A handwritten signature in black ink, reading "Lee Barclay". The signature is written in a cursive style with a large, prominent "L" and "B".

Lee A. Barclay, Ph.D.
Field Supervisor

**UNITED STATES
DEPARTMENT OF
AGRICULTURE**

**NATURAL RESOURCES
CONSERVATION
SERVICE**

**P. O. BOX 172
MCKEE, KY
40447-0172**

July 19, 2001

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JUL 23 2001**

**PALMER
ENGINEERING**

Palmer Engineering
273 Shoppers Drive
P. O. Box 747
Winchester, KY 40392-0747

Subject: KY 30
Jackson and Owsley Counties, Item No. 10-279.50

Attn: Devetta Hill

Natural Resources Conservation Service (NRCS) policy does not allow us to make acreage determinations for requests such as yours. However, other soil-related information pertaining to the Jackson County portion of the project is provided below.

The published Soil Survey for Jackson and Owsley Counties does not identify any hydric soils in Jackson County. Furthermore, none of the soils identified in the soil survey are listed as having hydric inclusions.

The prime farmland soils impacted by the project include:

- AvB**—Allegheny Variant silt loam, 2 to 6 percent slopes.
- GpB**—Gilpin-Rayne silt loams, 2 to 6 percent slopes.
- Gs**—Grigsby fine sandy loam, 0 to 3 percent slopes, frequently flooded
- Gv**—Grigsby-Orville Variant complex, 0 to 3 percent slopes, frequently flooded

The highly erodible soils impacted by the project are:

- AvD**—Allegheny Variant silt loam, 6 to 20 percent slopes
- BfF**—Bethesda-Fairpoint complex, steep, benched
- GnC**—Gilpin silt loam 6 to 12 percent slopes
- GrD**—Gilpin-Rayne-Sequoia silt loams, 12 to 25 percent slopes
- SgF**—Shelocta-Gilpin channery silt loams, steep
- SrF**—Steinsburg and Gilpin soils and Rock outcrop, steep

Please find enclosed a copy of the published Soil Survey for Jackson and Owsley Counties.

If you need additional soils information, contact me at the McKee Field Office.

Respectfully,

Chuck Gibson

Chuck Gibson,
District Conservationist

Enclosure

DONALD S. DOTT, JR.
DIRECTOR



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
KENTUCKY STATE NATURE PRESERVES COMMISSION

801 SCHENKEL LANE
FRANKFORT, KENTUCKY 40601-1403
(502) 573-2886 VOICE
(502) 573-2355 FAX

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**PALMER
ENGINEERING**

July 31, 2001

Devetta Hill
Palmer Engineering
273 Shoppers Drive
Winchester, Ky. 40392

Data Request 02-14

Dear Ms. Hill:

This letter is in response to your data request of July 20, 2001 for the Ky 30, Jackson and Owsley Counties project. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the Kentucky State Nature Preserves Commission occur in the area specified on the Maulden, Tyner, Booneville, and Sturgeon, Ky. USGS quadrangles. Based on our most current information, we have determined that ten occurrences of the plants or animals and no occurrences of the exemplary natural communities that are monitored by KSNPC are reported as occurring in the specified area. A data report is attached to this response.

Cypripedium kentuckiense (Kentucky Lady's-slipper, KSNPC special concern) occurs within the search area and may be impacted by proposed construction work. Kentucky Lady's slipper is a globally rare plant and the US Fish and Wildlife Service lists it as a Species of Management Concern. Because of the species' sensitive status, its location is not given. Please contact KSNPC for more information.

Corynorhinus rafinesquii (Rafinesque's big-eared bat, KSNPC special concern) has been found within your project area. You should also be aware that *Myotis sodalis* (Indiana myotis, federally endangered, KSNPC endangered) is known to occur in Jackson county. Suitable roost and winter sites for bats include sandstone and limestone caves, rockhouses, cliffines, and abandoned mines. Summer foraging habitats include upland forests, bottomland forests and riparian corridors. In order to avoid impacts to bats, a thorough survey should be conducted.



AN EQUAL OPPORTUNITY EMPLOYER M/F/D

Data Request 02-14
July 31, 2001
Page 2

The survey should include a search for potential roost and winter sites, and a mistnetting census at numerous points within the proposed corridor, particularly in preferred summer habitat.

Sturgeon Creek, the Middle Fork of the Kentucky River, and the South Fork of the Kentucky River all support a high diversity of native mussel species, and many individual populations of these species. These species are sensitive to increased turbidity, sediment, and other adverse influences on water quality, which can all be caused by construction activities. Any disturbance of the watershed should be avoided to assure high water quality and to avoid impacting rare aquatic species.

I would like to take this opportunity to remind you of the terms of the data request license, which you agreed upon in order to submit your request. The license agreement states "Data and data products received from the Kentucky State Nature Preserves Commission, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Kentucky State Nature Preserves Commission." The exact location of plants, animals, and natural communities, if released by the Kentucky State Nature Preserves Commission, may not be released in any document or correspondence. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Kentucky State Nature Preserves Commission's Data Manager (801 Schenkel Lane, Frankfort, KY, 40601. Phone: (502) 573-2886).

Please note that the quantity and quality of data collected by the Kentucky Natural Heritage Program are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed, and new plants and animals are still being discovered. For these reasons, the Kentucky Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

Please find enclosed a copy of the published Soil Survey for Jackson and Owsley Counties.

If you need additional soils information, contact me at the McKee Field Office.

Respectfully,

Chuck Gibson

Chuck Gibson,
District Conservationist

Enclosure

DONALD S. DOTT, JR.
DIRECTOR



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
KENTUCKY STATE NATURE PRESERVES COMMISSION

801 SCHENKEL LANE
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AUG 01 2001

**PALMER
ENGINEERING**

July 31, 2001

Devetta Hill
Palmer Engineering
273 Shoppers Drive
Winchester, Ky. 40392

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Data Request 02-14
July 31, 2001
Page 3

If you have any questions or if I can be of further assistance, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Sara Hines".

Sara Hines
Data Manager

ALC/SGH

Enclosures: Data Report and Interpretation Key
Endangered, Threatened, and Special Concern Plants and Animals of Kentucky
Plants and Animals Presumed Extinct or Extirpated from Kentucky