

## **Appendix VIII– Protected Species Assessment**



Protected Species Assessment  
Project Inspector  
Rock Hill, York Co., SC  
S&ME Project No. 4261-19-077

**PREPARED FOR:**

**South Carolina Department of Commerce  
1201 Main Street, Suite 1600  
Columbia, SC 29201-3200**

**PREPARED BY:**

**S&ME, Inc.  
134 Suber Road  
Columbia, SC 29210**

**October 16, 2019**



October 16, 2019

South Carolina Department of Commerce  
1201 Main Street, Suite 1600  
Columbia, South Carolina 20201-3200

Attention: Mr. Daniel Young  
[dyoung@sccommerce.com](mailto:dyoung@sccommerce.com)

Reference: **Protected Species Assessment  
Project Inspector**  
Rock Hill, York County, South Carolina  
S&ME Project No. 4261-19-077

Dear Mr. Young:

S&ME, Inc. (S&ME) is pleased to submit our Protected Species Assessment for the above-referenced project located in York County, South Carolina. This work was performed in general accordance with S&ME Proposal Number 42-1900437, dated May 31, 2019 and our Agreement for Services Form (AS-071).

S&ME appreciates the opportunity to be of service to you by performing this Protected Species Assessment for this project. Please contact us at (803) 561-9024 with questions regarding this report or if you require additional information.

Sincerely,

**S&ME, Inc.**

A handwritten signature in cursive script that reads "Chris Handley".

Chris Handley  
Biologist  
[chandley@smeinc.com](mailto:chandley@smeinc.com)

A handwritten signature in cursive script that reads "Chris Daves".

Chris Daves, P.W.S.  
Senior Scientist  
[cdaves@smeinc.com](mailto:cdaves@smeinc.com)



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## 1.0 Project Background

This Protected Species Assessment has been conducted to assess the potential for the presence of protected species on the site in preparation for proposed development. The site is being considered for a potential training facility for the Carolina Panthers as well as a mixed-use development (office, commercial, entertainment, and open space). A new interchange at Interstate 77 (I-77) and connecting road to Paragon Way are also proposed.

S&ME will be requesting the technical assistance (in the form of a written Response Letter) of the U.S. Fish and Wildlife Service (USFWS) as to whether site development would likely result in “take” as defined under Section 9 of the Endangered Species Act (ESA). The approximate 354.5-acre site consists of all or portions of multiple York County tax parcels. The site is located east and west of I-77, north of a Norfolk Southern Railroad right-of-way, south of Eden Terrace, east of Mt. Gallant Road, and west of Paragon Way approximately three miles northeast of Rock Hill, York County, South Carolina as shown on **Exhibits 1-5** in **Appendix I**.

## 2.0 Site and Habitat Descriptions

The site is located in eastern York County within the Southern Outer Piedmont ecoregion of South Carolina. The site consists of mixed hardwoods, oak-hickory forestland, utility easements, and aquatic features (wetlands and streams). The properties adjacent to the site consist of forestland, single-family residences, I-77, a railroad, and commercial and light industrial facilities.

Please refer to **Exhibits 3/3A** and the site photographs in **Appendix I** for depictions of the predominant habitat types located on the site.

### 2.1 Mixed Hardwoods

The majority of the site consisted of mixed hardwood forestland (Photographs 1-6). Dominant overstory species observed included white oak (*Quercus alba*), northern red oak (*Q. rubra*), southern red oak (*Q. falcata*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), tulip poplar (*Liriodendron tulipifera*), mockernut hickory (*Carya tomentosa*), and shagbark hickory (*C. ovata*). Understory species included those of the canopy dominants and eastern red cedar (*Juniperus virginiana*), eastern redbud (*Cercis canadensis*), eastern hophornbeam (*Ostrya virginiana*), sourwood (*Oxydendrum arboreum*), silverthorn (*Elaeagnus pungens*), autumn olive (*E. umbellata*), Chinese privet (*Ligustrum sinense*), ironwood (*Carpinus caroliniana*), eastern hophornbeam (*Ostrya virginiana*), buckeye (*Aesculus* spp.), and black cherry (*Prunus serotina*). Ground cover and woody vine species included muscadine (*Vitis rotundifolia*), Japanese honeysuckle (*Lonicera japonica*), common greenbrier (*Smilax rotundifolia*), Christmas fern (*Polystichum acrostichoides*), and Japanese stiltgrass (*Microstegium vimineum*).

### 2.2 Oak-Hickory Forestland

The northwestern portion of the site consisted of oak-hickory forestland (Photographs 7-8) along a hillside. Dominant overstory species observed included northern red oak and mockernut hickory. The understory was sparse and included sporadic sapling and shrubs of eastern red cedar and silverthorn. Minimal groundcover and woody vine species were observed.



## 2.3 Natural Pine Stands

Small pockets of natural pine stands were observed on the northern portion of the site (Photograph 9). Dominant overstory species included loblolly pine (*Pinus taeda*). The pines were approximately 60 feet in height, 25 years in age, and averaged eight to 14 inches in diameter-at-breast-height (DBH). The understory consisted of loblolly pine saplings, eastern red cedar, silverthorn, and common greenbrier.

## 2.4 Open Fields

Two open fields comprising roughly 2.5 acres each were observed on the southern and central portions of the site (Photographs 10-11). Scattered eastern red cedar trees were observed throughout each field. Herbaceous species included tall fescue (*Festuca arundinacea*), common vetch (*Vicia sativa*), common plantain (*Plantago major*), old-field toadflax (*Nuttallanthus canadensis*), rabbit tobacco (*Pseudognaphalium obtusifolium*), broomsedge (*Andropogon virginicus*), clover (*Trifolium* spp.), and wild onion (*Allium vineale*). The field fringes were dominated by autumn olive, silverthorn, and eastern red cedar.

## 2.5 Utility Easements/Rights-of-Way

Powerline utility easements and roadside rights-of-way were observed on the eastern, southern, and western portions of the site (Photographs 12-19). Species observed included saplings and shrubs of loblolly pine, sweetgum, silverthorn, autumn olive, eastern red cedar, winged-elm (*Ulmus alata*), and honey locust (*Gleditsia triacanthos*). The herbaceous species stratum included bear's foot (*Smilax uvedalia*), southern crownbeard (*Verbesina occidentalis*), tall fescue, broomsedge, Japanese honeysuckle, dog fennel (*Eupatorium capillifolium*), plume grass (*Saccharum alopecuroidum*), lespedeza (*Lespedeza* spp.), bull nettle (*Solanum carolinense*), late boneset (*Eupatorium serotinum*), saw-tooth greenbrier (*Smilax bona-nox*), blackberry (*Rubus* spp.), goldenrod (*Solidago* spp.), common partridge pea (*Chamaecrista fasciculata*), pokeweed (*Phytolacca americana*), fish-on-a-pole (*Chasmanthium latifolium*), Brazilian verbena (*Verbena brasiliensis*), foxtail (*Setaria* spp.), bearded beggar ticks (*Bidens aristosa*), fleabane (*Erigeron* spp.), and wooly mullein (*Verbascum thapsus*).

## 2.6 Aquatic Features

Four herbaceous wetlands (Photographs 21, 23, 24) were observed on the site within the powerline utility easement on the eastern portion of the site, west of I-77 (Wetland B, D, E, and H). Species observed included common rush (*Juncus effusus*), sedge (*Carex* spp.), Japanese stiltgrass, and knotweed (*Persicaria* spp.).

A former pond bottom (Wetland G), which has naturalized back to a wetland was observed on the northern portion of the site (Photograph 26). Species observed were similar to that of the herbaceous wetlands.

The remaining wetlands are characterized as forested wetlands (Wetlands A, C, F, I, and J) and are scattered across the site (Photographs 20, 22, 25). Wetland A is considered a headwater, forested wetland while Wetlands C, F, I, and J are characterized as riparian forested wetlands. Overstory species observed included tulip poplar, red maple, sweetgum, and green ash (*Fraxinus pennsylvanica*). Understory species consisted of those of the canopy dominants and silverthorn. Groundcover and woody vines included Japanese stiltgrass, common rush, common greenbrier, and poison ivy (*Toxicodendron radicans*).



Ten (10) tributaries were observed across the site (Photographs 27-30). The tributaries were seasonal/intermittent with varying widths between three to six feet. Most of the channels were dry with small pools or sporadic pockets of water. The substrates observed included gravel, cobbles, sands, silts, and clay. Species observed along the tributaries included black willow (*Salix nigra*), tulip poplar, sweetgum, red maple, box elder (*Acer negundo*), mockernut hickory, red mulberry (*Morus rubra*), ironwood, eastern hophornbeam, and black walnut (*Juglans nigra*). Understory species consisted of the canopy dominants and flowering dogwood (*Cornus florida*), cottonwood (*Populus deltoides*), eastern red cedar, buckeye, silverthorn, and Chinese privet. Groundcover and woody vine species included common greenbrier, Japanese honeysuckle, Christmas fern, and Japanese stiltgrass.

### 3.0 Methodology

S&ME personnel reviewed the South Carolina Department of Natural Resources (SCDNR) and the USFWS websites to determine those species that are currently listed as federally protected (threatened or endangered) in York County. The results of this search, including identified protected species and preferred habitat served as the basis of the field review and are presented in **Table 4-1**.

SCDNR maintains a database of elements of occurrence for protected species in the state of South Carolina. A search of this database did not reveal the known presence of federally protected species (occurrences) on or immediately adjacent to the site. Supporting information was researched for the purpose of identifying soil types, vegetative communities, and possible drainage features in the study area. The supporting information reviewed included aerial photography, topographic quadrangle maps, soil survey sheets, land use information, and data from the National Wetlands Inventory.

S&ME Biologists Chris Daves, P.W.S., Chris Handley, and Amy Moore performed field reviews on April 23, 25, May 24, July 1, September 3, and 25, 2019. The information obtained from supporting documentation was integrated with the field review to identify potential areas of preferred habitat of protected species. Portions of the site that matched descriptions of preferred habitat for protected species listed in **Table 4-1** were considered to be potential habitat for the respective protected species. These areas were subsequently field reviewed to confirm the presence/absence of the respective species.

### 4.0 Federally Protected Species

Descriptions of the species and their respective federal status are identified in **Table 4-1** and in **Appendix II**. The SCDNR and USFWS websites identified the following federally listed species for York County:



Table 4-1 Federally Protected Flora and Fauna Summary

Species	Listing	Habitat
Bald Eagle <i>Haliaeetus leucocephalus</i>	BGEPA	Coastlines, rivers, large lakes which provide adequate feeding grounds.
Northern Long-Eared Bat <i>Myotis septentrionalis</i>	T	Caves and abandoned mines (winter hibernacula). In summer, underneath bark or in cavities or crevices of trees with loose or exfoliating bark, with diameter at breast height (DBH) greater than three inches.
Carolina Heelsplitter <i>Lasmigona decorata</i>	E	Variety of substrates or river and creek beds, including mud, clay, sand, gravel, and cobble/bolder/bedrock; Catawba, Savannah, Saluda, and Pee Dee River systems.
Dwarf-Flowered Heartleaf <i>Hexastylis naniflora</i>	T	Bluffs, hillsides, ravines and boggy areas adjacent to streams in Piedmont hardwood forests; Prefers Pacolet, Madison, or Musella soils.
Little Amphianthus/Pool Sprite <i>Amphianthus pusillus</i>	T	Granite outcrops with shallow pools in full sunlight.
Schweinitz's Sunflower <i>Helianthus schweinitzii</i>	E	Pastures of full sun, upland woods clearings/openings, and thickets of heavy clay-based soils.

*E* = Endangered*T* = Threatened

BGEPA = Bald and Golden Eagle Protection Act

#### 4.1 Bald Eagle

##### BIOLOGICAL DETERMINATION: NO EFFECT

This large raptor has characteristic adult plumage consisting of a white head and tail with a dark brown body. Juvenile eagles are completely dark brown and do not fully develop the majestic white head and tail until the fifth or sixth year. Adults average about three feet from head to tail, weigh approximately 10 to 12 pounds and have a wingspread that can reach seven feet. Generally, female bald eagles are larger than the males. The typical nest is constructed of large sticks and is lined with soft materials such as pine needles and grasses. The nests are very large, measuring up to six feet across and weighing hundreds of pounds. Nesting and feeding sites are generally in the vicinity of large bodies of open water (coastlines, rivers, large lakes).

The site does not contain suitable nesting habitat for the bald eagle. There are no coastlines, rivers, or large lakes on or immediately adjacent to the site considered suitable habitat for the bald eagle. No nests or individuals were observed during the field survey. Accordingly, future development of the site is not expected to impact this species.



## 4.2 Northern Long-Eared Bat

BIOLOGICAL DETERMINATION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT

Northern long-eared bat is a medium-sized bat approximately three to 3.7 inches, with a wingspan of nine to 10 inches. Fur color ranges from medium to dark brown on the back and tawny to pale brown on the underside. It is distinguished by its long ears in relation to other bats in the genus *Myotis*, which means mouse-eared. Northern long-eared bats use caves and abandoned mines as winter hibernacula. In summer, the bat will roost in small colonies or alone underneath bark or in cavities or crevices of both live trees and dead trees. The USFWS considers any live or dead tree with loose or exfoliating bark with a DBH greater than three inches to be potential roosting habitat.

The site does not contain suitable winter hibernacula habitat as there were no caves or abandoned mines; however, suitable summer roosting habitat for the northern long-eared bat was observed on the site within the mixed hardwood and pine habitats. These areas included mature trees with a DBH greater than three inches. Snags were also observed on the site.

S&ME contacted Ms. Morgan Wolf, with the South Carolina USFWS Field Office to determine if northern long-eared bat had been previously located in the vicinity of the site. S&ME requested information regarding known winter hibernacula sites within 0.25 mile of the site or summer roosting habitat within 150 feet of known occupied, maternity roosting areas. Ms. Wolf responded to S&ME's inquiry on October 7, 2019, via e-mail and stated "after reviewing our records, there are no known maternity roosts nor hibernacula located near the project area. Therefore, project activities are exempt under the 4(d) rule for the species." (**Appendix III**). In addition, S&ME consulted SCDNR data regarding previous data within a one-mile radius of the site. No element occurrences of the northern long-eared bat were documented within a mile of the site.

At this time, the scheduling of tree clearing activities for this project has yet to be determined. Based on our understanding of current guidance, if clearing is conducted outside the June 1 to July 31 window (approximate pup season), potential impacts to the northern long-eared bat can be reduced.

Based on these findings, tree clearing on the site "may affect, but is not likely to adversely affect" the northern long-eared bat. The proposed project appears to meet the criteria for the 4(d) rule of the ESA; thus, any associated take is therefore exempt.

## 4.3 Carolina Heelsplitter

BIOLOGICAL DETERMINATION: NO EFFECT

The Carolina heelsplitter is a medium-sized freshwater mussel with an ovate, trapezoid-shaped shell. The shell is yellowish, greenish-brown to dark brown in color. Younger specimen's shells have greenish-brown or black rays. The inside of the shell (nacre) is pearly-white to bluish-white. The umbo area is orange or a mottle-orange. The heelsplitter has been documented in Catawba, Pee Dee River, Saluda, and Savannah River basins. The Carolina heelsplitter has been recorded in a variety of substrates, including mud, clay, sand, gravel, cobble, bolder, and bedrock. A majority of these areas are without significant silt accumulations and are along stable, well-shaded stream banks. Habitat is severely affected by siltation.



Although streams were located on the site, the streams were classified as seasonal/intermittent in nature, which is not considered ideal habitat for the Carolina heelsplitter. Adjacent properties surrounding the site included residential development, commercial and light industrial development, I-77, and a railroad. The streams on the site contained large amounts of siltation and areas of severe erosion were observed along the banks.

S&ME subcontracted with Alderman Environmental Services, Inc. to conduct a mussel survey (**Appendix III**) of the site. The survey was conducted on May 9, 2019. The report stated that the tributaries on-site were mostly very poor-quality mussel habitat. No living Carolina heelsplitter or vacated shells were observed during the survey. The report stated "No recent occurrences of the Carolina heelsplitter are documented in Manchester Creek or the Catawba River. Since no freshwater mussels were documented within the subject streams, and these streams are extremely small (upper limits of known Carolina Heelsplitter occupied streams), the Biological Conclusion is No Effect."

S&ME also consulted the USFWS Information for Planning and Conversation (IPaC) website to request an Official Species list for the site (**Appendix II**). No known critical habitat for Carolina heelsplitter was listed on or directly downstream of the site.

Based on this information and the Carolina heelsplitter mussel survey by Alderman Environmental Services, Inc. stating that the tributaries on-site were considered poor-quality mussel habitat (no mussels documented) and no individual Carolina heelsplitters were located during the survey, a "no effect" determination is applicable. Accordingly, future development of the site is not expected to impact this species.

#### 4.4 Dwarf Flowered Heartleaf

##### BIOLOGICAL DETERMINATION: NO EFFECT

Dwarf-flowered heartleaf is a perennial, evergreen herb. Its leathery leaves are round or heart-shaped. Light green reticulation often occurs along the leaf veins. Flowering occurs from mid-March to late May/early June. Its beige to dark brown flowers are the smallest in the *Hexastylis* genus. Flowers are solitary and grow on a short stalk extending from the base of the leaves. The habitat of the dwarf-flowered heartleaf includes acidic, sandy loam soils along bluffs, hillsides, ravines, and boggy areas adjacent to streams in hardwood forests of the Piedmont. The species appears to prefer north-facing slopes. More specifically, it is endemic to the upper Piedmont of North and South Carolina. Soil type (Pacolet, Madison, and Musella soils) appears to be the most important habitat requirement.

Review of the U.S. Department of Agriculture – National Resources Conservation Service (USDA-NRCS) soils information (**Exhibit 4**) indicated the site is underlain by Brewback Fine Sandy Loam, Cecil Sandy Clay Loam, Cecil Clay Loam, Chewacla Loam, Mecklenburg-Wynott Complex, Urban Land Brewback Complex, Wynott-Wilkes Complex and are not typically associated with dwarf-flowered heartleaf. Small areas of Pacolet Sandy Clay Loam, Pacolet Clay Loam, which are preferred soil types are located on the southeastern and eastern portions of the site. These areas are very small and are developed with a railroad easement (southern soil polygon) and roadway easement (eastern soil polygon). SCDNR had no occurrence records for this species within the vicinity of the site. The site visits (April 23 and 25, May 24) were conducted during the flowering period (mid-March through late May/early June) the field surveys did not identify dwarf-flowered heartleaf or other species within the *Hexastylis*



genus, within the exception of arrow-leaf (*Hexastylis arifolia*). Accordingly, future development of the site is not expected to impact this species.

#### 4.5 Little Amphianthus/Pool Sprite

BIOLOGICAL DETERMINATION: NO EFFECT

The little amphianthus/pool sprite is a very small, delicate, aquatic annual plant that measures approximately two to four inches in height. It is greenish to purple in color. The plant has only one set of leaves that grow 0.4-inch-long growing from the stem base. The leaves are very narrow and thin and are completely submerged under water. Thin branches grow from the submerged plant stem and have a pair of broad leaves. These leaves are rounded and are approximately 0.16 to 0.32 inch in width, green, and have purple edges. They float around a single white flower. Flowering occurs between March and April and fruiting occurs in April through May. The fruits are small capsules and contain numerous banana-shaped dark brown seeds. Habitat consists of shallow pools in full sunlight on granite outcrops. Shading, drainage, and siltation have significant impacts on the plant.

The site does not contain suitable habitat for the little amphianthus/pool sprite. No granite outcrops with shallow pools were observed. Accordingly, future development of the site is not expected to impact this species.

#### 4.6 Schweinitz's Sunflower

BIOLOGICAL DETERMINATION: NO EFFECT

The Schweinitz's sunflower is a perennial, non-woody flower in the Aster family. It contains carrot-like roots and sunflower-like yellow disk flowers. It measures approximately 23-79 inches in height. Stems possess opposite leaves which are alternately arranged above and oppositely arranged below. Leaves are lance-shaped, approximately 2.4-7 inches in length. The leaves are very rough, sandpaper-textured above, and hairy below. Leaf edges are typically toothed or smooth and are generally turned under. Flowers are yellow with dense, round heads and have an outer fringe of rays approximately one inch long. Flowering occurs between August and October. The plant portion above the ground dies in the winter and reemerges in the spring. Habitat consists of pastures with full sunlight, upland woodland clearings/openings, and thickets consisting of heavy clay-based soils.

The site contains potentially suitable habitat for the Schweinitz's sunflower within the open fields on the northern and southern portions of the site and the powerline utility easements on the east, southern, and western portions of the site.

According to the USDA NRCS, the site is underlain by Brewback Fine Sandy Loam, Cecil Sandy Clay Loam, Cecil Clay Loam, Chewacla Loam, Mecklenburg-Wynott Complex, Urban Land Brewback Complex, Wynott-Wilkes Complex, Pacolet Sandy Clay Loam, and Pacolet Clay Loam. These soils are acidic (pH range from 4.5 to 6.5) and not conducive to this species. The site visits (September 3 and 25, 2019) were conducted during the flowering period (late August through October), and no specimens of Schweinitz's sunflower were observed. Species with yellow flowers observed during the site visits included goldenrod, bear's foot, southern crownbeard, and bearded beggar ticks. No species in the *Helianthus* genus were observed within power line utility easements, roadsides, or open fields on the site. SCDNR did not have occurrences within the immediate vicinity of the site. Accordingly, future development of the site is not expected to impact this species.





## 5.0 Qualifications

The field survey was led by Mr. Chris Daves of S&ME. Mr. Daves is a biologist and natural resources project manager with over 18 years of experience in environmental consulting. Mr. Daves is proficient in conducting wetland delineations, environmental permitting activities, and habitat assessments, including protected species surveys. He is a Professional Wetland Scientist (PWS) and holds a B.S. degree in Biology from Wofford College and a Master's degree in Earth & Environmental Resources Management from the University of South Carolina.

Mr. Chris Handley holds a B.S. degree in Forest Resource Management and a Master's degree in Forest Resources (GIS Emphasis) from Clemson University. Mr. Handley has over six years of experience in environmental consulting and GIS mapping and is proficient in conducting wetland delineations and habitat assessments, including protected species surveys.

Ms. Amy Moore received a B.S. degree in Environmental Science from Queens University of Charlotte and has four years of experience in environmental consulting including wetland delineations, GIS mapping, permitting, and protected species surveys.

## 6.0 Summary and Conclusions

Based on the literature review, habitat assessment, and pedestrian field review of the site, the following conclusions are given regarding federally listed species in York County:

- ◆ The site does not provide suitable habitat for bald eagle, Carolina heelsplitter, and pool sprite; the proposed project will have no effect on these species.
- ◆ Potential suitable habitat for dwarf-flowered heartleaf was observed on the southern and southeastern portions of the site in preferred soils near tributaries. Field surveys were conducted during the flowering season and the species was not observed; the proposed project will have no effect on this species.
- ◆ Potential suitable habitat for Schweinitz's sunflower within the open fields, roadsides, and powerline utility easements was observed on the site. Field surveys were conducted during the flowering season and the species was not observed; the proposed project will have no effect on this species.
- ◆ Suitable summer roosting habitat for the northern long-eared bat was observed on the site within the mixed hardwood and pine habitats. Per the USFWS, there were no known maternity roosts or hibernacula located near the site and thus project activities would be exempt under the 4(d) rule for this species. A determination of "may affect, but not likely to adversely affect" for this species is applicable.

This Protected Species Assessment will not be forwarded to the USFWS at this time; however, it will be included in a future Individual Permit application to the U.S. Army Corps of Engineers for stream and wetland impacts.



## 7.0 References

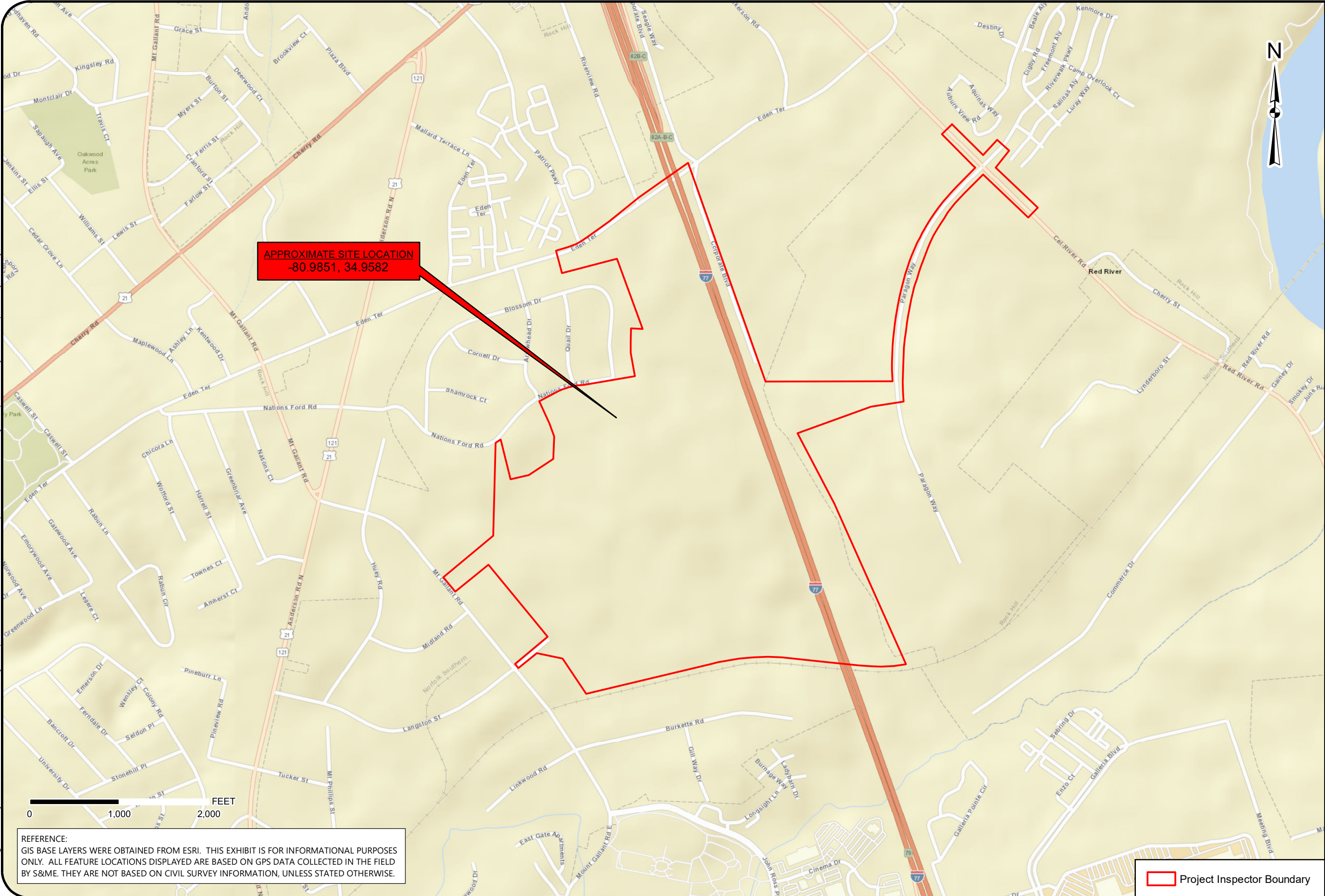
The following sources were referenced during the course of this assessment:

- ◆ Alderman Environmental Services, Inc. May 9, 2019. Mussel Survey Within Headwater Tributaries of Manchester Creek, York County, South Carolina.
- ◆ SCDNR. 2019. South Carolina's Bald Eagles – Nest Locations. <http://www.dnr.sc.gov/wildlife/baldeagle/locations.html>.
- ◆ SCDNR. 2019. South Carolina Rare, Threatened, and Endangered Species Inventory. <http://www.dnr.sc.gov/species/index.html>.
- ◆ USFWS. 2019. Information for Planning and Conservation. <https://ecos.fws.gov/ipac/>.
- ◆ USFWS. Morgan Wolf. October 7, 2019.
- ◆ USFWS. 2019. South Carolina List of At Risk, Candidate, Endangered, and Threatened Species. [https://www.fws.gov/charleston/pdf/Endangered/species\\_by\\_county/York\\_county.pdf](https://www.fws.gov/charleston/pdf/Endangered/species_by_county/York_county.pdf).
- ◆ USDA-NRCS Web Soil Survey. 2019. <http://websoilsurvey.nrcs.usda.gov/app/>.
- ◆ USDA-Soil Conservation Service. 1963. Soil Survey – York County, South Carolina.

## **Appendices**

## **Appendix I – Exhibits and Site Photographs**

Drawing Path: T:\Projects\2019\ENV\4261-19-077\SCDOC\Project\_Inspector\_Rock Hill\GIS\mxd\Revised Maps East and West\T&E\Project Inspector Vicinity\Exhibit.mxd plotted by chandley 10-31-2019



REFERENCE:  
GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE BASED ON GPS DATA COLLECTED IN THE FIELD BY S&ME. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



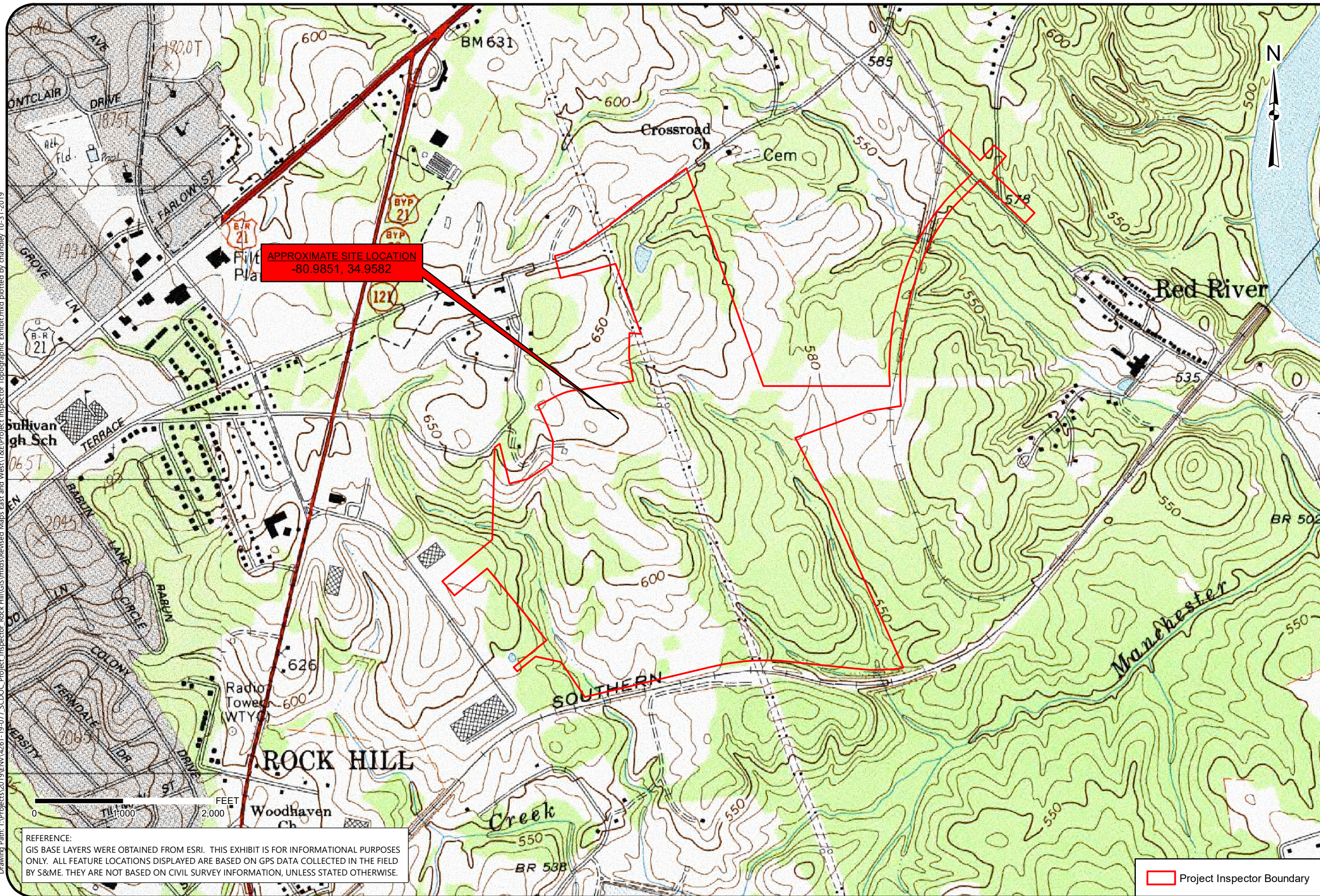
### Vicinity Exhibit

Project Inspector +/- 354.5 Acres  
Rock Hill, York County, South Carolina  
World Street Map

SCALE:  
1" = 1,000'  
DATE:  
10-16-2019  
PROJECT NUMBER  
4261-19-077  
EXHIBIT NO.



Drawing Path: T:\Projects\2019\ENV\4261-19-077\SCDOC\Project\_Inspector\_Rock Hill\GIS\mxd\Revised Maps East and West\T&E\Project\_Inspector\_Topographic Exhibit.mxd plotted by chandley 10-31-2019



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Project Inspector Boundary



### Topographic Exhibit

Project Inspector +/- 354.5 Acres  
Rock Hill, York County, South Carolina  
USGS 7.5-Minute Topo Quad Rock Hill East, SC 1968

SCALE:  
1" = 1,000'  
DATE:  
10-16-2019  
PROJECT NUMBER  
4261-19-077  
EXHIBIT NO.



**REFERENCE:**  
GIS BASE LAYERS WERE OBTAINED FROM ESRI.  
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SCALE: 1 inch = 700 feet		<b>Aerial Exhibit</b> Project Inspector +/- 354.5 Acres	EXHIBIT NO. <b>3</b>
DATE: 10-16-2019			
DRAWN BY: CCH		Rock Hill, York County, South Carolina Source: World Imagery 2017	
PROJECT NO: 4261-19-077			

Drawing Path: T:\Projects\2019\ENV\4261-19-077\_SCD\OC\_Project\_Inspector\_Rock Hill\GIS\mxds\Revised Maps East and West\T&E\Inspector T&E Aerial Exhibit.mxd plotted by chandley 10-31-2019



**REFERENCE:**  
GIS BASE LAYERS WERE OBTAINED FROM ESRI.  
PLEASE NOTE THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS EXHIBIT.



SCALE:	1 inch = 700 feet
DATE:	10-16-2019
DRAWN BY:	CCH
PROJECT NO:	4261-19-077



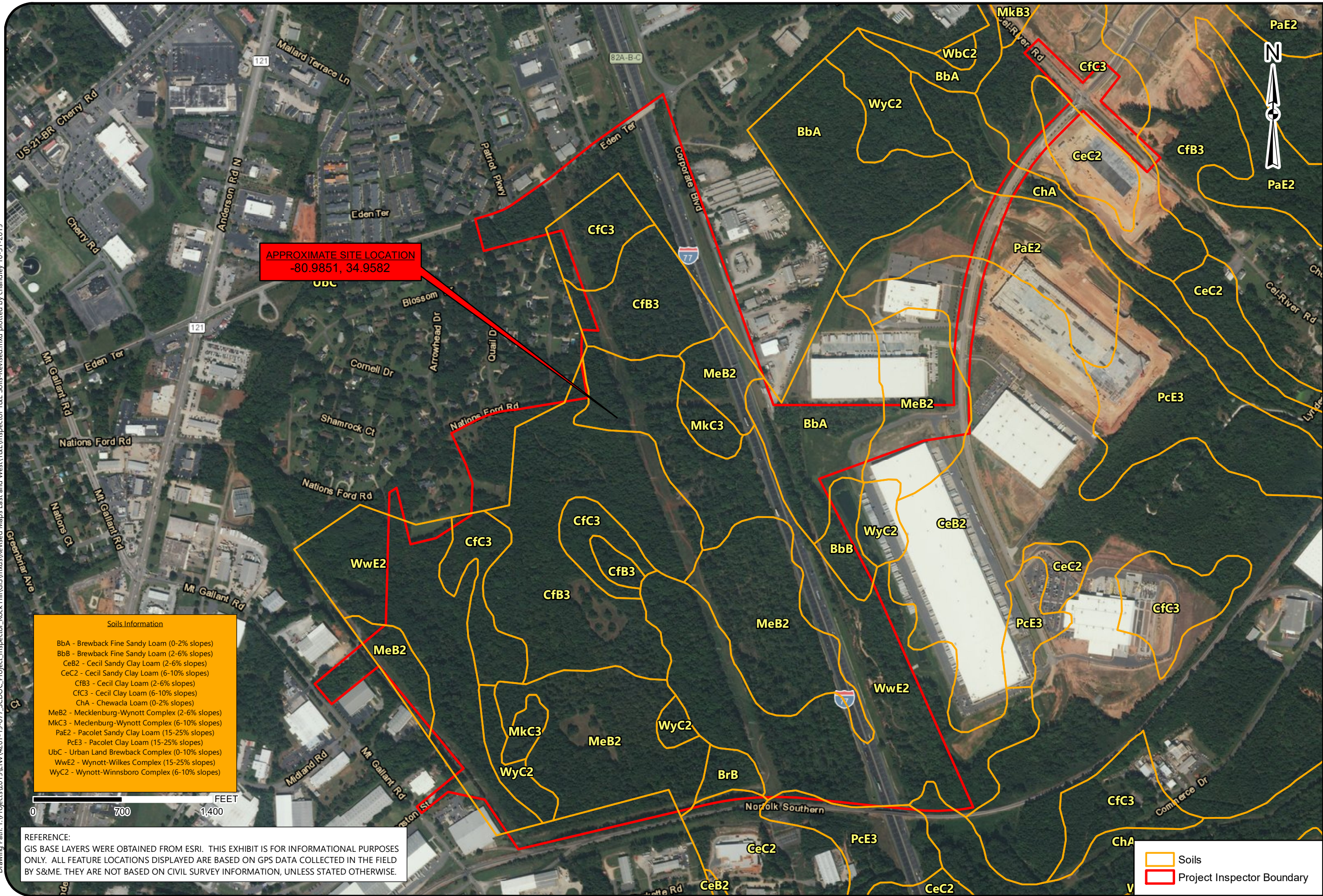
<b>Photograph Location Exhibit</b> Project Inspector +/- 354.5 Acres
Rock Hill, York County, South Carolina Source: World Imagery 2017

EXHIBIT NO.
<b>3A</b>

Drawing Path: T:\Projects\2019\ENV\4261-19-077\_SCD0C\_Project\_Inspector\_Rock Hill\GIS\mxds\Revised Maps East and West\T&E\Inspector T&E Aerial Exhibit with Photos.mxd plotted by chandley 10-31-2019



Drawing Path: T:\Projects\2019\ENV\4261-19-077\SCDOC\Project\_Inspector\_Rock Hill\GIS\mxd\Revised Maps East and West\T&E\Inspector T&E Soils-Revised.mxd plotted by chandley 10-31-2019



**Soils Information**

BbA - Brewback Fine Sandy Loam (0-2% slopes)  
BbB - Brewback Fine Sandy Loam (2-6% slopes)  
CeB2 - Cecil Sandy Clay Loam (2-6% slopes)  
CeC2 - Cecil Sandy Clay Loam (6-10% slopes)  
Cfb3 - Cecil Clay Loam (2-6% slopes)  
Cfc3 - Cecil Clay Loam (6-10% slopes)  
ChA - Chewacla Loam (0-2% slopes)  
MeB2 - Mecklenburg-Wynott Complex (2-6% slopes)  
Mkc3 - Mecklenburg-Wynott Complex (6-10% slopes)  
PaE2 - Pacolet Sandy Clay Loam (15-25% slopes)  
PcE3 - Pacolet Clay Loam (15-25% slopes)  
WwE2 - Urban Land Brewback Complex (0-10% slopes)  
Wyc2 - Wynott-Wilkes Complex (15-25% slopes)  
Wyc2 - Wynott-Winnsboro Complex (6-10% slopes)

REFERENCE:  
GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE BASED ON GPS DATA COLLECTED IN THE FIELD BY S&ME. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



## Soils Exhibit

Project Inspector +/- 354.5 Acres  
Rock Hill, York County, South Carolina  
World Imagery 2017 & SCDNR (Soils Data)

SCALE:  
1" = 700'

DATE:  
10-16-2019

PROJECT NUMBER  
4261-19-077

EXHIBIT NO.

4





### Legend:

- Development Area A (A-1, A-2)  
Practice/Training Facility, HQ,  
Sports/Entertainment Venues &  
Mixed Use Village
- Development Area B  
Office/Employment/Mixed Use
- Development Area C  
Accessory Uses/Structures,  
Infrastructure & Open Space
- Development Area D  
Mixed Use Entrance Parcel

### Notes:

- Locations and depictions of Development/Site Elements are conceptual in nature and will be finalized and adjusted during design/development.



Master Plan Zoning

09.20.2019

RZ-2.0 OVERVIEW PLAN

**POPULOUS**  
LandDesign



SCALE: NTS

DRAWN BY: CH

CHECKED BY: CD

DATE: 10-16-2019



**Site Plan**  
PROJECT INSPECTOR  
ROCK HILL, YORK COUNTY, SOUTH CAROLINA

PROJECT NO:

4261-19-077

EXHIBIT NO.





**1** Mixed hardwoods located on the eastern portion of the site (east of I-77).



**2** Mixed hardwoods located on the central portion of the site.



**3** Mixed hardwoods located on the southeastern portion of the site.



**4** Mixed hardwoods located on the eastern portion of the site, west of I-77.



**Site Photographs  
Project Inspector  
Rock Hill, York County, South Carolina**

**S&ME Project 4261-19-077**

**Taken by: CH/CD**

**Date: April-September 2019**





**5** Mixed hardwoods located on the northern portion of the site.



**6** Mixed hardwoods located on the western portion of the site.



**7** Oak-hickory forestland located on the western portion of the site.



**8** Oak-hickory forestland located on the western portion of the site.



**Site Photographs  
Project Inspector  
Rock Hill, York County, South Carolina**

S&ME Project 4261-19-077

Taken by: CH/CD

Date: April-September 2019





**9** Natural pine stand located on the northern portion of the site.



**10** Open field located on the central portion of the site.



**11** Open field located on the southern portion of the site.



**12** Power line utility easement located on the eastern portion of the site (west of I-77). In the foreground, the dominant species is southern crownbeard (*Verbesina occidentalis*).



**Site Photographs  
Project Inspector  
Rock Hill, York County, South Carolina**

S&ME Project 4261-19-077

Taken by: CH/CD

Date: April-September 2019





**13** Power line utility easement located on the eastern portion of the site (west of I-77).



**14** Power line utility easement located on the eastern portion of the site (east of I-77).



**15** I-77 ROW located on the eastern portion of the site. (east side of I-77)



**16** Power line utility easement located on the northern portion of the site.







**17** Power line utility easement located on the far northern portion of the site, just south of Eden Terrace.



**18** Power line utility easement located on the western portion of the site. In the foreground, the dominant species is southern crownbeard (*Verbesina occidentalis*).



**19** Power line utility easement located on the southern portion of the site.



**20** Wetland A located on the central portion of the site.







**21** Wetland B located on the southern portion of the site.



**22** Wetland C located on the southern portion of the site.



**23** Wetland D located on the southern portion of the site.



**24** Wetland E located on the northern portion of the site.



**Site Photographs  
Project Inspector  
Rock Hill, York County, South Carolina**

S&ME Project 4261-19-077

Taken by: CH/CD

Date: April-September 2019





**25** Wetland F located on the northern portion of the site.



**26** Wetland G (former pond bottom) located on the northern portion of the site.



**27** NWW-1 (Tributary) located on the central portion of the site.



**28** NWW-2 (Tributary) located on the northern portion of the site.







**29** NWW-4 (Tributary) located on the northern portion of the site. Overgrown with Microstegium.

**BLANK**

**31**



**30** NWW-5 (Tributary) located on the western portion of the site.

**BLANK**

**32**



**Site Photographs  
Project Inspector  
Rock Hill, York County, South Carolina**

S&ME Project 4261-19-077

Taken by: CH/CD

Date: April-September 2019

## **Appendix II – County Species Lists from USFWS and SCDNR**

## YORK COUNTY

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
<b>Amphibians</b>	None Found			
<b>Birds</b>	Bald eagle (BGEPA)	<i>Haliaeetus leucocephalus</i>	October 1-May 15	Nesting season
<b>Crustaceans</b>	Broad River spiny crayfish (ARS)	<i>Cambarus spicatus</i>	November-April	
<b>Fishes</b>	None Found			
<b>Insects</b>	Monarch butterfly (ARS)	<i>Danaus plexippus</i>	August-December	Overwinter population departs: March-April
<b>Mammals</b>	Northern long-eared bat (T)	<i>Myotis septentrionalis</i>	Year round	Winter surveys not as successful
	Tri-colored bat (ARS)	<i>Perimyotis subflavus</i>	Year round	Found in mines and caves in the winter
<b>Mollusks</b>	Carolina heelsplitter (E, CH)	<i>Lasmigona decorata</i>	March 1-September 30	Optimal survey window
<b>Plants</b>	Georgia aster (ARS*)	<i>Symphotrichum georgianum</i>	Early October-mid November	
	Little amphianthus or Pool sprite (T)	<i>Amphianthus pusillus</i>	Late March-April	
	Schweinitz's sunflower (E)	<i>Helianthus schweinitzii</i>	Late August-October	
	Wire-leaved dropseed (ARS)	<i>Sporobolus teretifolius</i>	August-September	Following fire
<b>Reptiles</b>	None Found			

\* Contact National Marine Fisheries Service (NMFS) for more information on this species.

\*\* The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species.

ARS Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.

ARS\* Species that are either former Candidate Species or are emerging conservation priority species.

BGEPA Federally protected under the Bald and Golden Eagle Protection Act

C FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species.

CH Critical Habitat

E Federally Endangered

P or P – CH Proposed for listing or critical habitat in the Federal Register

S/A Federally protected due to similarity of appearance to a listed species

T Federally Threatened

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit <https://www.dnr.sc.gov/species/index.html>.



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

South Carolina Ecological Services  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407-7558  
Phone: (843) 727-4707 Fax: (843) 727-4218  
<http://www.fws.gov/charleston/>



In Reply Refer To:

October 04, 2019

Consultation Code: 04ES1000-2020-SLI-0014

Event Code: 04ES1000-2020-E-00027

Project Name: Project Inspector

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

#### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
-

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**South Carolina Ecological Services**  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407-7558  
(843) 727-4707

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## Project Summary

Consultation Code: 04ES1000-2020-SLI-0014

Event Code: 04ES1000-2020-E-00027

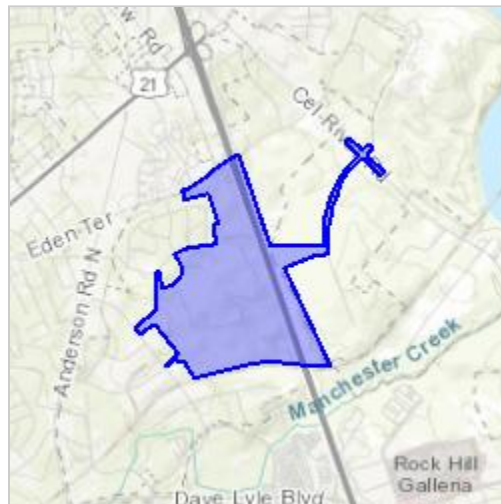
Project Name: Project Inspector

Project Type: DEVELOPMENT

Project Description: Proposed commercial economic development.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/34.958357331276616N80.98205928448292W>



Counties: York, SC

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## Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Clams

NAME	STATUS
Carolina Heelsplitter <i>Lasmigona decorata</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3534">https://ecos.fws.gov/ecp/species/3534</a>	Endangered

## Flowering Plants

NAME	STATUS
Dwarf-flowered Heartleaf <i>Hexastylis naniflora</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/2458">https://ecos.fws.gov/ecp/species/2458</a>	Threatened
Little Amphianthus <i>Amphianthus pusillus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6445">https://ecos.fws.gov/ecp/species/6445</a>	Threatened
Schweinitz's Sunflower <i>Helianthus schweinitzii</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/3849">https://ecos.fws.gov/ecp/species/3849</a>	Endangered

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## **Critical habitats**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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# Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

- 
1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

## Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the

---

FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

### **Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

### **Breeding Season (■)**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### **Survey Effort (|)**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

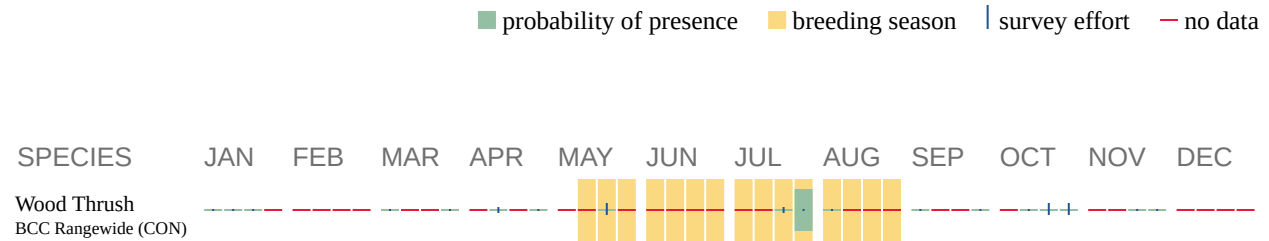
### **No Data (—)**

A week is marked as having no data if there were no survey events for that week.

### **Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

---

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

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## Rare, Threatened, and Endangered Species of South Carolina - by County

The lists below indicate what species have been reported to the Heritage Trust Program as occurring in each county. These lists are not a complete listing of what actually exists, as no complete survey of the state has ever been done.

### York County

#### Animals

Scientific Name	Common Name	Federal Status	State Status	Global Rank
<i>Acris crepitans</i>	Northern Cricket Frog	--	--	G5
<i>Danaus plexippus</i>	Monarch Butterfly	ARS*: Risk, Priority	--	G4
<i>Elimia catenaria</i>	Gravel Elimia	--	--	G4
<i>Etheostoma collis</i>	Carolina Darter	--	--	G3
<i>Haliaeetus leucocephalus</i>	Bald Eagle	--	ST: Threatened	G5
<i>Lasmigona decorata</i>	Carolina Heelsplitter	LE: Endangered	--	G1
<i>Lithobates palustris</i>	Pickerel Frog	--	--	G5
<i>Perimyotis subflavus</i>	Tricolored Bat	ARS*: Risk, priority	--	G2G3

#### Plants

Scientific Name	Common Name	Federal Status	State Status	Global Rank
<i>Agalinis auriculata</i>	Earleaf Foxglove	--	--	G3
<i>Agrimonia pubescens</i>	Soft Groovebur	--	--	G5
<i>Amphianthus pusillus</i>	Pool Sprite	LT: Threatened	--	G2
<i>Asplenium bradleyi</i>	Bradley's Spleenwort	--	--	G4
<i>Camassia scilloides</i>	Wild Hyacinth	--	--	G4G5
<i>Cyperus granitophilus</i>	Granite-loving Flatsedge	--	--	G3G4
<i>Dasistoma macrophylla</i>	Mullein Foxglove	--	--	G4
<i>Eleocharis palustris</i>	Spike-rush	--	--	G5
<i>Elymus riparius</i>	Wild-rye	--	--	G5
<i>Eupatorium sessilifolium</i> var. <i>vaseyi</i>	Thoroughwort	--	--	G5T3
<i>Helianthus eggertii</i>	Eggert's Sunflower	--	--	G3
<i>Helianthus laevigatus</i>	Smooth Sunflower	--	--	G4
<i>Helianthus schweinitzii</i>	Schweinitz's Sunflower	LE: Endangered	--	G3

Hymenocallis coronaria	Shoals Spider-lily	--	--	G3?
Isoetes piedmontana	Piedmont Quillwort	--	--	G4
Juglans cinerea	Butternut	--	--	G4
Juncus georgianus	Georgia Rush	--	--	G4
Lilium canadense	Canada Lily	--	--	G5
Lipocarpa micrantha	Dwarf Bulrush	--	--	G5
Melanthium virginicum	Virginia Bunchflower	--	--	G5
Menispermum canadense	Canada Moonseed	--	--	G5
Minuartia uniflora	One-flower Stitchwort	--	--	G4
Najas flexilis	Slender Naiad	--	--	G5
Panax quinquefolius	American Ginseng	--	--	G3G4
Poa alsodes	Blue-grass	--	--	G4G5
Quercus bicolor	Swamp White Oak	--	--	G5
Quercus oglethorpensis	Oglethorpe's Oak	--	--	G3
Ranunculus fascicularis	Early Buttercup	--	--	G5
Ratibida pinnata	Gray-head Prairie Coneflower	--	--	G5
Rhododendron eastmanii	May White	--	--	G2
Rudbeckia heliopsidis	Sun-facing Coneflower	ARS*: Risk, priority	--	G2
Scutellaria parvula	Small Skullcap	--	--	G4
Silphium terebinthinaceum	Prairie Rosinweed	--	--	G4G5
Solidago ptarmicoides	Prairie Goldenrod	--	--	G5
Solidago rigida	Prairie Goldenrod	--	--	G5
Symphyotrichum georgianum	Georgia Aster	ARS*: Risk, priority	--	G3
Symphyotrichum laeve	Smooth Blue Aster	--	--	G5
Thermopsis mollis	Soft-haired Thermopsis	--	--	G4?
Tiarella cordifolia var. cordifolia	Heart-leaved Foam Flower	--	--	G5T5
Torreyochloa pallida	Pale Manna Grass	--	--	G5
Trillium rugelii	Southern Nodding Trillium	--	--	G3
Verbena simplex	Narrow-leaved Vervain	--	--	G5
Veronicastrum virginicum	Culver's-root	--	--	G4

For additional information about rare, threatened, and endangered species or questions about these lists, please contact [Anna Smith](#).

## Environmental Review

- [Office of Environmental Programs](#)
- [Bald Eagle Nest Data](#)
- [Planning & Conservation](#)

## **Appendix III – Alderman Environmental Services, Inc. Mussel Survey**



**Alderman Environmental Services, Inc.**

**9 May 2019**

**PROJECT:** S&ME Freshwater Mussel Surveys Within Headwater Tributaries of Manchester Creek, York County, South Carolina

**TARGET SPECIES:** Carolina Heelsplitter (*Lasmigona decorata*)

**Staff:** Joseph D. Alderman  
John M. Alderman

**STATION 190508.1jda**

**LOCATION:** Various headwater tributaries to Manchester Creek, SC; see associated map at end of report

**SURVEY DATE:** 8 May 2019

**SITE COMMENTS:** Good survey conditions: water relatively low and clear to slightly turbid within surveyed streams; mostly very poor quality mussel habitat due to urbanization; most streams at the upper limits of Carolina Heelsplitter stream sizes; no evidence of any freshwater mussel taxa

**HABITAT (general summary for all surveyed streams)**

WATERBODY TYPES:	Stream
FLOW:	Run, riffle, slack
RELATIVE DEPTH:	Very shallow
DEPTH (%<2 FEET):	95+
SUBSTRATE:	Clay, organics, silt, <b>sand</b> , pebble, <b>gravel</b> , cobble, boulder; substrates varied by reach
COMPACTNESS:	Normal and unconsolidated
SAND/GRAVEL BARS:	Present
WOODY DEBRIS:	Varied
BEAVER ACTIVITY:	None
WINDTHROW:	Generally average
TEMPORARY POOLS:	None documented

**HABITAT (CONTINUED):**

CHANNEL WIDTH:	Varied; 1-5 meters depending upon reach
BANK HEIGHT:	Varied
BANK STABILITY:	Varied
BUFFER WIDTH:	Varied
RIPARIAN VEGETATION:	Wooded, shrub-brush
LAND USE:	Mostly urban
PERCENT COVER:	95
VISIBILITY:	Clear to slightly turbid
WATER LEVEL:	Normal
WEATHER:	Warm to hot; Sun-Cloud

**TECHNIQUES AND SURVEY TIME:**

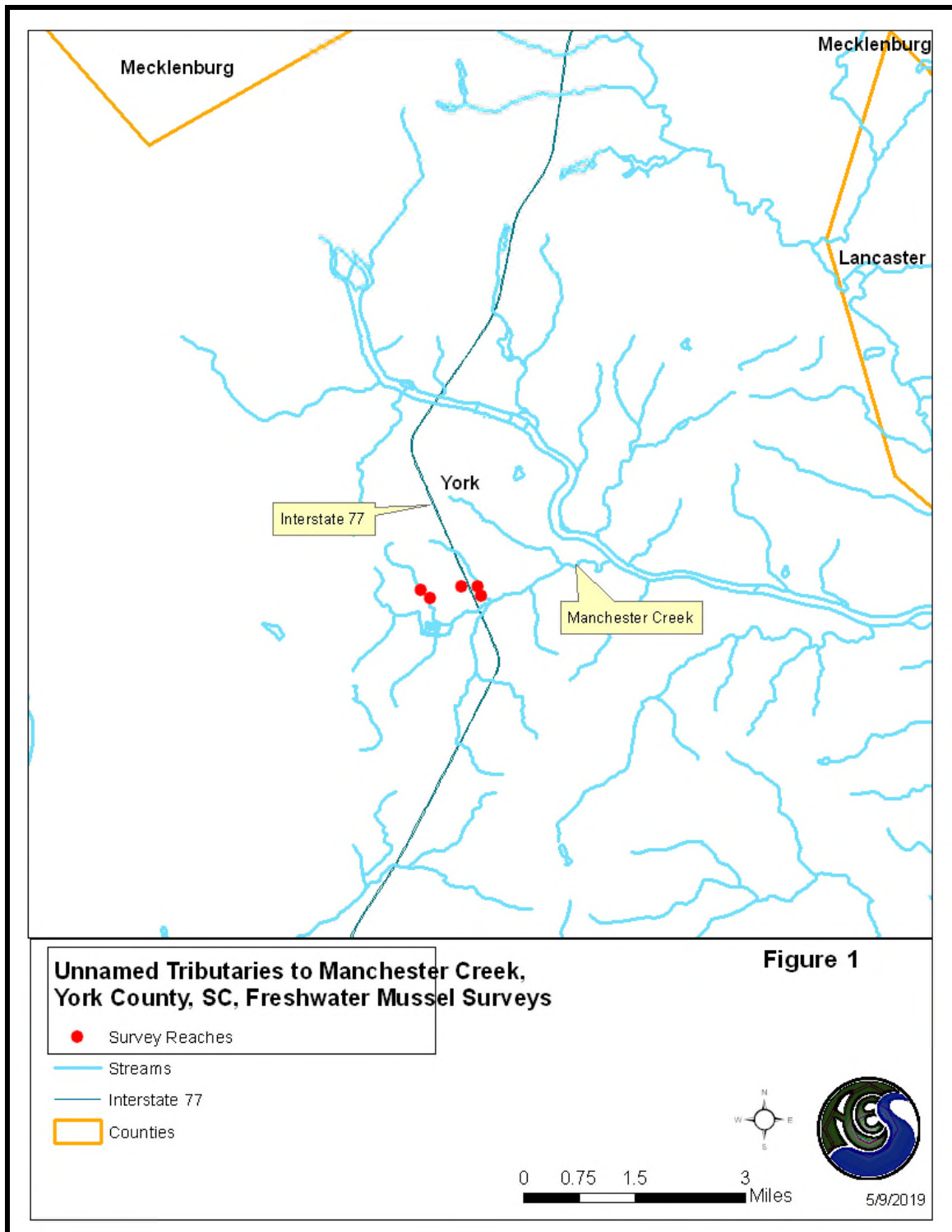
TECHNIQUES:	Visual, tactile
SURVEY TIME:	15 person-hours

**DOCUMENTED MUSSEL TAXA:**

None; no shells, fragments, or live

**BIOLOGICAL CONCLUSION**

No recent occurrences of the Carolina Heelsplitter are documented in Manchester Creek or the Catawba River. Since no freshwater mussels were documented within the subject streams, and these streams are extremely small (upper limits of known Carolina Heelsplitter occupied streams), the Biological Conclusion is No Effect.





## **Appendix IV – USFWS Correspondence for NLEB**

## Chris Daves

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**From:** Wolf, Morgan <morgan\_wolf@fws.gov>  
**Sent:** Monday, October 7, 2019 1:37 PM  
**To:** Chris Daves  
**Subject:** Re: [EXTERNAL] NLEB - Project Inspector in York Co.

Hi Chris,

After reviewing our records, there are no known maternity roosts nor hibernacula located near the project area. Therefore, project activities are exempt under the 4(d) rule for the species. Please let me know if there is anything else you may need.

Best,  
Morgan

On Thu, Oct 3, 2019 at 12:12 PM Chris Daves <[CDaves@smeinc.com](mailto:CDaves@smeinc.com)> wrote:

Good afternoon, Morgan,

I hope all is well. We are working on a potentially federally permitted project (USACE) and have conducted surveys for the plant species (S. Sunflower mainly) and mussel (heelsplitter).

We may have a chance to use the Clearance letter. To do so, I am seeking information on the following if available in USFWS records:

- Known locations of NLEB within 0.25 mile from known hibernacula/winter roost or 150 feet from maternity roost.

The site location is west of I-77, south of Eden Terrace, and east of Mt. Gallant Road in Rock Hill, York County. Lat/long coordinates of the site center are 34.9582° N/-80.9851°W.

I have attached a few figures for your reference.

Please let me know if you need anything else to assist in your response.

Thanks again!

Chris

## Chris Daves, P.W.S.

Biologist/Senior Scientist



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Morgan K. Wolf  
US Fish and Wildlife Service, South Carolina Field Office  
176 Croghan Spur Road, Suite 200  
Charleston, SC 29407  
Office: 843-727-4707 ext. 219

*"In the end, our society will be judged not by what we create, but by what we refuse to destroy."*

***NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.***