Appendix C Cultural Resources Survey Report

Phase I Cultural Resources Management Survey for the Approximately 0.9 ha (2.3 ac) Rutland Station Expansion Project in Rutland Township, Meigs County, Ohio

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February 23, 2016

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By

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Abstract

In February of 2016, Weller & Associates, Inc. conducted a Phase I cultural resources management survey for the approximately 0.9 ha (2.3 ac) Rutland Station Expansion Project in Rutland Township, Meigs County, Ohio. The lead agency for the project is the Ohio Power Siting Board. A cultural resources management survey was deemed necessary to identify any sites or properties and to evaluate them in a manner that is reflective of Section 106 investigations pertaining to the National Register of Historic Places (NRHP) and/or National Landmarks. The work involved a literature review, field investigations, and report preparation. The majority of the project area was found to be severely disturbed or in untestable conditions (i.e., creek channel). There were no cultural materials identified.

The project plans to expand the existing Rutland Station to accommodate additional equipment. The station is located at 31919 Higley Road, Rutland, Ohio and the expansion will be to the north of the existing station. It is situated on an elevated landform between railroad tracks and Leading Creek. The work will also include the relocation of one of the existing distribution poles that is contained within the study area. It does not appear that any additional T-line work will be necessary as part of this project. The project area is about 0.9 ha (2.3 ac) in size and is limited to the area that is north of the extant station compound.

The literature review for this project did not identify any sites or previously recorded cultural resources within the project area. Site 33MS414 is recorded near and to the east of the project area; it is on the opposite side of the railroad tracks and on a lower landform. There are no previous surveys involved in the project area.

The field investigations did not identify any cultural resources, as a large part of the project is severely disturbed from previous construction associated with the existing substation. There has been some partial disturbance from tree removal, but the topsoil as still intact and testable. There were no cultural materials identified during these investigations and the work is not considered to affect any historic properties. No further cultural resource work is recommended for this project.

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Introduction

In February of 2016, Weller & Associates, Inc. (Weller) conducted a Phase I cultural resources management survey for the approximately 0.9 ha (2.3 ac) Rutland Station Expansion Project in Rutland Township, Meigs County, Ohio (Figures 1-3). The lead agency for the project is the Ohio Power Siting Board as the project is relative to a facility/land use for American Electric Power. The report and investigations were conducted in a manner that is reflective of the *Archaeology Guidelines* (Ohio Historic Preservation Office [OHPO] 1994); the report was prepared in a manner that is suitable for submissions that are indicative of Section 106 (National Historic Preservation Act). This document is subject to review and coordination with the Ohio Power Siting Board (OPSB).

Chad Porter conducted the literature review on February 16, 2016. Ryan Weller served as the Principal Investigator and Senior Project Manager. The field crew included Ryan Weller and Jon Walker. The report preparation was by Ryan and Chad.

Project Description

The subject project is going to expand the existing Rutland Station to accommodate additional equipment. The station is located at 31919 Higley Road, Rutland, Ohio. It is situated on an elevated landform between a railroad tracks and Leading Creek. The work will also include the relocation of one of the existing distribution poles that is within the study area. It does not appear that any additional T-line work will be necessary as part of this project. The project area is about 0.9 ha (2.3 ac) in size and is limited to the area that is north of the extant station compound.

Environmental Setting

Climate

Meigs County, like all of Ohio, has a continental climate, with hot and humid summers and cold winters. About 100 cm (40 in) of precipitation fall annually on the county. Mid-winter tends to be the driest time of the year, while July tends to be the wettest month for Meigs County [United States Department of Agriculture, Soil Conservation Service (USDA, SCS) 2016].

Physiography, Relief, and Drainage

Most of Meigs County is contained within the Marietta Plateau of the Appalachian Highlands. This is terrain that is characterized by rugged upland conditions, steep side slopes, and entrenched valleys. Occasionally, there are valleys with fill dating from the Teays depositional era (Brockman 1998); it is unlikely that this project has been affected by any glacial or pre-glacial activity. The project area is located in an upland situation that is drained by Leading Creek, a tributary of Ohio River.

Geology

The project is situated in the Marietta Plateau physiographic region. The underlying bedrock includes sedimentary rocks and materials dating from the Pennsylvanian-era (Brockman 1998). The geology of the project consists of shales, siltstones, coals, and sandstones (Brockman 1998).

Soils

The project is located within the Chagrin-Nolin-Licking soil association; these soils generally formed in recent alluvium and ancient lacustrine sediments. The project includes two soil series types (Table 1). These soils are commonly identified in the upland, valley situations involving the Leading Creek Valley. Chagrin soils are prone to flooding, while the Licking soil series types would be more apt to containing cultural materials (USDA, SCS 2016).

Table 1. Soil Series Types Identified in the Project Area.

Soil Symbol	Soil Name	% Slope	Landform Type
Chg1Af	Chagrin silt loam	0-3	Upland floodplains; Freq. flooded
Lic1C2	Licking silt loam	6-12	Upland valley terrace remnants

Flora

There is or at least was great floral diversity in Ohio. This diversity is relative to the soils and the terrain that generally includes the till plain, lake plain, terminal glacial margins, and unglaciated plateau (Forsyth 1970). Three major glacial advances, including the Kansan, Illinoisan, and Wisconsinan, have affected the landscape of Ohio. The effects of the Wisconsin glaciation are most pronounced and have affected more than half of the state (Pavey et al. 1999).

The least diverse part of Ohio extends in a belt from the northeast below the lake-affected areas through most of western Ohio (Gordon 1966). These areas are part of the late Wisconsin ground moraine and lateral end moraines. It is positioned between the lake plains region and the terminal glacial moraines. This area included broad forested areas of beech maple forests interspersed with mixed oak forests in elevated terrain or where relief is greater (Forsyth 1970; Gordon 1966). Prairie environments such as those in Wyandot and Marion County areas would contain islands of forests, but were mostly expansive open terrain dominated by grasses.

The northwestern Ohio terrain is nearly flat because of ancient glacial lakes and glaciation, which affected the flora. However, the vegetation was more diverse than the till plain to the south and east because of the variety of factors that contributed to its terrain. Forests within the Black Swamp were generally comprised of elm/ash stands; however, dissected areas along drainages and drier, elevated areas from beach deposits would contain mixed forests of oak and hickory (Gordon 1966, 1969). There was little upland floral diversity in the lake plains (Black Swamp region) except for the occasional patches of oak and hickory. Floral variety was most evident in narrow sleeves along larger stream valleys where there is relief.

The most biological diversity in Ohio is contained within the Allegheny Plateau, which encompasses the southeastern two-thirds of the state (Sheaffer and Rose 1998). Because this area is higher and has drier conditions, it is dominated by mixed oak forests. Some locations within the central part of this area contain beech and mixed mesophytic forests. There are large patches of oak and sugar maple forests to the south of the terminal moraine from Richland to Mahoning County (Gordon 1966).

Southwestern Ohio from about Cincinnati to Bellefontaine east to the Scioto River historically contained a very diverse floral landscape. This is an area where moraines from three glacial episodes are prevalent (Pavey et al. 1999). Forests in this area include elm-ash swamp, beech, oak-sugar maple, mixed mesophytic, prairie grasslands, mixed oak, and bottomland hardwoods (Core 1966; Gordon 1966, 1969). These forest types are intermingled with prairies being limited to the northern limits of this area mostly in Clark and Madison Counties.

Generally, beech forests are the most common variety through Ohio and could be found in all regions. Oak and hickory forests dominated the southeastern Ohio terrain and were found with patchy frequency across most of northern Ohio. Areas that were formerly open prairies and grasslands are in glacial areas, but are still patchy. These are in the west central part of the state. Oak and sugar maple forests occur predominantly along the glacial terminal moraine. Elm-ash swamp forests are prevalent in glaciated areas including the northern and western parts of Ohio (Gordon 1966; Pavey et al. 1999).

The uplands in Meigs County are contained in mixed oak forested situations while the valleys (including the project area) are contained in beech forests (Gordon 1966).

Fauna

The upland forest zone offered a diversity of mammals to the prehistoric diet. This food source consisted of white-tailed deer, black bear, Eastern cottontail rabbit, opossum, a variety of squirrels, as well as other less economically important mammals. Several avian species were a part of the upland prehistoric diet as well (i.e. wild turkey, quail, ruffed grouse, passenger pigeon, etc.). The lowland zone offered significant species as well. Raccoon, beaver, and muskrat were a few of the mammals, while wood duck and wild goose were the economically important birds. Fishes and shellfish were also an integral part of the prehistoric diet. Ohio muskellunge, yellow perch, white crappie, long nose gar, channel catfish, pike, and sturgeon were several of the fish, whereas, the Ohio naiad mollusc, butterfly's shell, long solid, common bullhead, knob rockshell, and cod shell were the major varieties of shellfish. Reptiles and amphibians, such as several varieties of snakes, frogs, and turtles, were also part of the prehistoric diet (Trautman 1981; Lafferty 1979; Mahr 1949).

Cultural Setting

The first inhabitants of Ohio were probably unable to enter this land until the ice sheets of the Wisconsin glacier melted around 14,000 B.C. Paleoindian sites are considered rare due to the age of the sites and the effects of land altering activities such as erosion. Such sites were mostly used temporarily and thus lack the accumulation of

human occupational deposits that would have been created by frequent visitation. Paleoindian artifact assemblages are characteristic of transient hunter-gatherer foraging activity and subsistence patterns. In Ohio, major Paleoindian sites have been documented along large river systems and near flint outcrops in the Unglaciated Plateau (Cunningham 1973). Otherwise, Paleoindian sites in the glaciated portions of Ohio are encountered infrequently and are usually represented by isolated finds or open air scatters.

The Paleoindian period is characterized by tool kits and gear utilized in hunting Late Pleistocene megafauna and other herding animals including but not limited to short-faced bear, barren ground caribou, flat-headed peccary, bison, mastodon, giant beaver (Bamforth 1988; Brose 1994; McDonald 1994). Groups have been depicted as being mobile and nomadic (Tankersley 1989); artifacts include projectile points, multi-purpose unifacial tools, burins, gravers, and spokeshaves (Tankersley 1994). The most diagnostic artifacts associated with this period are fluted points that exhibit a groove or channel positioned at the base to facilitate hafting. The projectiles dating from the late Paleoindian period generally lack this trait; however, the lance form of the blade is retained and is often distinctive from the following Early Archaic period (Justice 1987).

The Archaic period has been broken down into three sub-categories, including the Early, Middle, and Late Archaic. During the Early Archaic period (ca. 10,000-8000 B.P.), the environment was becoming increasingly arid as indicated by the canopy (Shane 1987). This period of dryness allowed for the exploitation of areas that were previously inaccessible or undesirable. The Early Archaic period does not diverge greatly from the Paleoindian regarding the type of settlement. Societies still appear to be largely mobile with reliance on herding animals (Fitting 1963). For these reasons, Early Archaic artifacts can be encountered in nearly all settings throughout Ohio. Tool diversity increased at this time including hafted knives that are often re-sharpened by the process of beveling the utilized blade edge and intense basal grinding (Justice 1987). There is a basic transition from lance-shaped points to those with blades that are triangular. Notching becomes a common hafting trait. Another characteristic trait occurring almost exclusively in the Early and Middle Archaic periods is basal bifurcation and large blade serrations. Tool forms begin to vary more and may be a reflection of differential resource exploitation. Finished tools from this period can include bifacial knives, points, drills/perforators, utilized flakes, and scrapers.

The Middle Archaic period (8000-6000 B.P.) is poorly known or understood in archaeological contexts within Ohio. Some (e.g., Justice 1987) regard small bifurcate points as being indicative of this period. Ground stone artifacts become more prevalent at this time. Other hafted bifaces exhibit large side notches with squared bases, but this same trait can extend back to the Paleoindian period. The climate at this time is much like that of the modern era. Middle Archaic period subsistence tended to be associated with small patch foraging that involved a consistent need for mobility with a shift towards stream valleys (Stafford 1994). Sites encountered from this time period throughout most of Ohio tend to be lithic scatters or isolated finds. The initial appearance of regional traits may be apparent at this time.

The Late Archaic period in Ohio (ca 6000-3000 B.P.) diverges from the previous periods in many ways. Preferred locations within a regional setting appear to have been

repeatedly occupied. The more intensive and repeated occupations often resulted in the creation of greater social and material culture complexity. The environment at this time is warmer and drier. Most elevated landforms in northeastern Ohio have yielded Archaic artifacts (Prufer and Long 1986: 7), and the same can be stated for the remainder of Ohio.

Various artifacts are diagnostic of the Late Archaic period. Often, burial goods provide evidence that there was some long-distance movement of materials, while lithic materials used in utilitarian assemblages are often from a local chert outcrop. There is increased variation in projectile point styles that may reflect regionalism. Slate was often used in the production of ornamental artifacts. Ground and polished stone artifacts reached a high level of development. This is evident in such artifacts as grooved axes, celts, bannerstones, and other slate artifacts.

It is during the Terminal Archaic period (ca 3500-2500 B.P.) that extensive and deep burials are encountered. Cultural regionalism within Ohio is evident in the presence of Crab Orchard (southwest), Glacial Kame (northern), and Meadowood (central to Northeastern). Along the Ohio River, intensive occupations have been placed within the Riverton phase. Pottery makes its first appearance during the Terminal Late Archaic.

The Early Woodland period (ca 3000-2100 B.P.) in Ohio is often associated with the Adena culture and the early mound builders (Dragoo 1976). Early and comparably simple geometric earthworks first appear with mounds more spread across the landscape. Pottery at this time is thick and tempered with grit, grog, or limestone; however, it becomes noticeably thinner towards the end of the period. There is increased emphasis on gathered plant resources, including maygrass, chenopodium, sunflower, and squash. Habitation sites have been documented that include structural evidence. Houses that were constructed during this period were circular, having a diameter of up to 18.3 m (Webb and Baby 1963) and often with paired posts (Cramer 1989). Artifacts dating from this period include leaf-shaped blades with parallel to lobate hafting elements, drilled slate pieces, ground stone, thick pottery, and increased use of copper. Early Woodland artifacts can be recovered from every region of Ohio.

The Middle Woodland period (ca 2200-1600 B.P.) is often considered to be equivalent with the Hopewell culture. The largest earthworks in Ohio date from this period. There is dramatic increase in the appearance of exotic materials that appear most often in association with earthworks and burials. Artifacts representative of this period include thinner, grit-tempered pottery, dart-sized projectile points (Lowe Flared, Steuben, Snyders, and Chesser) [Justice 1987], exotic materials (mica, obsidian, and marine shell, etc.). The points are often thin, bifacially beveled, and have flat cross sections. There seems to have been a marked increase in the population as well as increased levels of social organization. Middle Woodland sites seem to reflect a seasonal exploitation of the environment. There is a notable increase in the amount of Eastern Agricultural Complex plant cultigens, including chenopodium, knotweed, sumpweed, and little barley. This seasonal exploitation may have followed a scheduled resource extraction year in which the populations moved camp several times per year, stopping at known resource extraction loci. Middle Woodland land use appears to center on the regions surrounding earthworks (Dancey 1992; Pacheco 1996); however, there is evidence of repeated occupation away from earthworks (Weller 2005a). Household structures at this time vary

with many of them being squares with rounded corners (Weller 2005a). Exotic goods are often attributed to funerary activities associated with mounds and earthworks. Utilitarian items are more frequently encountered outside of funerary/ritual contexts. The artifact most diagnostic of this period is the bladelet, a prismatic and thin razor-like tool, and bladelet cores. Middle Woodland remains are more commonly recovered from central Ohio south and lacking from most areas in the northern and southeastern part of the state.

The Late Woodland period (ca A.D. 400-900) is distinct from the previous period in several ways. There appears to be a population increase and a more noticeable aggregation of groups into formative villages. The villages are often positioned along large streams, on terraces, and were likely seasonally occupied (Cowan 1987). This increased sedentism was due in part to a greater reliance on horticultural garden plots, much more so than in the preceding Middle Woodland period. The early Late Woodland groups were growing a wide variety of crop plants that are collectively referred to as the Eastern Agricultural Complex. These crops included maygrass, sunflower, and domesticated forms of goosefoot and sumpweed. This starch and protein diet was supplemented with wild plants and animals. Circa A.D. 800 to 1000, populations adopted maize agriculture, and around this same time, shell-tempered ceramics appear. Other technological innovations and changes during this period included the bow and arrow and changes in ceramic vessel forms.

The Late Prehistoric period (ca A.D. 1000-1550) is distinctive from former periods. The Cole complex (ca A.D. 1000-1300) has been identified in central and south central Ohio. Sites that have been used to define the Cole complex include the W.S. Cole (33DL11), Ufferman (33DL12), and Decco (33DL28) sites along the Olentangy; the Zencor Village site, located along the Scioto River in southern Franklin County; and the Voss Mound site (33FR52), located along the Big Darby Creek in southwestern Franklin County. It has been suggested that this cultural manifestation developed out of the local Middle Woodland cultures and may have lasted to be contemporaneous with the Late Prehistoric period (Barkes 1982; Baby and Potter 1965; Potter 1966). Cole is a poorly defined cultural complex as its attributes are a piecemeal collection gathered from various sites. Some have suggested that it may be associated with the Fort Ancient period (Pratt and Bush 1981). Artifacts recovered from sites considered as Cole include plain and cordmarked pottery, triangular points, Raccoon Notched points, chipped slate discs, rectangular gorgets, and chipped stone celts. The vessels often have a globular form with highly variable attributes and rim treatment. There have been few structures encountered from this period, but those that have are typically rounded or circular (Pratt and Bush 1981; Weller 2005b).

Monongahela phase sites date to the Late Prehistoric to Contact period in eastern Ohio. Monongahela sites are typically located on high bottomlands near major streams, on saddles between hills, and on hilltops, sometimes a considerable distance from water sources. Most of these sites possessed an oval palisade, which surrounded circular house patterns. Burials of adults are usually flexed and burial goods are typically ornamental. A large variety of stone and bone tools are found associated with Monongahela sites. Monongahela pottery typically is plain or cordmarked with a rounded base and a gradually in-sloping shoulder area. Few Euro-American trade items have been found at Monongahela sites (Drooker 1997).

Protohistoric to Settlement

By the mid-1600s, French explorers traveled through the Ohio country as trappers, traders, and missionaries. They kept journals about their encounters and details of their travels. These journals are often the only resource historians have regarding the early occupants of seventeenth century Ohio. The earliest village encountered by the explorers in 1652 was a Tionontati village located along the banks of Lake Erie and the Maumee River. Around 1670, it is known that three Shawnee villages were located along the confluence of the Ohio River and. the Little Miami River. Because of the Iroquois Wars, which continued from 1641-1701, explorers did not spend much time in the Ohio region, and little else is known about the natives of Ohio during the 1600s. Although the Native American tribes of Ohio may have been affected by the outcome of the Iroquois Wars, no battles occurred in Ohio (Tanner 1987).

French explorers traveled extensively through the Ohio region from 1720-1761. During these expeditions, the locations of many Native American villages were documented. In 1751, a Delaware village known as Maguck existed near present-day Chillicothe. In 1758, a Shawnee town known as 'Lower Shawnee 2' existed at the same location. The French also documented the locations of trading posts and forts, which were typically established along the banks of Lake Erie or the Ohio River (Tanner 1987).

While the French were establishing a claim to the Ohio country, many Native Americans were also entering new claims to the region. The Shawnee were being forced out of Pennsylvania because of English settlement along the eastern coast. The Shawnee created a new headquarters at Shawnee Town, which was located at the mouth of the Scioto River. This headquarters served as a way to pull together many of the tribes which had been dispersed because of the Iroquois Wars (Tanner 1987).

Warfare was bound to break out as the British also began to stake claims in the Ohio region by the mid-1700s. The French and Indian War (1754-1760) affected many Ohio Native Americans; however, no battles were recorded in Ohio (Tanner 1987). Although the French and Indian War ended in 1760, the Native Americans continued to fight against the British explorers. In 1764, Colonel Henry Bouquet led a British troop from Fort Pitt, Pennsylvania to near Zanesville, Ohio.

In 1763, the Seven Years' War fought between France and Britain, also known as the French and Indian War ended with The Treaty of Paris. In this Peace of Paris, the French ceded their claims in the entire Ohio region to the British. When the American Revolution ended with the Second Treaty of Paris in 1783, the Americans gained the entire Ohio region from the British; however, they designated Ohio as Indian Territory. Native Americans were not to move south of the Ohio River but Americans were encouraged to head west into the newly acquired land to occupy and govern it (Tanner 1987).

By 1783, Native Americans had established fairly distinct boundaries throughout Ohio. The Shawnee tribes generally occupied southwest Ohio, while the Delaware tribes stayed in the eastern half of the state. Wyandot tribes were located in north-central Ohio,

and Ottawa tribes were restricted to northeast Ohio. There was also a small band of Mingo tribes in eastern Ohio along the Ohio River, and there was a band of Mississauga tribes in northeastern Ohio along Lake Erie. The Shawnee people had several villages within Ross County along the Scioto River (Tanner 1987). Although warfare between tribes continued, it was not as intense as it had been in previous years. Conflicts were contained because boundaries and provisions had been created by earlier treaties.

In 1795, the Treaty of Greenville was signed as a result of the American forces defeat of the Native American forces at the Battle of Fallen Timbers. This allocated the northern portion of Ohio to the Native Americans, while the southern portion was opened for Euro-American settlement. Although most of the battles which led up to this treaty did not occur in Ohio, the outcome resulted in dramatic fluctuations in the Ohio region. The Greenville Treaty line was established, confining all Ohio Native Americans to northern Ohio, west of the Tuscarawas River (Tanner 1987).

Ohio Native Americans were again involved with the Americans and the British in the War of 1812. Unlike the previous wars, many battles were fought in the Ohio country during the War of 1812. By 1815, peace treaties began to be established between the Americans, British, and Native Americans. The Native Americans lost more and more of their territory in Ohio. By 1830, the Shawnee, Ottawa, Wyandot, and Seneca were the only tribes remaining in Ohio. These tribes were contained on reservations in northwest Ohio. By the middle 1800s, the last of the Ohio Native Americans signed treaties and were removed from the Ohio region.

Meigs County History

At the time George Washington was measuring rods in the wilderness west of the Appalachians, a small portion of the land that would become Meigs County served as a camp for his expedition. This was in 1770. After the signing of the Constitution, Washington, now president, ordered another survey of the land that would come to be know as the North West Territory. Among them was General Return Jonathan Meigs. The namesake was Governor of Ohio in 1810 giving the people of Meigs another reason to honor him by taking his name (Austin 1891, Ervin 1949, Helmers 2005, Larkin 1908, Meigs County Pioneer & Historical Society [MCP&HS] 1979).

The county of Meigs was established April 1, 1819 and was taken from pieces of Gallia, Washington, and Athens Counties. Levi Chapman and John Eutsminger came as the first known settlers in 1787 although some assume the first squatting settlements along were along the river as early as 1770. Between then and the establishment of the county's perimeters, many others followed thanks in part to the Ohio Company's land purchase; most settlers clearing land for their personal farms. The new county's openness and farmability attracted European settlers from the East. Individuals from New England, the British Isles and Germany came to this area because of the reminiscent qualities the land possessed of their homelands (Austin 1891, Ervin 1949, Larkin 1908, MCP&HS 1979).

The area surrounding today's village of Pomeroy attracted the Germans especially because of its likeness to the Rhine River. Thanks to their spirit of hard work and

innovation, the town soon had many salt factories and coalmines. Pomeroy became a minor shipping port along the Ohio River as well. Dr. W. B. VanDuyn and Benjamin Smith laid out a town they initially called "Vinton" in 1837 but it became known as Middleport; this was the first town officially platted and registered in Meigs. Racine came soon after. Graham Station was the name P. Lallance, brother A. Lallance, and John Wolf chose for their town when they laid it out in 1837; "Racine" has been the name since 1852. Chester was the first county seat and held the courthouse and a jail in 1822. The courthouse is the longest standing in the state. In 1841, the general assembly relocated the county seat to Pomeroy, as the town was Meigs' largest and most productive. Syracuse and Rutland are the only other towns of significance in Meigs (Austin 1891, Ervin 1949, Larkin 1908, MCP&HS 1979).

Aside from the agricultural benefit reaped by the pioneers, the ground in Meigs County began to offer up its abundant coal from its clay and sandy loam soil. From the early 1820s until after the Civil War, mills helped business boom along the Ohio River encouraging boat building and the shipping industry. Today the coal industry has slowed and the county relies on industries from lumber to food and beverages production. Machinery such as electric motors and relays are built in its towns. Coal, gravel, and salt are still gathered and shipped from Meigs, but not in the quantities that they were from the 1880s to the 1930s when the coal steamers, which originated here, dominated Ohio shipping. Many of the county's residents still farm dairy, beef, and poultry (Austin 1891, Ervin 1949, Larkin 1908, MCP&HS 1979, U.S. Department of Agriculture, Soil Conservation Service [USDA, SCS] 2000).

Meigs County contains the only Civil War battlefield in Ohio. Buffington Island is the site that commemorates the battle where Morgan's Raiders were held and routed by Union home guard units in and around Pomeroy on July 19, 1863. The local hero was Major Daniel McCook. McCook led his family into battle and wagered his sons and nephews and, in this confrontation, sacrificed his own life. The patriarch of "the Fighting McCooks" is remembered through a roadside monument near the location of his death (Austin 1891, Ervin 1949, Heidelberg College 2005, Larkin 1908, MCP&HS 1979).

During World War II, there was a brief time when the nation once again called on Meigs County to produce coal, but the mines had dried up comparative to previous production; however, a new phase of deeper exploration has risen and looks promising. Now the mainstay industries are manufacturing and a return to agriculture (Austin 1891, Ervin 1949, Larkin 1908, MCP&HS 1979, USDA, SCS 2000).

Rutland Township History

Rutland Township is located in south central Meigs County and is west of Middleport and Pomeroy. The southern aspect of the township borders on the Ohio River. The township is named for the Duke of Rutland, England. It was part of the Ohio Company purchase and originally had the prototypical layout being six miles square. The township was organized in 1812 and was formed from neighboring Salisbury Township to the east and Gallia County.

The village of Rutland was laid out in 1828 by Abijah Hubbell, Jr. and Barzillai H. Miles. This is the largest community in the township and is in the vicinity of the early activity of the county around Leading Creek. Most of the economic pursuits of the nineteenth century were concentrated in this area including the groceries and trade industries. Other smaller communities in the township include New Lima and Langsville (Ervin 1949; Hardesty & Co. 1883).

Early industry and economy in the area included mineral resource extraction. This includes coal, limestone, and sandstone. Salt borings along Leading Creek were profitable industrial activities for many years in the area. To a lesser extent, oil was procured. Agricultural activity had more proclivities along the Ohio River floodplain terraces. The upland interior area remained largely undeveloped and rural. Coal has been consistently important to the economy of Rutland Township since the middle nineteenth century and into the modern era. The coal seams are near the surface and highly accessible making the mining for them cheaper. Oil and gas are attainable in the township and their production is generally tied to the market economy. The first salt well was bored in the county on George Eiselstein's property and not far from Rutland.

The early mills in the townships were constructed by Samuel Dana circa 1805 on Leading Creek. This was a grist mill. The first sawmill/grist mill was constructed by the trio of Brewster Higley, James Phelps, and Joel Higley, Jr. (Hardesty & Co. 1883:283). B. Higley was politically connected as well since he was commissioned by Gov. St. Clair for the position of magistrate/justice of the peace. Another first involving Higley was the fact that the first sermon was held at a grove on his farm. He also was the location of the first settlement in the county, along Leading Creek, circa 1799 (Hardesty & Co. 1883:283; Ervin 1949; Larkin 1908). Other industries or industrial activities in the area include wooden tubs/buckets and hats dating from the early nineteenth century.

The early religious factions of the area included Methodist, Christian, Baptist, and United Brethren faiths. The earliest of these arrived in the area around 1825. The first post office was established near Rutland and another followed at the community of Langsville. The first post office was in the Eli Stedman house (Ervin 1949; Hardesty & Co. 1883).

Little has changed regarding the rural nature of the setting of Rutland Township or its surroundings extending into the modern era. Much of the activity revolves around mineral extraction-related activity, primarily coal. Industry and commercial activities that are oriented with the minerals tend to be along the Ohio River and along Leading Creek. Upland areas remain rural with residences and farms spread out and stretching along ridge tops or valleys bottoms and adjacent to roads.

Research Design

The purpose of a Phase I survey is to locate and identify cultural resources that will be affected by the substation expansion. This includes archaeological deposits as well as architectural properties that are older than 50 years. Once these resources are identified and sampled, they are evaluated for their eligibility or potential eligibility to the

National Register of Historic Places (NRHP) and/or as landmarks. The following field methods were utilized to address cultural resources regarding the project area.

Archaeological Field Methods

The survey conducted within the project area used three methods of sampling and testing to identify and evaluate cultural resources. These included shovel probing and visual inspection.

Shovel test unit excavation. Shovel test units were excavated in all the locations that were located outside of the right-of-way or lacked sufficient visibility for surface collection. These units were spaced at about 15 m intervals (50') and generally positioned on the centerline. Units are manually excavated until they extend 5 cm into the subsoil. Individual shovel test units were documented regarding their depth, content, and color (Munsell). Wherever sites were encountered, Munsell color readings were taken per shovel test unit. All of the undisturbed soil matrices from shovel test units were screened through .6 cm hardware mesh. Additional or radial shovel test units will be excavated in areas where cultural remains are identified. These will be placed at 7.5 m along the pipeline corridor.

Shovel Probing. This method was used to delineate and verify areas of disturbance. Shovel test probes for this project measured 40 cm square and were excavated in areas where surface visibility is lacking, but disturbance is not clearly evident at the surface. If natural soils had been identified, the probe would have been expanded and treated like a shovel test unit.

Visual inspection. This method was conducted in locations where cultural resources were not expected, such as disturbed areas and wet areas. This method was used to verify the absence or likelihood of any cultural resources. This method was also utilized to document the general terrain and the surrounding area.

The application of the resulting field survey methods was documented in field notes, field maps, and project plan maps.

Curation

There were no cultural materials identified during these investigations. Notes and maps affiliated with this project will be maintained at Weller & Associates, Inc. files.

Literature Review

The literature review study area is defined as a 0.8 km (0.5 mile) radius from the project (Figure 2 and 3). In conducting the literature review, the following resources were consulted at OHPO, at the Columbus Metropolitan Library, at the State Library of Ohio, and from various online resources:

1) *An Archaeological Atlas of Ohio* (Mills 1914);
2) OHPO United States Geological Survey (USGS) 7.5' series topographic maps;
3) Ohio Archaeological Inventory (OAI) files;
4) Ohio Historic Inventory (OHI) files;
5) National Register of Historic Places (NRHP) files;
6) OHPO consensus Determinations of Eligibility (DOE) files;
7) OHPO CRM/contract archaeology files; and
8) Meigs County atlases, histories, historic USGS 15'series topographic map(s), and current USGS 7.5' series topographic map(s).

The *Archaeological Atlas of Ohio* (Mills 1914) did not indicate any resources within the project or its vicinity.

A review of the OHPO topographic maps indicated that there are three sites located in the study area (Figure 2 and 3; Table 2). These sites are all associated with prehistoric and historic period components. It seems apparent that these sites may be result of amateur collecting activity as they include many different prehistoric period temporal components. Site 33MS414 is located near the project area and is to the east.

Table 2. OAI sites recorded within the study radius.

OAI #	Affiliation	Specific Temporal Affiliation	Archaeological Site Type	Area
MS0036	Prehistoric and Historic	Early Archaic, Late Archaic, unknown Woodland, Late Woodland, Late Prehistoric, non-aboriginal	Open-Artifact Scatter	
MS0413	Prehistoric and Historic	Early Archaic, Early Woodland, Middle Woodland, Late Woodland, Late Prehistoric, non-aboriginal	Open-Artifact Scatter	1850
MS0414	Prehistoric and Historic	Unknown Woodland & non-aboriginal	Open-Artifact Scatter	18000

The Ohio Historic Inventory (OHI) files indicated no previously recorded OHIs located in the project or its study area.

A review of the NRHP resources and determinations of eligibility (DOE) files did not indicate any resources or potentially eligible resources located within the project area or the study area.

A review of the OHPO contract files indicated that there has been one Phase I (Baker and Cramer 1979) and one Phase II assessment survey (White 1980) conducted in the study area. These surveys do not involve the current project area.

Cartographic/atlas resources were reviewed for the project. The USGS *1907 Pomeroy, Ohio 15 Minute Series (Topographic)* map shows no residences within or adjacent the project area (Figure 5). Similarly, the USGS *1960 Rutland, Ohio 7.5 Minute Series (Topographic)* map indicates the existing substation and several electric lines

converging on it (Figure 2). This map does not depict any other buildings or structures within the project area. There is one cemetery in the study area, Higley-Snyder, and it is not near the project area.

Literature Review Summary

There are few sites or recorded cultural resources in the vicinity of this project; however, site 33MS414 is located just east of the project and is a somewhat similar setting/elevation. This site contained prehistoric and historic period materials, but no specific temporal diagnostics are indicated. The project is located on an elevation that is between railroad tracks and a road with Leading Creek to the west. This is an elevated area, but much of it appears to be disturbed by the existing substation facility.

Archaeological Survey Results

The field investigations for this project were conducted on February 20, 2016 (Figures 5-10). The weather during the survey was seasonally balmy with temperatures around 60° F. The ground was not frozen, the area was free of snow cover, and the subsurface investigations were capable of proceeding as normal. The weather did not hinder the completion of the survey. Much of the project area was found to be severely disturbed, located within a creek channel, or located in steeply sloping conditions. These investigations involved limited subsurface testing and visual inspection. There were no cultural materials identified during these investigations.

The project area is a nearly square area that is located at the north side of the Rutland Station (Figures 5-9). The area includes part of the substation and its earthen platform. Leading Creek is situated immediately to the west of the substation and nearly bisects the project area. The testing was limited to the east side of this creek. The area that is north of the station is largely contained in scrubland and some of which had been deforested by a dozer. This was cleared for the installation of a wooden pole structure.

The subsurface investigations consisted of shovel testing; this was limited to the area that is north of the station and east of Leading Creek. The testing identified some deep topsoil as well as soils that were shallower and more akin to what is typically regarded as a plowzone depth. There were 15 shovel test units excavated in this area. The topsoil is brown (10YR4/3) silt loam and the subsoil is dark reddish brown (10YR4/6) clay (Figure 10). There were few rocks encountered during these investigations. Deeper topsoil and modern alluvial/fill was identified in the shovel test units nearer Leading Creek. The testing was conducted in the deforested area as well since it retained its topsoil after the clearing. However, there were no cultural materials identified.

Much of the project area was contained in disturbed and steeply sloped conditions. The disturbance is largely associated with the construction of the existing station as well as the abutting railroad track easement. It seemed visually apparent that the Leading Creek stream channel had been either re-channeled in the past or it had been dredged. The stream channel is very straight through this area.

These investigations did not result in the identification of any cultural materials. The majority of project area was is severely disturbed; the area is low and considered an to be an unlikely location to identify cultural materials as it seems to flood consistently.

APE Definition and NRHP Determination

The APE is a term that must be applied on an individual project basis. The nature of the project or undertaking is considered in determining the APE. This may include areas that are off the property or outside of the actual project's boundaries to account for possible visual impacts. When construction is limited to underground activity, the APE may be contained within the footprint of the project. The project plans include expanding the existing Rutland Station as well as installing one wooden pole structure. The APE includes the footprint of the project and a limited area surrounding it.

The project area is limited to the terrain/landscape that is abutting an existing electric substation. Much of the area has been graded and manipulated for this function. There are no architectural resources that are older than 50 years within view of this project as it is basically shielded by the ruggedness of the surrounding uplands. The new construction will be a nearly imperceptible change to the setting.

The APE accounts for both architecture and archaeology. The plans do not involve the removal, relocation, or demolition of any buildings. The current investigations for the project did not identify any cultural materials and much of the area is completely disturbed or altered. There were no cultural materials identified during these investigations. Any planned constructions in this area are not considered to affect any historic properties or landmarks.

Recommendations

In February of 2016, Weller & Associates, Inc. completed a Phase I cultural resources management survey for the approximately 0.9 ha (2.3 ac) Rutland Station Expansion Project in Rutland Township, Meigs County, Ohio. The investigations involved limited subsurface testing and visual inspection. The fieldwork did not result in the identification of any cultural remains, and there are no historic properties/landmarks considered to be within the area of potential effects. An appropriate finding of 'no historic properties effected' is considered for this project. No further work is considered to be necessary.

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Figures

Figure 1. Political map of Ohio showing the approximate location of the project.

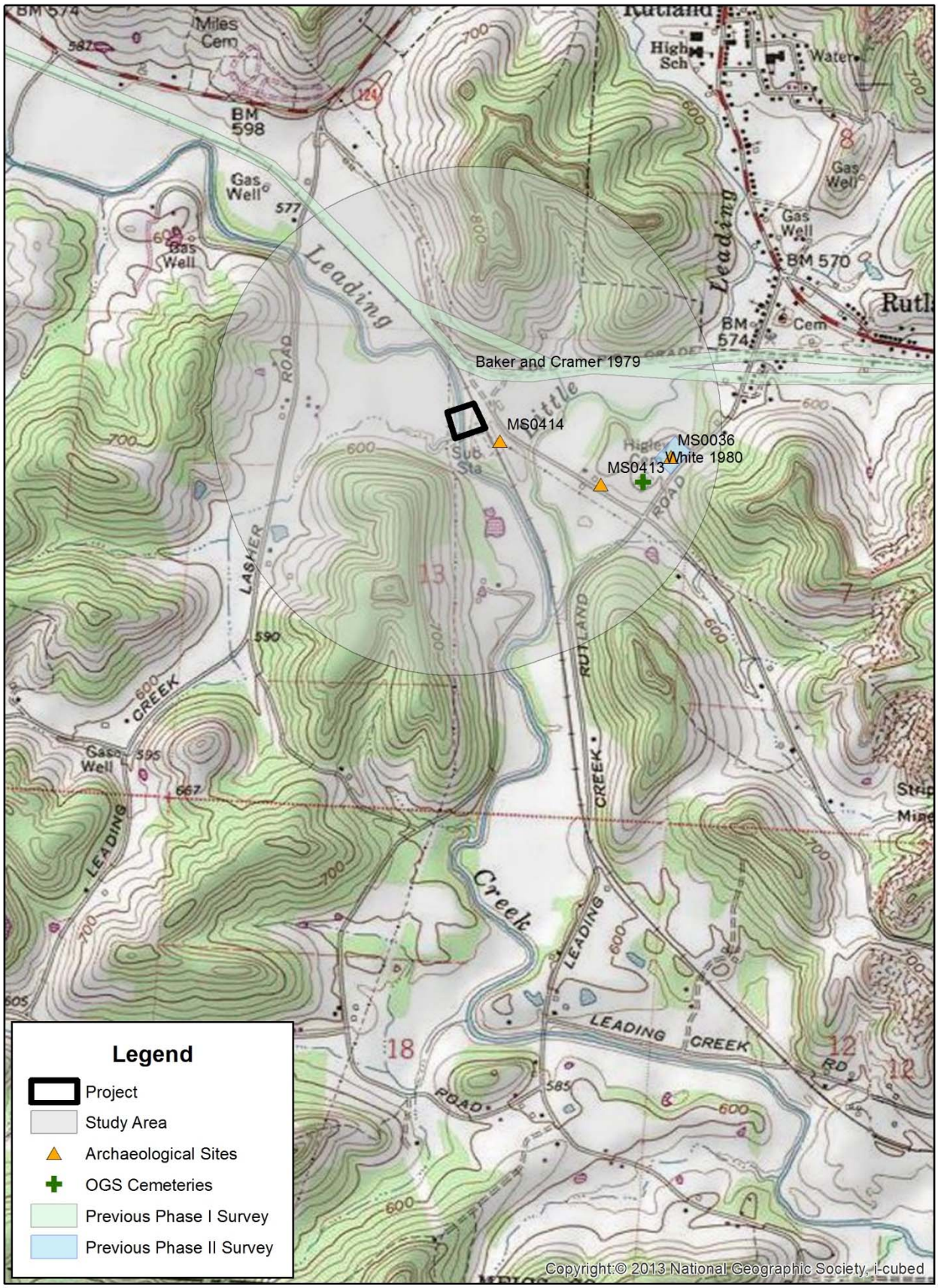

Figure 2. Portion of the USGS *1960 Rutland, Ohio 7.5 Minute Series (Topographic)* map indicating the location of the project and previously recorded resources in the study area.

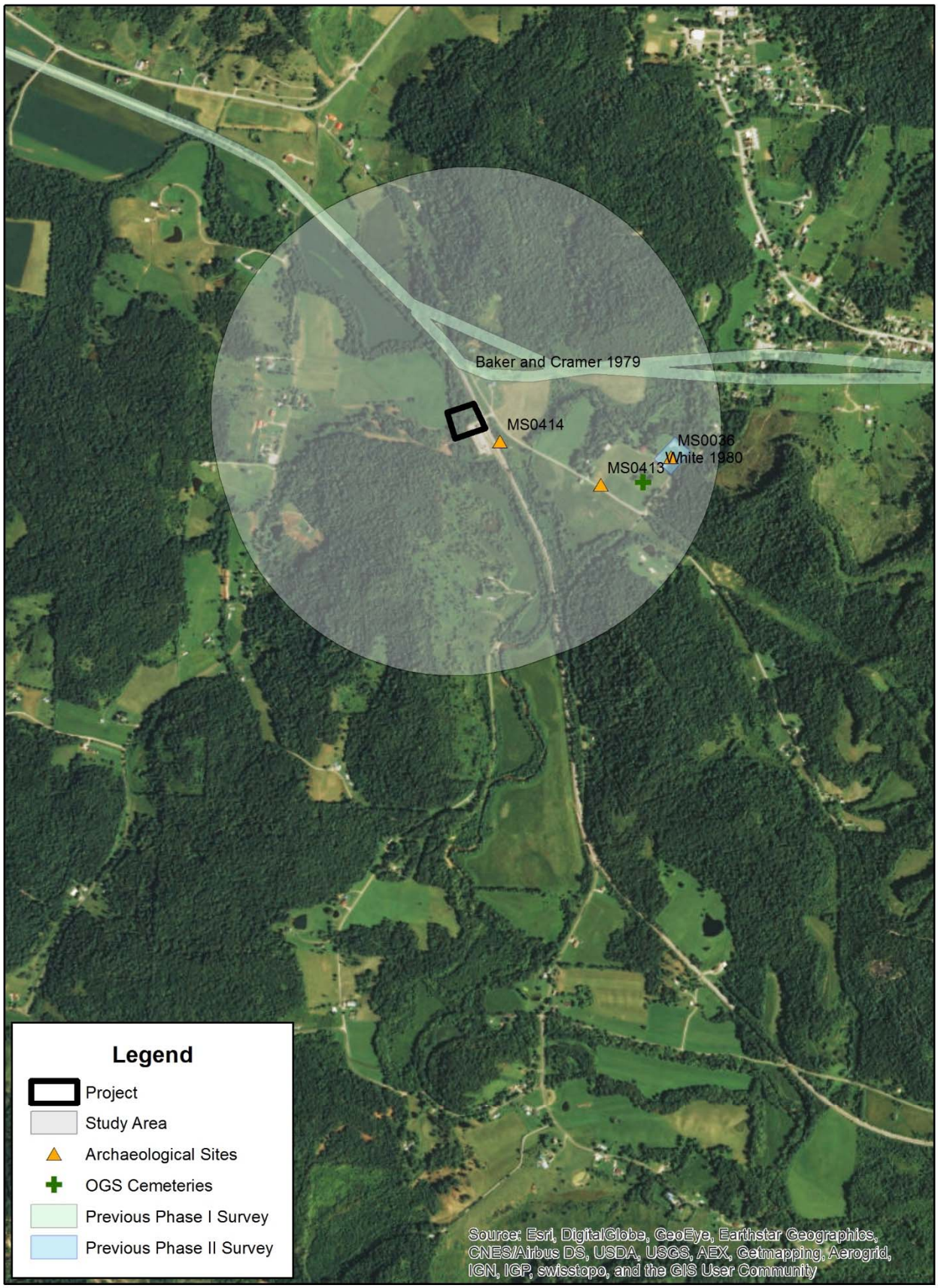

Figure 3. Aerial map indicating the location of the project and previously recorded resources in the study area.

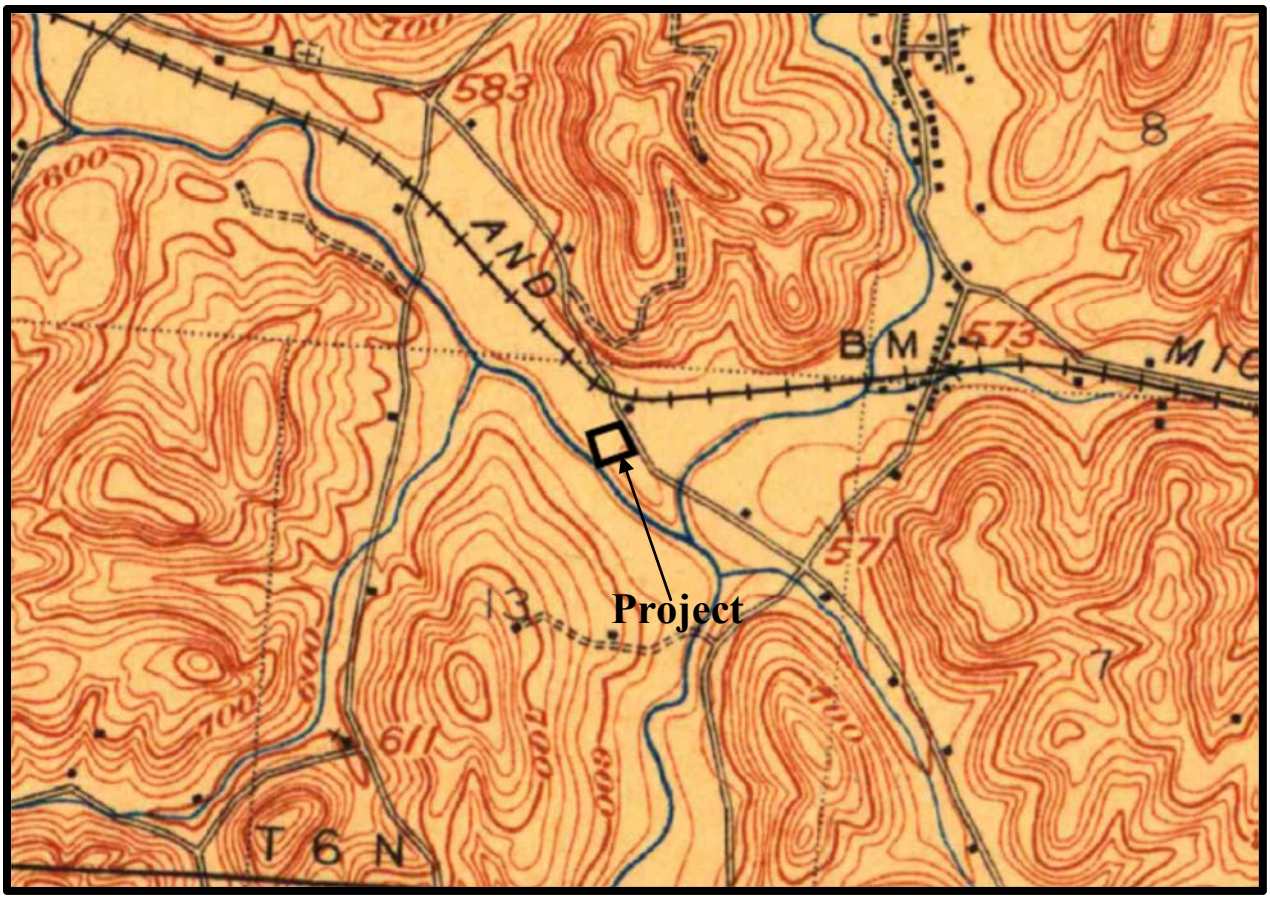

Figure 4. Portion of the USGS *1907 Pomeroy, Ohio 15 Minute Series (Topographic)* map indicating the approximate location of the project.

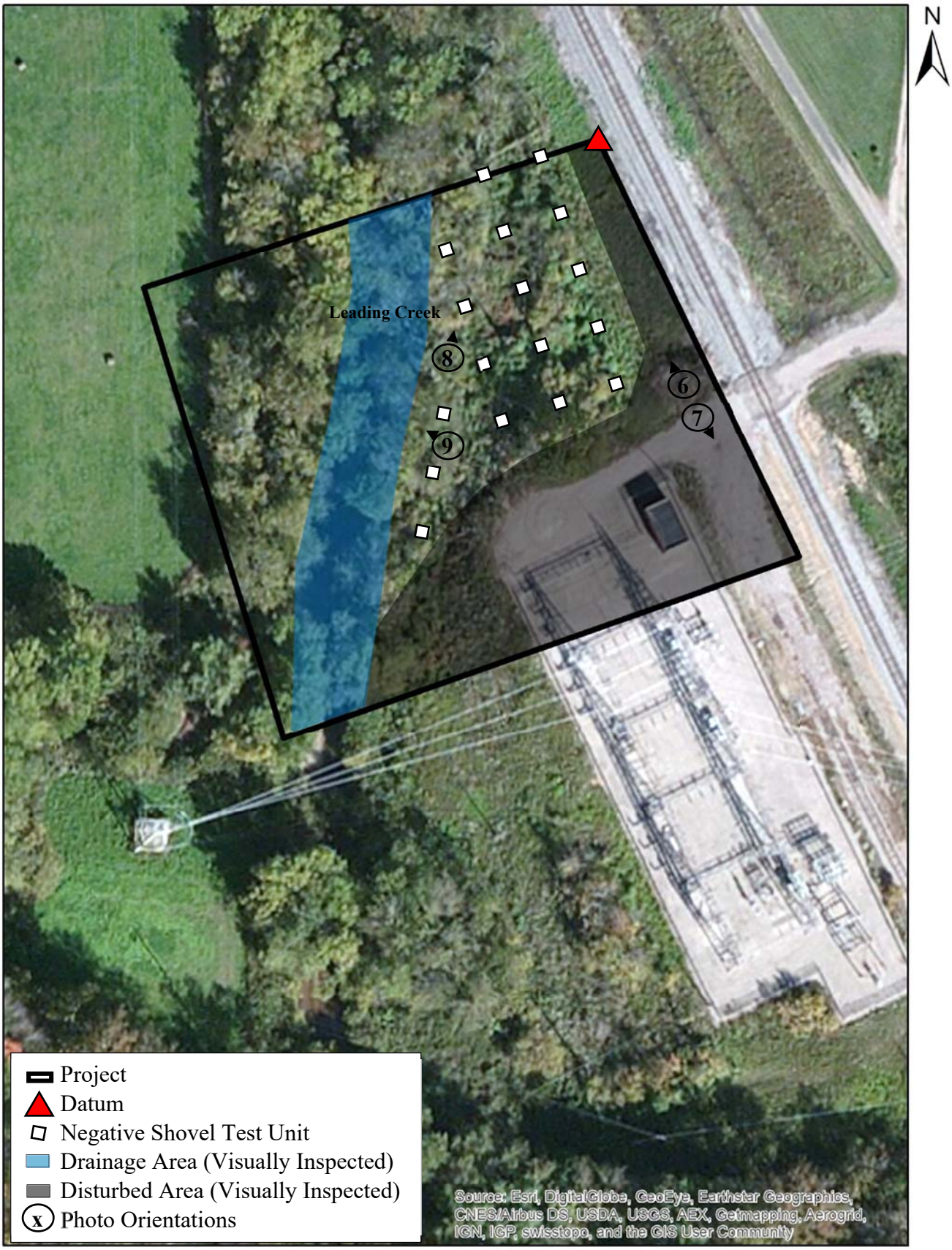

Figure 5. Fieldwork map of the project indicating the results of testing and photo orientations.

Figure 6. View of the disturbed conditions along the eastern portion of the project.

Figure 7. View of the disturbed conditions within the southeastern portion of the project.

Figure 8. View of the shovel tested area.

Figure 9. View of the conditions within the western portion of the project.

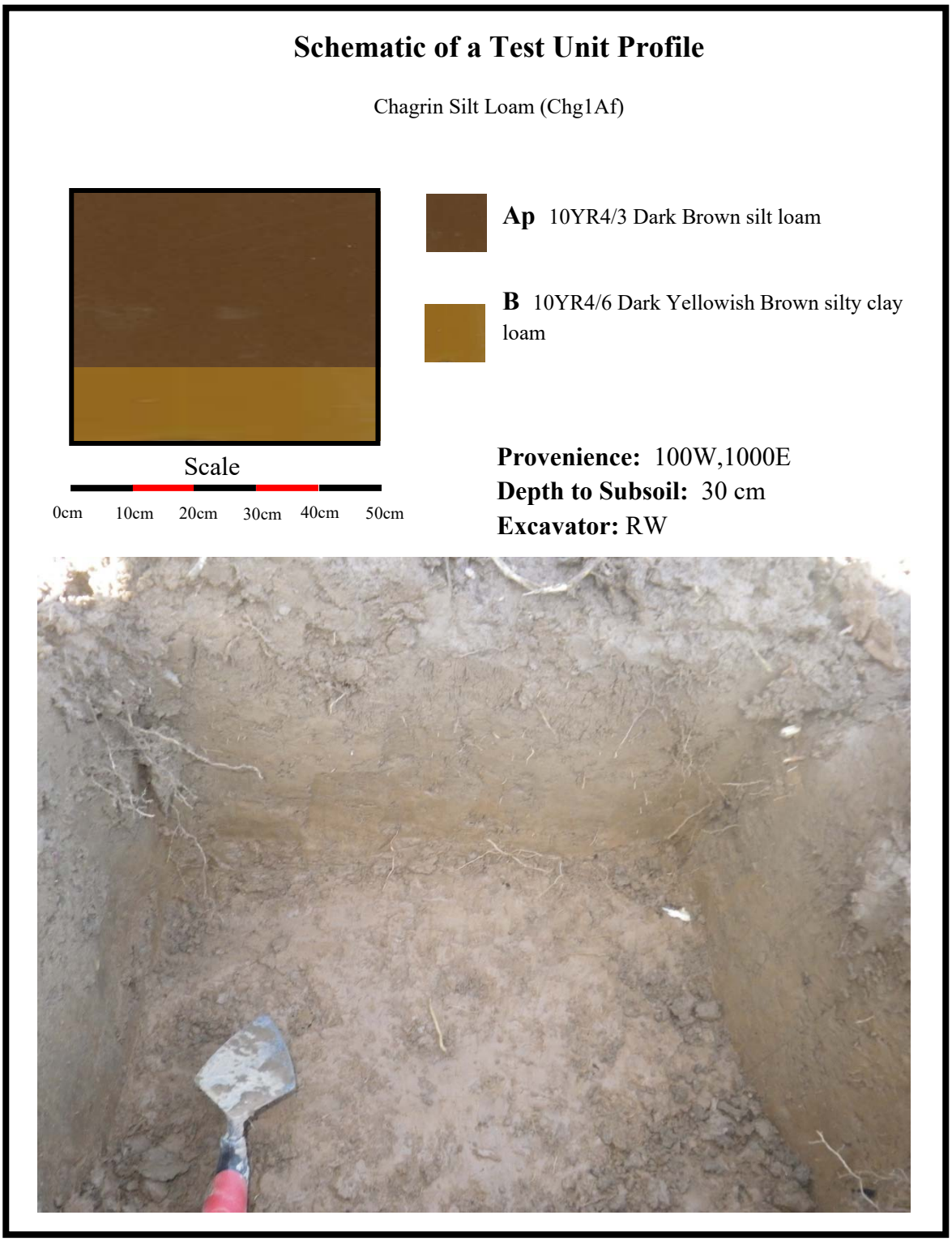

Figure 10. A typical shovel test unit excavated within the project.

Appendix D Ecological Features Inventory Report

Rutland Station Expansion Project, Meigs County, Ohio

Ecological Features Inventory Report

Prepared for:
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June 1, 2016

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1.0 INTRODUCTION

American Electric Power (AEP) is proposing to construct a 0.64 acre station expansion off of Higley Road, Rutland, Meigs County, Ohio (Figure 1, Appendix A). The Rutland Station Expansion Project area, approximately 1.94 acres, (Figure 1, Appendix A) was surveyed for wetlands, waterbodies, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on March 16, 2016. The proposed expansion area is shown on Figure 3, Appendix A and includes the project grading limits.

2.0 METHODS

2.1 WETLAND DELINEATION

Prior to conducting field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys, and aerial imagery mapping. Stantec completed a wetland delineation study in accordance with the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain Piedmont* (Version 2.0) (USACE 2012). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

2.2 STREAM DELINEATION

Streams that demonstrated a defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (2002). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency's (OEPA 2012) Headwater Habitat Evaluation Index (HHEI) and/or Qualitative Habitat Evaluation Index (QHEI). The waterway was identified and surveyed using a handheld sub-meter accuracy GPS unit and mapped with GIS software. Upland drainage features were also delineated within the Project area. These features lack a continuously defined bed, bank, and ordinary high water mark.

2.3 RARE SPECIES

Prior to conducting the field surveys, Stantec contacted the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats of concern within the vicinity of the Project area (Appendix B – Agency Correspondence). To assess potential impacts to rare,

threatened, or endangered species, Stantec scientists conducted a pedestrian reconnaissance of the proposed Project area, collected information on existing habitats within the Project area, and assessed the potential for presence of habitats to be used by species identified by these agencies.

3.0 RESULTS

Stantec completed field surveys within the Project area on March 16, 2016, for wetlands, waterbodies, and threatened and endangered species or their habitats. Figure 2 (Appendix A) shows the wetlands and waterbodies identified by Stantec within the Project area. Figure 3 (Appendix A) shows the habitats identified within the Project area during the rare, threatened, and endangered species habitat assessment surveys. Representative photos of the wetlands, streams, open water feature, upland drainage features, and other habitats identified within the Project area are included in Appendix C of this report (photo locations are shown on Figures 2 and 3, Appendix A). Completed QHEI data forms are included in Appendix D.

3.1 TERRESTRIAL HABITAT

Table 1. Vegetation Communities and Land Cover Found within the Rutland Station Expansion Project, Meigs County, Ohio

Vegetative Communities and Land Cover Types within the Study Area:	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Acres Within Project Area
Old Field	Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders or native highly tolerant taxa)	No	0.37
Open Water	Stream 1 (Leading Creek)	No	0.25
Scrubland/Early Successional Forest	Intermediate Disturbance (dominated by plants that typify a stable phase of a native community that persists under some disturbance)	No	0.53
Industrial Land	Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders or native highly tolerant taxa)	No	0.49
Disturbed Land	Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders or native highly tolerant taxa)	No	0.30
		Total	1.94

3.2 STREAMS

Table 2. Summary of Stream Resources Found within the Rutland Station Expansion Project, Meigs County, Ohio

Stream Name	Photo Numbers[1]	Receiving Waters	Cowardin Stream Classification	Stream Flow Regime[2]	Stream Evaluation Method	Stream Evaluation Score	OHWM Width (feet)[3]	Delineated Length (feet)
Stream 1 (Leading Creek)	1-2	Ohio River	R4SB5	Perennial	QHEI	45.5	30	364.7
[1]Appendix C – Representative Photographs								
[2]Stream classification is based on Federal Register/Vol. 67, No. 10 (2002)								
[3]OHWM = Ordinary High Water Mark								

3.3 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 3. Summary of Potential Ohio State-Listed Species within the Rutland Station Expansion Project, Meigs County, Ohio

Common Name	Scientific Name	State[1] Listing	Known to Meigs County?	Known Within One Mile of Project Area?[2]	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/ Recommendations
Mammals								
Indiana Bat	*Myotis sodalis*	E	Yes	No	This bat is likely distributed throughout Ohio, though not uniformly. It generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas. Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007, USFWS 2015). Roosts have occasionally been cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	Yes	Some potentially suitable habitat occurs in the Project area, but no suitable habitat occurs within the station grading limits.	If suitable habitat occurs, cut trees between October 1 and March 31.
Northern Long-eared Bat	*Myotis septentrionalis*	SC	Yes	No	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	Yes	Some potentially suitable habitat occurs in the Project area, but no suitable habitat occurs within the station grading limits.	No comment.
Big Brown Bat	*Eptesicus fuscus*	SC	Yes	No	During warm months, occurs in variety of habitats including near water, foraging over fields, in forest openings and in urban or suburban areas. Roosting sites can include buildings of various types, under bridges, in bat houses, etc. and winter hibernation sites can include mines and caves (ODNR Division of Wildlife 2016b).	Yes	No suitable habitat occurs within the grading limits of the Project area.	No comment.
Eastern Red Bat	*Lasiurus borealis*	SC	Yes	No	These are solitary roosting bats and roost sites include trees, shrubs, and clusters of weeds in summer months. They can hibernate in trees and tree cavities (ODNR Division of Wildlife 2016g).	Yes	No suitable habitat occurs within the grading limits of the Project area.	No comment.
Little Brown Bat	*Myotis lucifugus*	SC	Yes	No	In the winter months, these bats use caves, mines, etc. for hibernation and in warm months, they use tree cavities, man-made structures, etc. for roosting (ODNR Division of Wildlife 2016i).	Yes	No suitable habitat occurs within the grading limits of the Project area.	No comment.
Tri-colored Bat	*Perimyotis subflavus*	SC	Yes	No	In the winter months, these bats use caves, mines, etc. for hibernation and in warm months, they use tree cavities, man-made structures such as bridges, barns, sheds, etc. for roosting (ODNR Division of Wildlife 2016w).	Yes	No suitable habitat occurs within the grading limits of the Project area.	No comment.
Woodland Vole	*Microtus pinetorum*	SC	Yes	No	Occurs in deciduous and mixed forests where soils are loose and covered in thick leaf litter (SUNY ESF 2016b).	No	No suitable habitat occurs in within Project area.	No comment.
Deer Mouse	*Peromyscus maniculatus*	SC	Yes	No	Occurs in nearly every dry land habitat within its range, very adaptable. They can be found in forests, grasslands, shrub lands, agriculture fields, and deserts (ODNR Division of Wildlife 2016d).	Yes	Some suitable habitat occurs within Project area. Impacts are possible.	No comment.
Prairie Vole	*Microtus ochrogaster*	SC	Yes	No	Common on prairies, fence rows, old cemetaries, and other fairly dry places (ODNR Division of Wildlife 2016aa)	No	No suitable habitat occurs in within Project area.	No comment.
Smoky Shrew	*Sorex fumeus*	SC	Yes	No	Generally live in leave litter of birch and hemlock forests, and eat insects, such as	No	No suitable habitat	No comment.

Common Name	Scientific Name	State[1] Listing	Known to Meigs County?	Known Within One Mile of Project Area?[2]	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/ Recommendations
					earthworms and spiders (ODNR Division of Wildlife 2016bb).		occurs in within Project area.	
Black Bear	*Ursus americanus*	E	Yes	No	Can be found from coast to coast throughout North America in a wide variety of the more heavily wooded habitats, ranging from swamps and wetlands to dry upland hardwood and coniferous forests, from the Yukon and Northwest Territory in Canada to the northern portions of Mexico. Although they will utilize open areas, bears prefer wooded cover with a dense understory (ODNR Division of Wildlife 2016cc).	Yes	Some suitable habitat occurs within Project area. Impacts are possible.	Due to the mobility of this species, this project is not likely to impact this species.
Insect								
Plains Clubtail	*Gomphus externus*	E	Yes	No	Can be found in sandy or muddy streams and rivers with some current or wooded banks (Montana Field Guide 2016).	Yes	Some suitable habitat occurs within Project area. Impacts are possible.	No comment.
Amphibians								
Eastern Spadefoot	*Scaphiopus holbrookii*	E	Yes	No	Found only in areas of sandy soils that are associated with river valleys in southeastern Ohio. Breeding habitats are located within these areas and may include flooded agricultural fields or other water-holding depressions (ODNR Division of Wildlife 2016dd).	No	No suitable habitat occurs in within Project area.	Due to the location, habitat, and type of work proposed, this project is not likely to impact this species.
Mussels								
Fanshell	*Cyprogenia stegaria*	E	Yes	No	This mussel is found in medium to large streams with gravel substrates and strong current, in both deep and shallow water (NatureServe 2016c).	Yes	No in-water work is proposed; no impacts to fanshell are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Butterfly	*Ellipsaria lineolata*	E	Yes	No	This mussel is found in large rivers and stretches with pronounced current and substrate of course sand and gravel. It can also be found in deep impoundment areas (NatureServe 2016d).	Yes	No in-water work is proposed; no impacts to butterfly are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Elephant-ear	*Elliptio crassidens crassidens*	E	Yes	No	This mussel is found in muddy sand, sand, and rocky substrates in moderate currents. In some areas, it is common in large creeks to rivers with moderate to swift currents primarily on sand and limestone or rock substrates (NatureServe 2016e).	Yes	No in-water work is proposed; no impacts to elephant-ear are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Snuffbox	*Epioblasma triquetra*	E	Yes	No	Snuffbox is commonly found buried in the substrate. It is found in a wide range of particle sized substrates, however, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998, Watters et al. 2009).	Yes	No in-water work is proposed; no impacts to snuffbox are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Long-solid	*Fusconaia subrotunda subrotunda*	E	Yes	No	Occurs in medium to large rivers in sand and gravel with strong current (NatureServe 2016j).	Yes	No in-water work is proposed; no impacts to long-solid are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.

Common Name	Scientific Name	State[1] Listing	Known to Meigs County?	Known Within One Mile of Project Area?[2]	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/ Recommendations
Pink Mucket	*Lampsilis abrupta*	E	Yes	No	Occurs in large rivers with strong currents, rocky or boulder substrates, with depths up to 1 m, but is also found in deeper waters with slower currents and sand and gravel substrates (NatureServe 2016aa).	Yes	No in-water work is proposed; no impacts to pink mucket are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Sharp-ridged Pocketbook	*Lampsilis ovata*	E	Yes	No	This mussel is a generalist, occurring in different sized streams/rivers. Typically occurs in moderate to strong current with substrates of gravel and coarse sand (NatureServe 2016m).	Yes	No in-water work is proposed; no impacts to pocketbook are anticipated.	No comment.
Washboard	*Megalonaias nervosa*	E	Yes	No	Occurs in large rivers, typically in main channel or overbank areas of reservoirs. It is found in areas of slow current with muddy to coarse gravel substrates and water can be up to 50 feet (NatureServe 2016o).	Yes	No in-water work is proposed; no impacts to washboard are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Sheepnose	*Plethobasus cyphyus*	E	Yes	No	Although it does inhabit medium-sized rivers, this mussel generally has been considered a large river species. It may be associated with riffles and gravel/cobble substrate but usually has been reported from deep water (>2 m) with slight to swift currents and mud, sand, or gravel bottoms (NatureServe 2016bb).	Yes	No in-water work is proposed; no impacts to sheepnose are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Clubshell	*Pleurobema clava*	E	Yes	No	The clubshell is found in small to medium rivers, but occasionally found in large rivers, especially those having large shoal areas. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle and cannot tolerate mud or slackwater conditions (USFWS 1994). Badra (2001) found the clubshell in gravel/sand substrate, runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.	Yes	No in-water work is proposed; no impacts to clubshell are anticipated.	No comment.
Ohio pigtoe	*Pleurobema cordatum*	E	Yes	No	Occurs in medium to large rivers directly above riffles of gravel, cobble, and boulder, but occasionally in muddy or sandy or gravel habitats at great depths (NatureServe 2016q).	Yes	No in-water work is proposed; no impacts to Ohio pigtoe are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Pyramid pigtoe	*Pleurobema rubrum*	E	Yes	No	This mussel typically inhabits large rivers but may occur in medium-sized lotic environments. It tends to occupy riffles or shoals in relatively shallow water and coarse particle substrates, along sand bars, or in deep water (>4 m) with stable mud and muddy sand bottoms. Moderate to swift currents usually are associated with these habitats (NatureServe 2015cc).	Yes	No in-water work is proposed; no impacts to pyramid pigtoe are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Monkeyface	*Quadrula metanevra*	E	Yes	No	Found in medium to large rivers in gravel or mixed sand and gravel (NatureServe 2016dd).	Yes	No in-water work is proposed; no impacts to monkeyface are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Wartyback	*Quadrula nodulata*	E	Yes	No	Occurs in medium to large rivers generally in pools with depths up to 15-18 feet. Substrates include sand and mud (NatureServe 2016t).	Yes	No in-water work is proposed; no impacts to wartyback are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact

Common Name	Scientific Name	State[1] Listing	Known to Meigs County?	Known Within One Mile of Project Area?[2]	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/ Recommendations
								this species.
Black Sandshell	*Ligumia recta*	T	Yes	No	Typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more. Found in sand, gravel, or silt (NatureServe 2016k).	Yes	No in-water work is proposed; no impacts to black sandshell are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Threehorn Wartyback	*Obliquaria reflexa*	T	Yes	No	Habitat includes large rivers with moderately strong current and stable substrate of gravel, sand, and mud (NatureServe 2016p).	Yes	No in-water work is proposed; no impacts to threehorn wartyback are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Fawnsfoot	*Truncilla donaciformis*	T	Yes	No	Occurs in medium to large sized streams and rivers at variable depths. Substrates are typically either mud or sand with moderate current (NatureServe 2016w).	Yes	No in-water work is proposed; no impacts to fawnsfoot are anticipated.	The project must not impact freshwater native mussels at the project site. No in-water work is proposed, so this project is not likely to impact this species.
Purple Wartyback	*Cyclonaias tuberculata*	SC	Yes	No	Habitat is typically a gravel/mud bottom and it usually occurs at depths of less than two feet but can be found up to 20 feet in depth. Different forms of this mussel inhabit small to medium sized rivers and the main channel of large rivers (NatureServe 2016b).	Yes	No in-water work is proposed; no impacts to purple wartyback are anticipated.	No comment.
Round Pigtoe	*Pleurobema sintoxia*	SC	Yes	No	Occurs in medium to large rivers in mixed mud, sand, and gravel substrates. It occurs in current at a variety of depths (NatureServe 2016r).	Yes	No in-water work is proposed; no impacts to round pigtoe are anticipated.	No comment.
Kidneyshell	*Ptychobranchus fasciolaris*	SC	Yes	No	Commonly found in small to medium sized rivers. It has also been found in Lake Erie, Lake St. Clair, and Lake Chautauqua. It is found in riffle areas of streams with substrates firmly packed coarse gravel and sand with moderate to swift current (NatureServe 2016u).	Yes	No in-water work is proposed; no impacts to kidneyshell are anticipated.	No comment.
Salamander Mussel	*Simpsonaias ambigua*	SC	Yes	No	Habitat is typically sand or silt, under large, flat stones in areas of swift current in medium to large rivers and lakes (NatureServe 2016v).	Yes	No in-water work is proposed; no impacts to salamander mussel are anticipated.	No comment.
Deertoe	*Truncilla truncata*	SC	Yes	No	Habitat is typically fine gravel mixed with sand and mud, but it is a generalist in terms of river size (NatureServe 2016x).	Yes	No in-water work is proposed; no impacts to deertoe are anticipated.	No comment.
Reptile								
Queensnake	*Regina septemvittata*	SC	Yes	No	This aquatic snake prefers slow moving or shallow rocky creeks and rivers (ODNR Division of Wildlife 2016ee).	No	No suitable habitat occurs in within Project area.	No comment.
Fish								
Western Banded Killifish	Fundulus diaphanous menona	E	Yes	No	Found in areas with an abundance of rooted aquatic vegetation, clear waters, and with substrates of clean sand and organic debris free of silt (ODNR Division of Wildlife 2016ff).	No	No in-water work is proposed; no impacts to western	Avoid in-water work in perennial streams from April 15 - June 30. No in-water

Common Name	Scientific Name	State[1] Listing	Known to Meigs County?	Known Within One Mile of Project Area?[2]	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/ Recommendations
							banded killifish are anticipated.	work is proposed, so no impacts are anticipated.
Goldeye	*Hiodon alosoides*	E	Yes	No	Found in large rivers and are rather tolerant of (and actually seem to have a preference for) turbid waters from clay silts. They do not, however, tolerate industrial chemical pollutants (ODNR Division of Wildlife 2016gg).	Yes	No in-water work is proposed; no impacts to goldeye are anticipated.	Avoid in-water work in perennial streams from April 15 - June 30. No in-water work is proposed, so no impacts are anticipated.
Channel Darter	Percina copelandi	T	Yes	No	Found in large, coarse sand or fine gravel bars in large rivers or along the shore of Lake Erie (ODNR Division of Wildlife 2016hh).	No	No suitable habitat occurs in within Project area.	Avoid in-water work in perennial streams from April 15 - June 30. No in-water work is proposed, so no impacts are anticipated.
River Darter	Percina shumardi	T	Yes	No	Found in very large rivers typically in areas of swift current. They are found over gravel or rocky bottoms in depths of 3 feet or more (ODNR Division of Wildlife 2016ii).	No	No suitable habitat occurs in within Project area.	Avoid in-water work in perennial streams from April 15 - June 30. No in-water work is proposed, so no impacts are anticipated.
River Redhorse	*Moxostoma carinatum*	SC	Yes	No	This fish prefers only the largest rivers in the Ohio and Lake Erie drainages and are found in deep pools with moderate current over bedrock or gravel substrates (ODNR Division of Wildlife 2016p).	No	No suitable habitat occurs in within Project area.	No comment.
Speckled Chub	*Macrhybopsis aestivalis*	E	Yes	No	Found in sand and gravel runs of small to large rivers (NatureServe 2014).	Yes	No in-water work is proposed; no impacts to speckled chub are anticipated.	Avoid in-water work in perennial streams from April 15 - June 30. No in-water work is proposed, so no impacts are anticipated.
Paddlefish	*Polyodon spathula*	T	Yes	No	This fish is found in the Ohio River and its larger tributaries, preferring sluggish pools and backwater areas (ODNR Division of Wildlife 2016jj).	Yes	No in-water work is proposed; no impacts to paddlefish are anticipated.	Avoid in-water work in perennial streams from April 15 - June 30. No in-water work is proposed, so no impacts are anticipated.

[1]E= Endangered; T= Threatened; SC= Species of Concern
[2]According to correspondence from ODNR Natural Heritage Database – Appendix B

Table 4. Summary of Potential Federally-Listed Species within the Rutland Station Expansion Project, Meigs County, Ohio

Common Name	Scientific Name	Federal[1] Listing	Known to Meigs County?	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/Recommendations
Indiana bat	*Myotis sodalis*	E	Yes	This bat is likely distributed throughout Ohio, though not uniformly. It generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas. Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007, USFWS 2015). Roosts have occasionally been cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	Yes	Some potentially suitable habitat occurs in the Project area, but no suitable habitat occurs within the station grading limits.	If suitable habitat occurs, cut trees between October 1 and March 31. If trees must be cut during the summer months, then net surveys should be completed between June 1 and August 15, prior to any cutting.
Northern long-eared bat	*Myotis septentrionalis*	T	Yes	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	Yes	Some potentially suitable habitat occurs in the Project area, but no suitable habitat occurs within the station grading limits.	If suitable habitat occurs, cut trees between October 1 and March 31. If trees must be cut during the summer months, then net surveys should be completed between June 1 and August 15, prior to any cutting.
Fanshell	*Cyprogenia stegaria*	E	Yes	This mussel is found in medium to large streams with gravel substrates and strong current, in both deep and shallow water (NatureServe 2016c).	Yes	No in-water work is proposed; no impacts to fanshell are anticipated.	No comment
Pink mucket	*Lampsilis abrupta*	E	Yes	Occurs in large rivers with strong currents, rocky or boulder substrates, with depths up to 1 m, but is also found in deeper waters with slower currents and sand and gravel substrates (NatureServe 2016aa).	Yes	No in-water work is proposed; no impacts to pink mucket are anticipated.	No comment
Sheepnose	*Epioblasma triquetra*	E	Yes	Although it does inhabit medium-sized rivers, this mussel generally has been considered a large river species. It may be associated with riffles and gravel/cobble substrate but usually has been reported from deep water (>2 m) with slight to swift currents and mud, sand, or gravel bottoms (NatureServe 2016bb).	Yes	No in-water work is proposed; no impacts to sheepnose are anticipated.	No comment
Snuffbox	*Epioblasma triquetra*	E	Yes	Snuffbox is commonly found buried in the substrate. It is found in a wide range of particle sized substrates, however, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998, Watters et al. 2009).	Yes	No in-water work is proposed; no impacts to snuffbox are anticipated.	No comment

[1]E=Endangered; T=Threatened

4.0 CONCLUSIONS AND RECOMMENDATIONS

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species or their habitats within the Project area on March 16, 2016. During the field survey, one perennial stream totaling approximately 364.7 linear feet in length was delineated within the Project area.

The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project area at the time of the fieldwork. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

The Project area includes potential habitat for bat, fish, and mussel species listed in Tables 3 and 4. However, no occurrences of the bat species are known to exist within the Project area or a one-mile radius of it, according to correspondence received from the ODNR Natural Heritage Database (NHD) (Appendix B). Some potentially suitable habitat is present within the Project, but no suitable habitat occurs within the station expansion grading limits. However, if trees need to be cleared the USFWS (May 5, 2016) and ODNR Office of Real Estate (April 29, 2016), recommend clearing trees between October 1 and March 31 (Appendix B). If trees must be cut during the summer months, then net surveys should be completed between June 1 and August 15, prior to any cutting.

The ODNR NHD (Appendix B) stated that within one mile of the Project area a mussel bed (a breeding animal concentration) was found upstream of the proposed Project. The ODNR Office of Real Estate advised that mussel surveys be completed if in-water work is proposed (Appendix B). Similarly, the ODNR advised that no in-water work occur in perennial streams to avoid impacts to freshwater fishes and their habitat (see Table 3). However, no instream work is proposed at this time so impacts to aquatic species are not anticipated.

The ODNR noted the project is within the range of the eastern spadefoot toad, however due to the location, habitat, and type of work proposed, this project is not likely to impact this species. The project is also within the range of the black bear, however due to the mobility of the species, this project is not likely to impact this species.

The ODNR recommended that impacts to wetlands and other water resources be avoided or minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The USFWS responded on May 5, 2016 and stated that there are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the Project area. They also stated that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions.

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Summary: Letter of Notification -Request for Expedited Treatment electronically filed by Mrs. Erin C Miller on behalf of AEP Ohio Transmission Company