Biological and Environmental Services Related to Marine and Navigable Waterways Civil Works Activities in the Philadelphia District

Contract: W912BU-12-D-0021

November 26, 2014



Phase IA Cultural Resources Investigation Tookany Creek, Cheltenham and Abington Townships, Montgomery County, Pennsylvania



Prepared for: US Army Corps of Engineers Wanamaker Building 100 Penn Square East Philadelphia, PA 19107



Prepared by: Tetra Tech, Inc. 1320 North Courthouse Road, Suite 600 Arlington, VA 22201



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EXECUTIVE SUMMARY

Tetra Tech, Inc. (Tetra Tech), under contract to the US Army Engineer District, Philadelphia, conducted a Phase IA cultural resources investigation for the proposed Tookany Creek Flood Risk Management Feasibility Study (the Study). The investigation consisted of: (1) background research using available archival, library, and online sources on topics pertinent to the Study, including regional environment, history, architecture, and archeology; (2) a field inspection of the 11 proposed detention basins to evaluate prior ground disturbances and topographic characteristics that have influenced archeological sensitivity at each basin; (3) a field inspection to identify historic architecture resources located proximal to each proposed basin; and, (4) recommendations regarding further cultural resources investigations. The area of potential effects (APE) for archeology is defined as the estimated boundaries of construction of the eleven basins. The Phase IA investigation evaluated the archeological sensitivity of the Project APE and reviewed archeological site files and survey reports maintained by the Pennsylvania Bureau for Historic Preservation (BHP) within a one mile radius of each basin locale. For historic architecture resources, the Phase IA investigation collected information from an APE defined as the proposed basin locations plus a radius of 500 feet to account for potential visual effects.

The site file review indicates that one previous archeological survey has been conducted within one mile of the Project APE. That prior survey, undertaken to evaluate resources for the State Route 309 Improvement Project, identified no archeological sites within the Tookany Creek APE. An archeological site (36MG0077) consisting of quartz surface finds has been reported to BHP from a location approximately one kilometer northeast of the proposed Highland East Detention Basin in Abington Township. Site 36MG0077 has not been evaluated by eligibility criteria for listing on the National Register of Historic Places (NRHP).

The archeological field inspection indicates that nine of the proposed detention basin areas (Highland East, Highland West, Grove Park, Limekiln Pike, Church Road, West Waverly Road, Doe Lane, Greenwood, and Washington Lane) contain adjacent landforms that are considered to exhibit high archeological sensitivity for the presence of previously undocumented cultural resources. In addition, an extant concrete structural feature and slate steps were identified at Limekiln/Ogontz.

A review of historic architecture files at BHP identified twelve previously documented properties within the Historic Architecture Study Area. Field work confirmed the existence of eleven of these resources; one was demolished between 2008 and 2010. Two of these properties have been listed in the NRHP. In addition, field work identified two properties that may constitute a single, potentially NRHP-eligible resource.

Tetra Tech recommends Phase IB shovel testing might be required at the nine proposed detention basins listed above depending on the formal delineation of a Project APE that would accompany draft design plans for the flood control project. Tetra Tech also recommends further archival research might be required to assess the significance of the historic features identified at Limekiln/Ogontz. Tetra Tech recommends that the NRHP-eligibility of one newly identified historic resource may need to be assessed. The effect of the proposed Project on the previously

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NRHP-listed properties may also need to be assessed once the Project viewshed is clearly defined.



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1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech), under contract to the Philadelphia District Corps of Engineers, conducted a Phase IA cultural resources investigation for the proposed Tookany Creek Flood Risk Management Feasibility Study (the Study). The Project consists of 11 proposed detention basins located in Cheltenham and Abington Townships, Montgomery County, Pennsylvania (Figure 1). The area of potential effects (APE) for archeology is defined as the estimated boundary of construction at each basin. A contextual study area included each basin plus a one mile radius. Archeological sensitivity was evaluated for each basin APE. The APE for historic architecture resources was defined as each basin locale plus a 500-foot buffer. The purpose of the Phase IA investigation was to document, within the Project APEs, known and expected cultural resources, and visible ground disturbances, and to make recommendations for further Phase IB investigations pursuant to the provisions of Section 106 of the National Historic Preservation Act, 1966, as amended.

Tasks for this investigation included:

- a review of archeological site files and historic architecture forms online at PHMC's CRGIS website;
- a literature and map review to develop prehistoric and historic cultural contexts for the Project;
- a review of site forms and survey reports at the Bureau for Historic Preservation in Harrisburg;
- a field inspection of the Project locations to observe environmental features and ground disturbances associated with archeological sensitivity; and,
- a field inspection to evaluate potential visual impacts to historic architecture resources.

1.1 PROJECT DESCRIPTION

The Project consists of the proposed construction of 11 flood control detention basins throughout the Tookany Creek drainage in Cheltenham and Abington Townships. Construction activities will include clearing and grubbing vegetation, grading terrain, and the placement of bedrockanchored gabion-style dams.

The Phase IA reconnaissance, file and literature reviews, and report for this study conform to applicable regulations and guidelines, including 36CFR800, Guidelines for Archaeological Investigations in Pennsylvania, and Pennsylvania Architectural Field Guide (BHP 2008, PHMC 2014). Supervisory personnel for this survey exceeded the professional qualifications listed in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (National Park Service 1983) for principal investigators in archeology. Robert Jacoby, M.A., conducted the background research for archeology, history, and environment, and performed the field inspection for archeological sensitivity. James Sexton, Ph.D., conducted the background research and field inspection for historic architecture resources. Dr. Sexton and Mr. Jacoby co-authored this report. Sydne Marshall, Ph.D., RPA, serves as Tetra Tech's cultural resources lead.



2.0 BACKGROUND RESEARCH

Background research was conducted on the local region, county, and municipalities to place the Project area within its environmental, historical, and cultural context, to assist in evaluating the archeological sensitivity of the proposed detention basins and their areas of potential effects (APE). Reviewed documents included archeological site forms and survey reports and historic resource survey forms archived at the Pennsylvania Bureau for Historic Preservation in Harrisburg; archeological site and survey locational data maintained by the Pennsylvania Museum and Historic Commission (PHMC) on its CRGIS database; historic maps in the digital holdings of the New York Public Library, the Free Library of Philadelphia, the Lower Merion Library System, and the United States Geological Survey (USGS); and, available literature on geology, history, and other topics pertinent to the Project area.

2.1 Environmental Setting

The Project area is located within the Piedmont Uplands section of the Piedmont physiographic province. Tookany Creek along with Baederwood Creek and Rock Creek drains into Tacony Creek, a tributary of the Delaware River. Bedrock underlying the Project area is principally the Cambrian period Wissahickon Formation, consisting of politic schist and gneiss. The formation is interlayered with quartzite and amphibolite. The Cambrian period Chickies Formation outcrops less than one kilometer northwest of the Project area, and is composed of vitreous quartzite interlayered with quartzose schist (Bosbyshell 2006). Much of the lithic raw material recovered from local prehistoric sites derived from quartz and quartzite outcroppings of the Chickies Formation (Harral et al. 1997). Two soil associations are found within the Project area. The Made Land-Glenelg-Chester association consists of deep and moderately deep well-drained soils on undulating uplands. The Manor-Glenelg-Made Land associationare moderately deep and deep, well-drained soils situated on hilly uplands (Smith 1967). Aside from relatively small, isolated woodlots, the major portion of the Project area is currently a highly developed suburban landscape. The climax forest that was present when the first Europeans entered the region contained chestnut oak, white oak, red oak, hickories, ash, American elm, and yellow poplar among other species on uplands, with black cherry and black walnut predominating on floodplains (USDA 2014). The vast majority of native animal species that inhabited the Project area in AD 1600 have long since been extirpated through habitat loss and hunting. Wild animals presently occupying the Study Area include squirrel, raccoon, skunk, and fox, plus a variety of bird species.

2.2 Prehistoric Context

Archeologists recognize a sequence of regional cultural traditions in the eastern United States that can be viewed as responses to both continuity and change within environmental and cultural systems. Three major cultural patterns and time periods have been identified: Paleoindian, Archaic, and Woodland.

Human occupation of the Middle Atlantic region began at the end of the Pleistocene epoch by highly mobile groups of hunter-gatherers described as Paleoindians. Theories of the earliest peopling of North America are divided between Clovis-first and pre-Clovis settlers. The Clovis culture is distinguished by the manufacture of fluted, lanceolate-shaped spear points that have been found from the Great Plains to the eastern seaboard. The earliest Clovis occupations in the



Middle Atlantic region date to around 10,950 radiocarbon years before the present (RCYBP), represented by the Shawnee-Minisink Site on the Delaware River in Monroe County, Pennsylvania (Marshall 1985). Paleoindian groups practiced a range of subsistence strategies, including hunting big and small game, fishing, and collecting plants. Fish bones and seeds of hackberry and blackberry were recovered from Paleoindian levels at Shawnee-Minisink (Dent 1991:125). Cultural deposits dating up to several thousand years earlier than Clovis have been reported from the Meadowcroft Site in western Pennsylvania (Adovasio et al. 1999) and the Cactus Hill Site in Virginia (MacAvoy and MacAvoy 1997), although these early dates are rare and remain controversial. The Paleoindian period is considered to end around 10,000 BP. Two Paleoindian finds have been recorded in Montgomery County (Harral et al. 1997:11).

The adaptive strategies of groups during the Early Archaic period (c. 10,000 to 8000 BP) was more a continuation of established Late Paleoindian broad-spectrum subsistence practices than a dramatic shift to new routines. Bands remained nomadic but appear to have exploited more restricted territories than their Paleoindian predecessors, making more repetitive visits to fewer strategic locations (Anderson 2013). The addition of ground-stone implements to toolkits suggests that nuts and seeds had become an important component of Early Archaic diets. These adaptive modifications in subsistence practices were probably responses to increasingly dry conditions throughout the period and to the disappearance, by the end of the Paleoindian period, of the large herbivores that had been one component of early human diet and material culture. Climatic warming led to forest closure after 10,000 BP and increasing dominance of northern hardwoods over Boreal conifers, producing a more favorable habitat for such species as white-tailed deer and elk (Davis 1983, Snow 1980). Six sites with Early Archaic components have been identified in Montgomery County (Harral et al. 1997:11).

During the Middle Archaic (c. 8000 to 4500 BP), indigenous peoples lived in more widely distributed locations but settlement was still located along major waterways, falls, and lakes, and groups had developed a reliance on aquatic resources. Rising sea levels by this period had opened rivers to anadromous and catadromous fish, permitting people to fish and exploit spring and autumn spawning runs at inland locations. Montgomery County contains 10 sites with Middle Archaic diagnostic artifacts (Harral et al. 1997:11).

The Late Archaic period (circa 4500 to 3300 BP) appears to be characterized by increased population (as evidenced by larger and more numerous sites), the onset of long-distance trade networks, and an increased focus on riverine settings for site locations. These factors appear related to increased environmental stress caused by a shift toward a warmer, drier climate. Freshwater shellfish appeared in the mid-Hudson River during this period, and site assemblages from the Hudson Valley contain faunal evidence of beaver and muskrat (Funk 1992:10, Funk 1976:172). The manufacture and use of small notched point and narrow stemmed point types became common over broad regions of the Eastern Woodlands, tool styles that are found in the archeological record for extended periods. Ceremonialism grew in importance, indicated by more elaborate, formalized burial practices and the presence of exotic raw materials as symbols of enhanced status and rank (Fiedel 1992). The Late Archaic is the best represented prehistoric period in Montgomery County with 37 recorded sites (Harral et al. 1997:11).



The Early Woodland period (c. 3000 to 2000 BP) marks the inception of widespread ceramic vessel use, an important technological advance that revolutionized food preparation and storage strategies. While steatite had been a precursor of this new technology, it was a heavy material and geographically restricted in its distribution of source material. Not only could ceramic vessels be manufactured anywhere there was clay, but its portability and diversity of form encouraged the transport of food and the storage of surpluses. The Early Woodland period, however, continued many of the cultural and adaptive traits of the Late Archaic, notably the complexity of burial ceremonialism and the acquisition of certain exotic goods, such as high quality lithics, red ochre, shell beads, and copper. Several lines of evidence suggest that Early Woodland population levels in the Northeast declined compared with Late Archaic levels, perhaps a response to climatic cooling that adversely affected game numbers and flora availability (Fiedel 2001). This population decline (Dincauze referred to it as a "collapse" [1974:50-51]) may have been a critical factor in the adoption of ceramics and shellfish collecting as a means of increasing food supply through labor-intensive, yet efficient, activities. The Early Woodland period is poorly represented in Montgomery County with only five documented sites (Harral et al. 1997:11).

An apparent population decline during the preceding Early Woodland period reversed during the early phase of the Middle Woodland (c. 2000 to 1000 BP) as sea level and climates stabilized. It is from this point on that the first truly large shellfish middens occur in coastal southern New England and Long Island (Bernstein 1993), and an increase in the number of storage pits is noted in the archeological record (DeBoer 1988, Snow 1980:282). The rich focus on burial ceremonialism and exotic goods of the Late Archaic and Early Woodland periods is not identified archeologically during the Middle Woodland, an indication to some researchers that long-distance trade was contracting, perhaps due to increased competition for resources at the margins of ethnic group boundaries. There is, instead, an emphasis on exploiting local resources and exploring variations in ceramic styles. During this period, settlement patterns have a decidedly riverine focus. Twelve (12) Middle Woodland sites have been reported in Montgomery County (Harral et al. 1997:11).

Important cultural adaptations during the Late Woodland period (c1000 to 400 BP) have been archeologically recognized on a wide scale in Pennsylvania and across much of eastern North America, and include the tending of cultigens (maize, beans, and squash), decrease in residential mobility, and use of the bow and arrow as a new and highly efficient hunting (and warring) weapon. These adaptations are perhaps all related to the region's population rise, with increased competition for resources and an intensification of local ethnic identity as manifested in greater variation in ceramic design. A total of 21 Late Woodland period sites, mostly located on upper river terraces, have been registered in Montgomery County (Harral et al. 1997:11).

2.3 HISTORIC CONTEXT

The earliest recorded European visitors to the lower Delaware Valley arrived in the sixteenth century, although settlement did not occur until the seventeenth century. The principal tribe of Native Americans at the time of European settlement along the Delaware River was the Lenape, who spoke a Unami dialect of the coastal Algonquian language group (Kraft 1986:xv). Early in the 1600s, the Dutch began to settle the area between the Delaware and Hudson Rivers, establishing the colony of New Netherlands from Delaware Bay to Albany. The first permanent



European settlers in the Project area, however, were Swedes who had established their New Sweden colony on the lower Delaware and Christina Rivers in the 1640s. Sovereignty passed to the Dutch in the 1650s and to the English a decade later when the Duke of York seized all of New Netherlands in the name of the English crown. In 1681, King Charles II of England granted William Penn 40,000 acres of land, which became known as Pennsylvania. William Penn envisioned a new colony that held religious tolerance as its main virtue, and subsequently English Quakers, who were persecuted for their beliefs in Europe, began to settle in Pennsylvania (Moretta 2007). The Quakers were followed closely by the Mennonites and other German Anabaptist settlers. Despite tolerance toward European dissident groups, the Lenape and their northern neighbors, the Munsee, suffered displacement as a result of European settlement, hostility, and pandemic, and together began a migration westward around 1730 (Becker 1986:98). Both groups were often referred to by Europeans as the Delaware Indians, based on their homelands along that river.

William Penn set in motion the creation of a great colonial town, and named it Philadelphia, "city of brotherly love." Philadelphia enjoyed good harborage along the Delaware River, inland access via the Schuykill River, and rich agricultural land, making it the largest city in the 13 original colonies on the eve of the American Revolution with around 23,000 people. Although surpassed by New York in population and wealth by 1800, Philadelphia remained an important city, and through the nineteenth century was at the center of America's most heavily industrialized landscape.

The Project area lies within Montgomery County, located northwest of Philadelphia. European settlement into Montgomery County was underway by the end of the seventeenth century, when its fertile land began to be cleared for farms and its streams utilized for water-powered mills. The early transportation network leading out of Philadelphia resembled a hub and spoke structure, with roads connecting the City to Wilmington, New Hope, York, Easton, Bethlehem, and Lebanon. Native American trails were often utilized and improved for wheeled transport. The Bethlehem Pike was established in 1714 along the Minsi Path, an Indian trail that connected the lower Delaware Valley with the upper Delaware Valley near the town of Port Jervis, New York. Old York Road was authorized in 1693, laid out in1711, and traverses the eastern edge of the Project area, connecting Philadelphia and New Hope. Other colonial era roads in the Project vicinity include Limekiln Pike, Church Road, and Germantown Pike (Figure 2) (Morgan 1945). A stage line was established between Philadelphia and Bethlehem through Montgomery County in 1763 (Bean 1884:129).

The first recorded mill along Tookany Creek was Richard Dungworth's gristmill, built in 1690, and around which Cheltenham Village became established (Fisher 1939). Other gristmills were built in following years and became the nucleus for the villages of Shoemakertown, Ashbourne, and Abington. It was in Abington that the first Quaker Meeting House in Montgomery County was established in 1697 (Bean 1884:684). The Project area was significantly affected by the political and military events of the American Revolution. After the British occupied Philadelphia in 1777, residents of Montgomery County were cut off from commerce with the region's largest port. They also found themselves in harm's way following the defeat of Washington's forces at Germantown and the Continental Army's retreat to Whitemarsh, northwest of the Project area. In early December 1777, General William Howe, British commander in Philadelphia, led his army



up Old York Road through Cheltenham to attack the Americans before the onset of winter. Skirmishes occurred between the British and American militia at Edge Hill in Cheltenham on December 8, 1777. Although the fighting was largely favorable for the British, Howe decided that American defenses were too strong and returned his forces to Philadelphia (Bean 1884: 688). Following the withdrawal of British forces from Philadelphia in June 1778, Montgomery County residents reclaimed a substantial amount of economic and political stability.

The North Pennsylvania Railroad was the first rail line into the Project area in 1857, and created an immediate and significant impact on the region's growth (Figures 3, 4, and 5) (Bean 1884:802). Farmers and millers obtained ready access to the Philadelphia markets, and the city's elites acquired "country" estates a short train ride away. As millseats had done in the previous century, rail stations became the nucleus for commercial and residential development in the nineteenth century. Trains also heralded the transition from water-powered to steam-powered mills, allowing for increased production and the manufacture of finished iron implements. Cheltenham became the center of a shovel and spade industry in the second half of the nineteenth century (PDP 1999:2.5). Trolley car service flourished in the region around the turn of the twentieth century, with one line on Old York Road in 1894 and another on Bethlehem Pike in 1902 (Hocker 1956). With the rapid advent of buses and private cars, these lines stopped running in 1940 and 1926, respectively.

2.4 Previous Archeological Investigations

GIS data maintained by BHP indicates that one archeological survey has been conducted within one mile of the Project area. Harral et al. (1997) undertook investigations for the State Route 309 Improvement Project, from the junction of Route 309 and Easton Avenue northwestward to the junction with State Route 63. This survey identified six previously unrecorded prehistoric lithic sites, none of which are located within one mile of the Tookany Creek Project area. Phase II testing was conducted on the six sites and determined that none were NRHP-eligible. Harral et al. (1997:133) did recommend that the locale of the six sites, due to "...the nature of the artifact assemblages, their presence within the same drainage, and their location near a local lithic source..." constituted an archeological district (the Chickees Formation Quartz Procurement Archaeological District) and was potentially NRHP-eligible.

The Carr No. 1 Site (36MG0077) is an open habitation, prehistoric site located approximately 1,000 meters northeast of the proposed Highland East detention basin. The site is characterized by quartz lithic material and has not been evaluated by NRHP eligibility criteria. The Carr No. 1 Site is the only recorded archeological site located within one mile of the Project APE.

2.5 Previously Documented Historic Architecture Resources

The historic architecture site files maintained by BHP indicate that 12 sites had previously been documented within the Historic Architecture APE. Information about these sites, including their Key #, town, address, name, the section of the APE where they are located and the SHPO determination of eligibility to the National Register of Historic Places (NRHP) are listed below:



Table 1: Previously Documented Historic Resources

| Key# | Town | Address | Name | APE Section | PMHC Determination |
|--------|------------|----------------------------|-----------------------------------|--|--------------------------------------|
| 102377 | Cheltenham | 141 South Lynnwood Ave. | Shady Nook Farm | Grove Park | Insufficient Information to Evaluate |
| 155857 | Cheltenham | 400 Harrison Ave. | Glenside Elementary School | Limekiln-Church- West Waverly- Doe | Not Eligible to NRHP |
| 112549 | Cheltenham | 2543 W. Church Rd. | Mason Property | Limekiln-Church- West Waverly- Doe | Insufficient Information to Evaluate |
| 112546 | Cheltenham | 2549 W. Church Rd. | None | Limekiln-Church- West Waverly- Doe | Insufficient Information to Evaluate |
| 112543 | Cheltenham | 2551 W. Church Rd. | None | Limekiln-Church- West Waverly- Doe | Insufficient Information to Evaluate |
| 112573 | Cheltenham | 1017 Greenwood Ave. | Charles Hewett Elvetham Estate | Greenwood | Insufficient Information to Evaluate |
| 155627 | Cheltenham | 1300 Spruce Ln. | William & Ruth Leshner House | Greenwood | Not Eligible to NRHP |
| 103293 | Cheltenham | 1250 W. Church Rd. | Curtis Hall | Washington Lane | Listed in NRHP |
| 112600 | Cheltenham | 1421 Hopeland Rd. | Ogontz Farm | Washington Lane | Insufficient Information to Evaluate |
| 112597 | Cheltenham | 1468 Ashbourne Rd. | None | Washington Lane | Insufficient Information to Evaluate |
| 112594 | Cheltenham | 1150 Church Rd. | Milmoral | Washington Lane | Listed in NRHP |
| 112637 | Cheltenham | 7907 Toby Leech Dr. | Ronaele Manor Outbuilding | Washington Lane | Insufficient Information to Evaluate |

Desktop research using Google Earth aerial photos show that the Glenside School, Key # 155857, was demolished between October, 2008 and April, 2010.



3.0 FIELD INSPECTIONS

3.1 ARCHEOLOGICAL FIELD INSPECTION

Archeological field inspections of the Project APE were conducted on October 7, 2014. Each of the 11 proposed detention basin locations was investigated to assess the extent of previous ground disturbance and to evaluate their potential archeological sensitivity.

3.1.1 Highland East Detention Basin

The Highland East Detention Basin is located east of Highland Avenue in Abington Township, along an unnamed tributary of Baederwood Creek (Figure 1). It is characterized by a meandering channel bordered by uplands to the east and west. The stream bed is extremely stony, with platy micaceous schist manifested as slabs, cobbles, and gravel (Photo 1). The channel appears to have repeatedly migrated between its current position and the T1 terrace to the west. This terrace exhibits little soil development and abundant rock. High archeological sensitivity is limited to a small segment of the eastern bank uplands (Photo 2). A review of historic maps reveals no buildings or structures depicted within the Highland East Detention Basin APE (Figures 3, 4, and 5).

3.1.2 Baeder Road Detention Basin

The Baeder Road Detention Basin is located east of Highland Avenue in Abington Township, along Baederwood Creek (Figure 1). It is situated downstream of the Highland East and Highland West basins. The Baeder Road basin exhibits a meandering stream bed with extremely abundant micaceous schist as slabs, cobbles, and gravel (Photo 3). The east and west banks are low-lying, have little soil development, and probably supported the migrating stream at various times past. The Baeder Road Detention Basin is considered to have low archeological sensitivity. A review of historic maps reveals no buildings or structures within the Baeder Road Detention Basin APE (Figures 3, 4, and 5).

3.1.3 Highland West Detention Basin

The Highland West Detention Basin is located west of Highland Avenue in Abington Township, along Baederwood Creek (Figure 1). The stream course is fairly straight and stony, with low-lying terraces on both banks (Photo 4). Bedrock crops out along the eastern third of the stream. The north bank is landscaped as parkland (Photo 5). An earthen flood detention basin has been dug out along a portion of the north bank to a depth below grade of between 0.5 and 1 meter. Segments of both banks exhibit high archeological sensitivity. A review of historic maps reveals no buildings or structures within the Highland West Detention Basin APE (Figures 3, 4, and 5).

3.1.4 Grove Park Detention Basin

The Grove Park Detention Basin is located east of South Lynnwood Avenue in Cheltenham Township (Figure 1). The stream flows through generally level terrain and is entrained less than one meter below surrounding grade. The western bank and portions of the eastern bank are landscaped as parkland (Photo 6). A drainage outfall was noted emptying into the western stream bank. Segments of both banks exhibit high archeological sensitivity. A review of historic maps



reveals no buildings or structures within the Grove Park Detention Basin APE (Figures 3, 4, and 5).

3.1.5 Limekiln Pike Detention Basin

The Limekiln Pike Detention Basin is located on the west side of Limekiln Pike (State Route 152) along Tookany Creek in Cheltenham Township (Figure 1). The streambed has a straight course, contains moderate amounts of micaceous schist in the form of slabs, cobbles, and gravel, and is incised into its banks to depths between 0.5 meters to 1 meter (Photo 7). Portions of both banks have been landscaped as rear yards, with the north bank sloping upward to meet the Glenside School's playgrounds (Photo 8). A drainage outfall was observed emptying into the north bank approximately 50 meters west of Limekiln Pike. Aside from the outfall line and minimal landscaping, the Limekiln Pike Detention basin exhibits high archeological sensitivity through its full length. A review of historic maps reveals no buildings or structures within the Limekiln Pike Detention Basin APE (Figures 3, 4, and 5).

3.1.6 Church Road Detention Basin

The Church Road Detention Basin is located along Tookany Creek between West Waverly Road and Church Road in Cheltenham Township (Figure 1). The western margin of the stream is incised between 3 meters to 4 meters into the bank. The western end of the north bank supports the remains of an abandoned greenhouse, and a landscaped soccer field (Photo 9). The western end of the south bank slopes gradually upward from the stream, reaching about a 10 percent incline. The eastern two-thirds of the proposed basin is part of a landscaped park (Photo 10). In this section, the stream is incised into the banks approximately 0.5 meters to 1 meter. The eastern margin of the north bank slopes upward from the stream approximately 5 percent to 6 percent. Much of the detention basin exhibits high archeological sensitivity. A review of historic maps reveals no buildings or structures within the Church Road Detention Basin APE (Figures 3, 4, and 5).

3.1.7 West Waverly Road Detention Basin

The West Waverly Detention Basin is located along Tookany Creek, west of West Waverly Road in Cheltenham Township (Figure 1). The stream course exhibits a moderate degree of meander within its low-lying banks (Photo 11). The north bank is nearly level and meets the landscaped grounds of Holy Sepulcher Cemetery. The southern margins of the proposed detention basin have been impacted by the elevated berm of PA Route 309, with patches of common reed (*Phragmites australis*) indicating areas of poor to very poor drainage (Photo 12). Other portions of the south bank exhibit limited soil development and abundant quantities of cobbles and gravel. It appears that the stream has migrated back and forth across the southern margin of the proposed basin. Portions of the north bank exhibit high archeological sensitivity. A review of historic maps reveals no buildings or structures within the West Waverly Road Detention Basin APE (Figures 3, 4, and 5).

3.1.8 Doe Lane Detention Basin

The Doe Lane Detention Basin is located along the headwaters of Tookany Creek on the south side of Doe Lane in Cheltenham Township (Figure 1). The stream is entrained within a narrow U-shaped valley within which it exhibits a moderate degree of meander (Photo 13). Low-lying



portions of the streambank exhibit vehicle ruts and tree throws. The northern section of the west bank is a landscaped yard (Photo 14). This proposed detention basin is generally low archeological sensitivity; a portion of the landscaped yard exhibits high sensitivity. A review of historic maps reveals no buildings or structures within the Doe Lane Detention Basin APE (Figures 3, 4, and 5).

3.1.9 Limekiln/Ogontz Detention Basin

The Limekiln/Ogontz Detention Basin is located along Rock Creek west of Limekiln Pike in Cheltenham Township (Figure 1). The basin is entrained within a broad U-shaped valley with steep slopes on the south bank. A portion of the stream is ponded (Photo 15). There is considerable erosion and tree throws evident along much of the south bank (Photo 16). An abandoned concrete feature is situated into the stream (Photo 17). It may be associated with a water-powered mill but historic maps do not depict any structures at this location (Figures 2, 3, 4, and 5) Elements of slate steps were observed on the south bank slope leading from Cheltenham Avenue toward the concrete feature (Photo 18). The north bank slopes nearly continuously from the stream edge to a residential development to the north. The stream at the eastern end of the proposed basin is conveyed via a buried culvert. The proposed basin exhibits low archeological sensitivity for prehistoric resources. The concrete feature and slate steps indicate high archeological sensitivity for historic resources. A review of historic maps does not reveal buildings or structures within the Limekiln/Ogontz Detention Basin APE. The historic property ownership immediately north of the stream is ascribed to a 'T. Williams' on the 1871 county atlas (Figure 4) followed by the Pennsylvania & Northern Railroad Company in the 1890s (Figure 5). The concrete feature and steps may be associated with one or both of these prior owners.

3.1.10 Greenwood Detention Basin

The Greenwood Detention Basin is located along an unnamed tributary of Rock Creek to the west of Greenwood Avenue in Cheltenham Township (Figure 1). The west bank rises steeply from the stream edge. As the stream ascends to the northwest, it becomes deeply incised, reaching 10 meters in depth to the west bank. Ground disturbances in the form of push piles and excavated basins were observed along the northern margin of the west bank (Photo 19). The east bank proximal to Greenwood Avenue is a T1 terrace, fairly level, and partially landscaped (Photo 20). The northern margin of the east bank gently slopes to the north. The west bank of the proposed detention basin exhibits low archeological sensitivity. Much of the east bank exhibits high archeological sensitivity. A review of historic maps reveals no buildings or structures within the Greenwood Detention Basin APE (Figures 2, 3, 4, and 5).

3.1.11 Washington Lane Detention Basin

The Washington Lane Detention Basin is located along Rock Creek, south of Rock Creek Road and west of Washington Lane in Cheltenham Township (Figure 1). The streambed contains abundant micaceous schist in the form of slabs, cobbles, and gravel (Photo 21). The south bank rises steeply and supports large bedrock outcroppings. The entire north bank is low-lying terrace and mostly landscaped lawns of Curtis Park (Photo 22). The western margin of the proposed basin exhibits a somewhat meandering streambed with little soil development and abundant rock. The south bank contains low archeological sensitivity, while much of the north bank is highly



sensitive. The 1871 county atlas (Hopkins 1871) depicts a building along the south bank of Rock Creek situated west of Washington Lane that is attributed to Jay Cooke (Figure 3). Cooke was a wealthy financier in the mid-nineteenth century whose Cheltenham Township estate lay on both sides of Washington Lane. His residence is shown east of that road on the 1871 county atlas.

3.2 HISTORIC ARCHITECTURE FIELD INSPECTION

The APE for historic architecture was defined as the area within 500 feet of the estimated footprint of the detention basins. Historic architecture field inspections of the APE were conducted on November 4 and 5, 2014. Tetra Tech's architectural historian undertook a pedestrian survey of the APE for each of the 11 proposed detention basin locations to assess the potential for adverse visual effects to historic properties. Photographs of representative buildings and streetscapes were taken with a digital SLR camera outfitted with a hotshoe geotagger to capture locational information about photographed resources. As the APEs for several of the basins overlapped, they were assessed in five groups:

- Highland East, Highland West, and Baeder Road Detention Basins,
- Grove Park Detention Basin,
- Limekiln Pike, Church Road, West Waverly Road, and Doe Lane Detention Basins,
- Limekiln/Ogontz Detention Basin, and
- Greenwood Detention Basin.

In addition to identifying any new properties that might be eligible for the NRHP, Tetra Tech also confirmed the existence of those properties within the APE that had previously been documented in the PMHC's CRGIS database.

Tetra Tech made a recommendation on the potential eligibility of the observed properties where no previous determination had been made by the PMHC. Previous determinations included "Listed," "Not Eligible," and "Insufficient Information to Evaluate." In cases where there was insufficient information, Tetra Tech provided a preliminary assessment of eligibility.

3.2.1 Highland East, Highland West, and Baeder Road Detention Basins

This is the northern- and eastern-most group of proposed detention basins (Figure 6). The Highland East Detention Basin is located east of Highland Avenue in Abington Township, along an unnamed tributary of Baederwood Creek. The Highland West Detention basin is located west of Highland Avenue in Abington Township, along Baederwood Creek. The Baeder Road Detention Basin is located east of Highland Avenue in Abington Township, along Baederwood Creek. The neighborhoods in this portion of the APE are all residential, with houses in a variety of different styles, although Colonial Revival buildings, often using fieldstone masonry, are the most common (Photograph 23). South and east of the Baeder Road and Highland East detention basins, the houses appear to date to the beginning of the twentieth century with infill post-World War II housing (Photograph 24). At the northern edge of the APE is the Jericho Manor Apartment complex, with three large garden apartment buildings (Photograph 25). In the western section of the APE the houses have much less variety, with similar forms being repeated, suggesting that they were constructed by a single developer (Photographs 26 and 27). None of the properties within this portion of the APE have been previously documented; Tetra Tech does



not recommend any of the properties as potentially eligible to the NRHP, either individually or as a component of a historic district.

3.2.2 Grove Park Detention Basin

The Grove Park Detention Basin is located east of South Lynnwood Avenue in Cheltenham Township (Figure 6). The APE is predominantly residential; the northern edge of it does include a section of mixed commercial and residential buildings along West Glenside Avenue (Photograph 28). One previously documented property, Shady Nook Farm (141 South Lynwood Avenue) is located within this section of the APE (Photograph 29). Other buildings in this section of the APE date from the late nineteenth century through the middle of the twentieth, with both single- and two-family houses. Southeast of the proposed basin, along Lismore and Harrison Avenues, the buildings are a relatively heterogeneous mix with the Queen Anne, Second Empire, and Colonial Revival styles represented (Photograph 30). Northwest of the basin -- especially along S. Lynnwood Road, Montier Avenue, Cherry Lane -- the houses are more homogenous, with several plan types being repeated in areas, suggesting that these sections of the neighborhood were developed by a single developer at a single time (Photograph 31). Shady Nook Farm lacks sufficient architectural significance to be recommended as potentially eligible to the NRHP, either individually or as part of a historic district. Similarly, none of the other buildings within this portion of the APE is recommended as potentially eligible to the NRHP, either individually or as part of a historic district.

3.2.3 Limekiln Pike, Church Road, West Waverly Road, and Doe Lane Detention Basins

This group of four proposed detention basins is the westernmost element of the project. The Limekiln Pike Detention Basin is located on the west side of Limekiln Pike (State Route 152) along Tookany Creek in Cheltenham Township. The Church Road Detention Basin is located along Tookany Creek between West Waverly Road and Church Road in Cheltenham Township. The West Waverly Detention Basin is located along Tookany Creek, west of West Waverly Road in Cheltenham Township. The Doe Lane Detention Basin is located along the headwaters of Tookany Creek on the south side of Doe Lane in Cheltenham Township (Figure 6). While this is the largest section of the APE, it contains relatively few streets. Much of the land is occupied by the Holy Sepulcher Cemetery, located on both sides of West Waverly Road (Photograph 32). Elsewhere the area is residential. A small collection of late nineteenth century buildings is located east of the intersection of Church Road and West Waverly Road (Photograph 33). Several of these appear to have been noted on the 1871 Hopkins map of the area (Figure 3). Three of these properties, 2543, 2549, and 2552 West Church Road, have been previously documented (Table 1). The buildings along Oak Road, many of which are two-family houses, appear to have been constructed early in the twentieth century, likely between the World Wars (Photograph 34). The vast majority of the other buildings appear to have been constructed by developers during a post-World War II boom. The houses often have very similar appearances, as can be seen along parts of General Patterson Drive, Church Road, Waverly Road, and Doe Lane (Photograph 35). The Glenside Elementary School at 400 Harrison Avenue was previously documented; Google Earth aerial photos show that the school was demolished between October, 2008 and April, 2010. The three remaining previously documented houses lack sufficient architectural significance to be recommended as potentially eligible to the NRHP, either individually or as part of a historic district. Similarly, none of the other buildings within this



portion of the APE are recommended as potentially eligible to the NRHP, either individually or as part of a historic district.

3.2.4 Limekiln/Ogontz Detention Basin

The Limekiln/Ogontz Detention Basin is located along Rock Creek west of Limekiln Pike in Cheltenham Township (Figure 6). It is the southernmost of the sections of the APE. This portion of the APE is predominantly open space. It falls mostly within a wedge-shaped piece of land between Ogontz Avenue and Limekiln Pike on the east, and West Cheltenham Avenue on the south. The area between Limekiln Pike and Ogontz Avenue is filled by a relatively recent shopping center; east of Ogontz Avenue are the playing fields of Cedarbrook Middle School (Photograph 36). West of Limekiln Park is a new housing development, Wyngate (Photograph 37). Several commercial buildings are along the north side of West Cheltenham Avenue, while the area south of the road is filled with row houses and, at its western end, a large religious complex (Photographs 38). None of the properties within this portion of the APE have been previously documented. Tetra Tech does not recommend any of the properties as potentially eligible to the NRHP, either individually or as a component of a historic district.

3.2.5 Greenwood Detention Basin

The Greenwood Detention Basin is located along an unnamed tributary of Rock Creek to the west of Greenwood Avenue in Cheltenham Township (Figure 6). It is a residential section of the APE, with houses ranging in style from the Shingle style to the split level houses of the 1960s. Two houses, 1017 Greenwood Avenue (the Charles Hewett Elvetham Estate) and 1300 Spruce Lane, were previously documented (Photographs 39 and 40). Elsewhere, along Arboretum, Rices Mill, Ricewynn, and Salisbury Roads, along with portions of Greenwood Avenue, and Hedgerow Lane, one can see examples of post-World War II housing (Photograph 41). Most of these buildings are constructed to standard plans, with the exception of 1107 Greenwood Avenue, which uses a butterfly roof and a relatively unusual design (Photograph 42). One other house of note is the shingle style building located at 414 Randall Road (Photograph 43). The house, with its associated barn, now a separate residence located at 417 Rices Mill Road, is an illustrative example of the way in which the style was used on large, suburban properties (Photograph 44). The two buildings are recommended as components of a single property potentially eligible to the NRHP under Criterion C, as a locally significant example illustrating the elements of the Shingle Style. Because they lack architectural significance, neither of the previously documented properties, including 1017 Greenwood Avenue (the Charles Hewett Elvetham Estate) and 1300 Spruce Lane, are recommended as potentially eligible to the NRHP. In addition, Tetra Tech does not recommend any of the other properties as potentially eligible to the NRHP, either individually or as a component of a historic district.

3.2.6 Washington Lane Detention Basin

The Washington Lane Detention Basin is located along Rock Creek, south of Rock Creek Road and west of Washington Lane in Cheltenham Township (Figure 6). This portion of the APE is residential. It contains five previously documented properties, including a portion of 1250 Church Road (Curtis Hall), 1421 Hopeland Road (Ogontz Farm), 1468 Ashbourne Road (no associated name), 1150 Church Road (Milmoral) and 7907 Toby Leech Drive (one of the Ronaele Manor outbuildings). Curtis Hall/Arboretum and Milmoral, are both listed in the



NRHP. (Milmoral is located outside the APE but abuts it, and so was considered for this analysis.) The rest of the buildings in this portion of the APE are a mix of single family houses built throughout the twentieth century. Hopeland and Ashbourne Roads are meandering roads following the topography of the land, while Washington Lane and Toby Leech Drive are less responsive to their settings (Photograph 45). As the buildings lack architectural significance, Tetra Tech does not recommend any of the previously unevaluated documented properties as potentially eligible to the NRHP, either individually or as a component of a historic district.



4.0 SUMMARY AND RECOMMENDATIONS

4.1 SUMMARY

Tetra Tech conducted background research and field inspections relating to the proposed construction of 11 detention basins along Tookany Creek and its tributaries in Abington and Cheltenham Townships, Montgomery County, Pennsylvania. Background archeological research indicates the presence of few prehistoric sites in the Project area, although only one previous archeological survey has been conducted within one mile of the Project APE. Identified prehistoric sites along Wissahickon Creek and its tributary Sandy Run, located between 3.5-kilometers and 4.5-kilometers northwest of the Project APE, indicate short-term site use and the exploitation of quartz and quartzite from local rock outcroppings for the manufacture of stone tools. One documented prehistoric site (36MG0077) is located approximately one kilometer northeast of the Project APE. Undisturbed terrain within the Tookany Creek drainage has the potential to contain previously undocumented prehistoric archeological resources, especially within parklands that have witnessed little prior development.

Background historic architecture research indicates that water-powered mills were present in the Project area from the late seventeenth century to the mid-nineteenth century. By 1785 Cheltenham Township supported three gristmills and three saw mills on Tookany Creek and its tributaries. Although a review of historic maps does not depict any mills within the Project APE, there is a potential for undocumented mill structures and features to be present within the Project APE. The pedestrian reconnaissance identified a concrete structure extending into Rock Creek within the Limekiln/Ogontz Basin APE, and is possibly associated with an unmapped mill. In addition, segments of the Project APE contain high sensitivity for the presence of other historic archeological sites within the APE including residences, barns, and outbuildings.

The files search identified 12 previously identified resources within or immediately adjacent to the APE for historic architecture. The architectural survey confirmed the continued existence of 11 of these resources; the Glenside Elementary School was demolished between October, 2008 and April, 2010. In addition, 414 Randall Road and 417 Rices Mill Road were identified as components of a single property potentially eligible to the NRHP under Criterion C, as a locally significant example illustrating the elements of the Shingle Style.

4.2 RECOMMENDATIONS

Based upon the background research and field inspections, Tetra Tech concludes that terrain around 10 of the proposed detention basins have the potential to contain undocumented prehistoric or historic archeological sites. These basins include:

- Highland East
- Highland West
- Grove Park
- Limekiln Pike
- Church Road
- West Waverly Road
- Doe Lane
- Limekiln/Ogontz



- Greenwood
- Washington Lane

After the Philadelphia District Corps of Engineers finalizes designs for the Tookany Creek drainage flood control project, the agency can formally define APEs for archeology and historic architecture for each of the proposed basins. At that point, the agency can seek specific recommendations for Phase IB shovel testing or further archival research to identify previously undocumented archeological resources that might be potentially eligible for listing in the NRHP.

If USACE determines in consultation with PMHC that 414 Randall Road/417 Rices Mill Road is eligible to the NRHP, Tetra Tech recommends that the potential visual impact of the Project on these and the two NRHP-listed properties, Curtis Hall and Milmoral, should be assessed.



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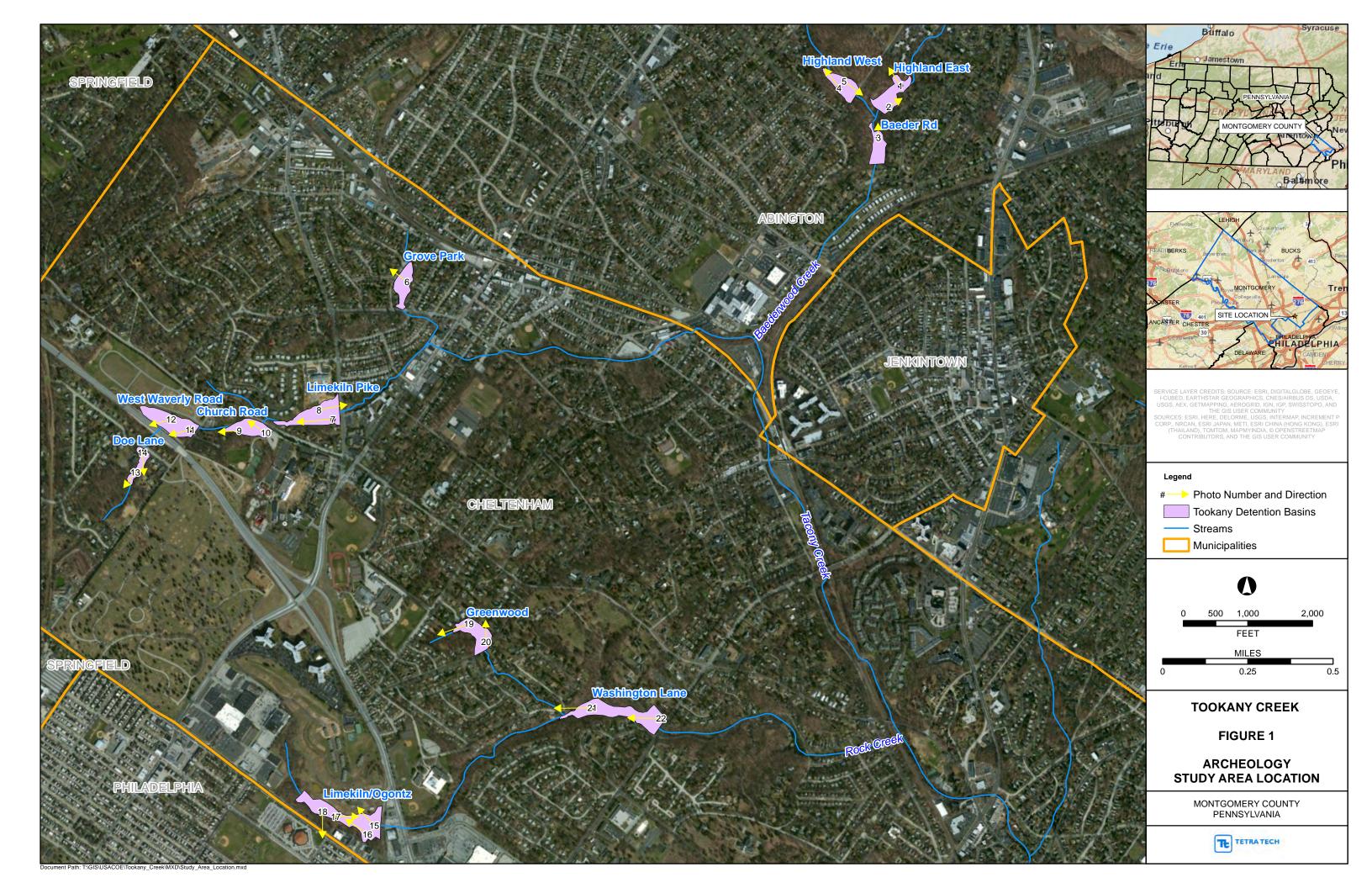


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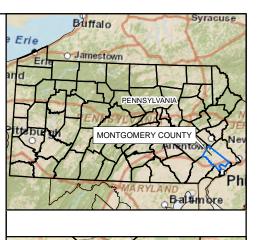


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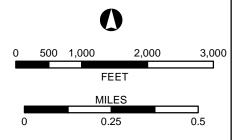


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Legend



Tookany Detention Basins



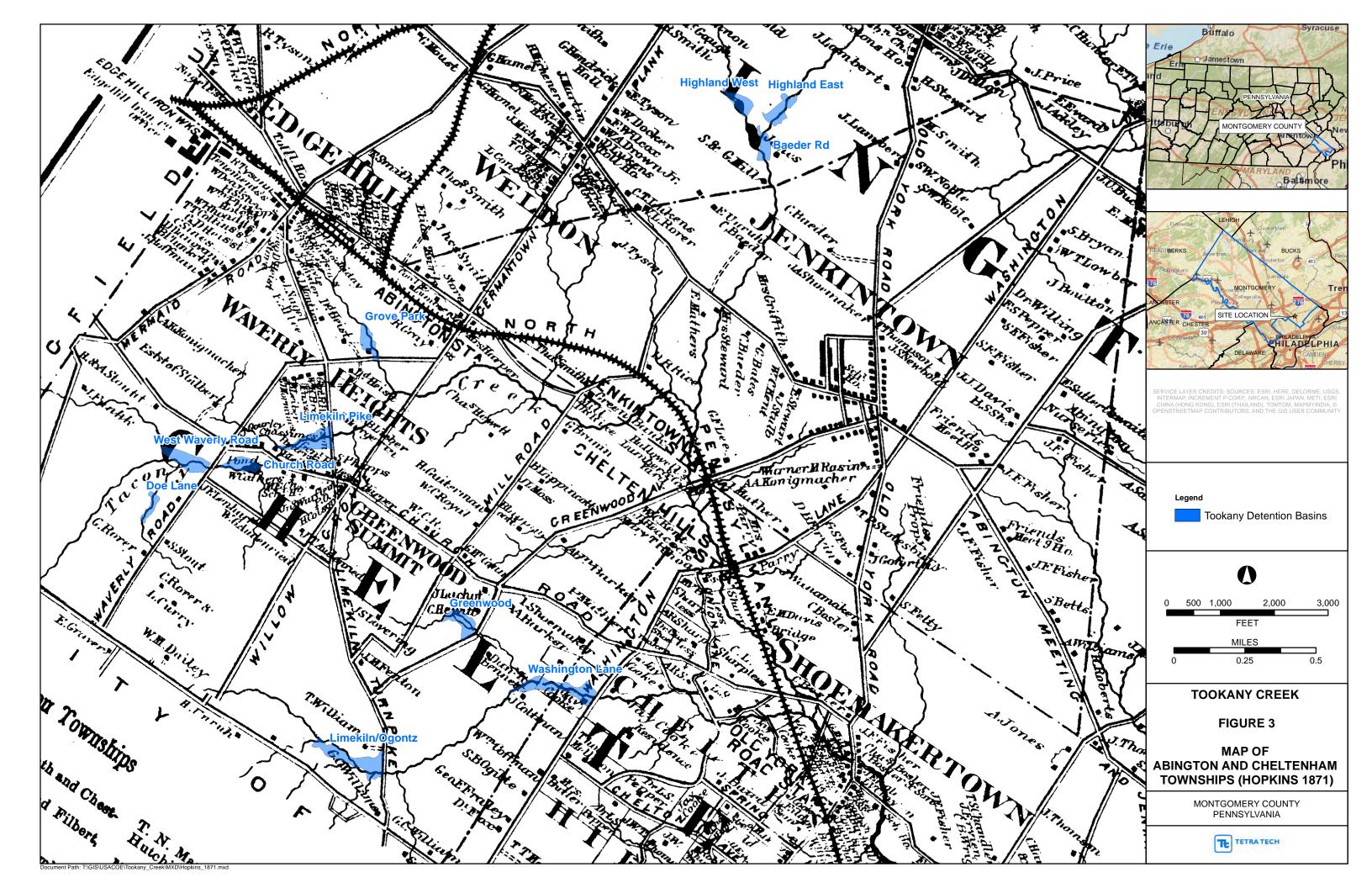
TOOKANY CREEK

FIGURE 2

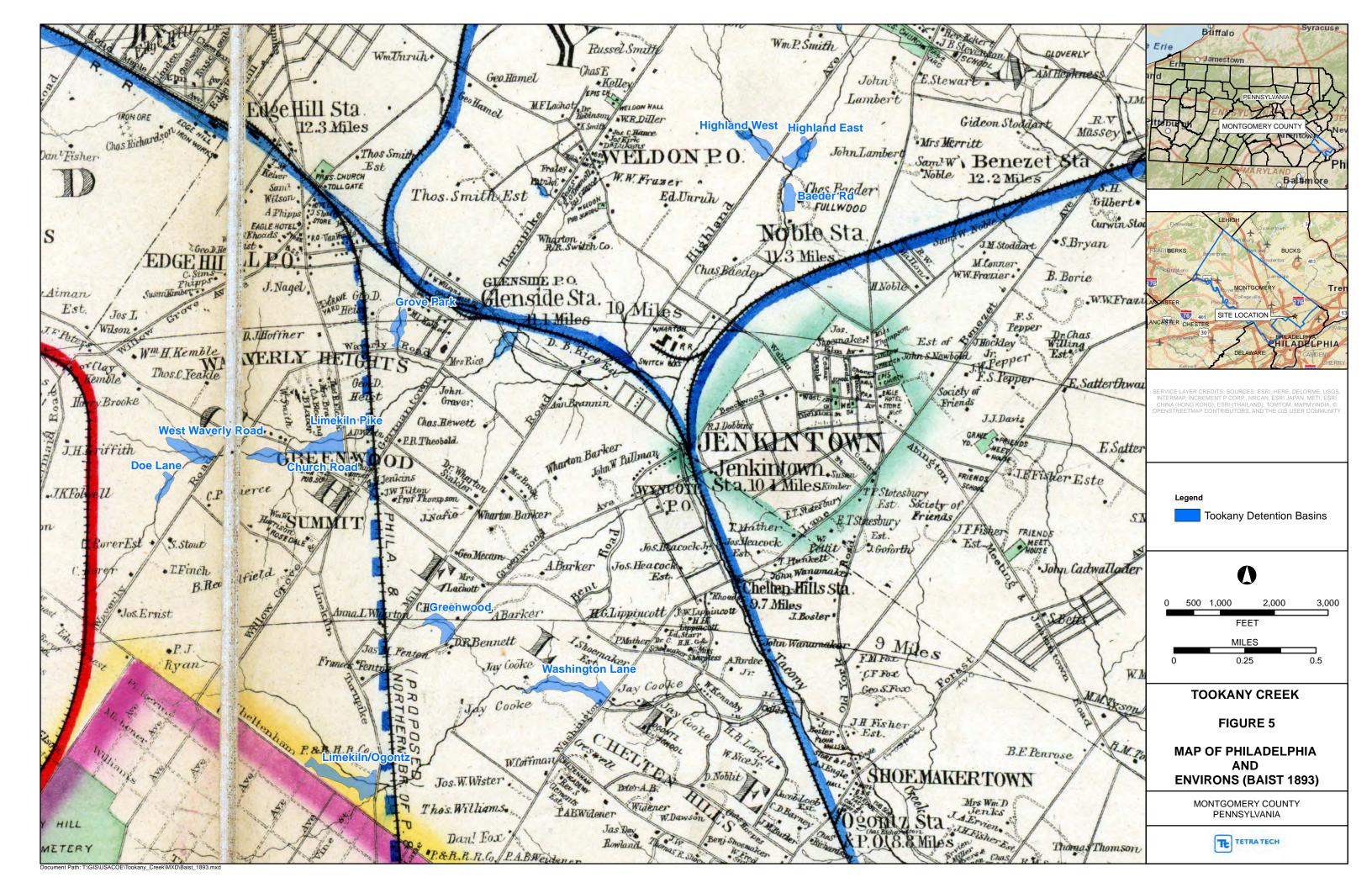
MAP OF CHELTENHAM TOWNSHIP (HILLS 1809)

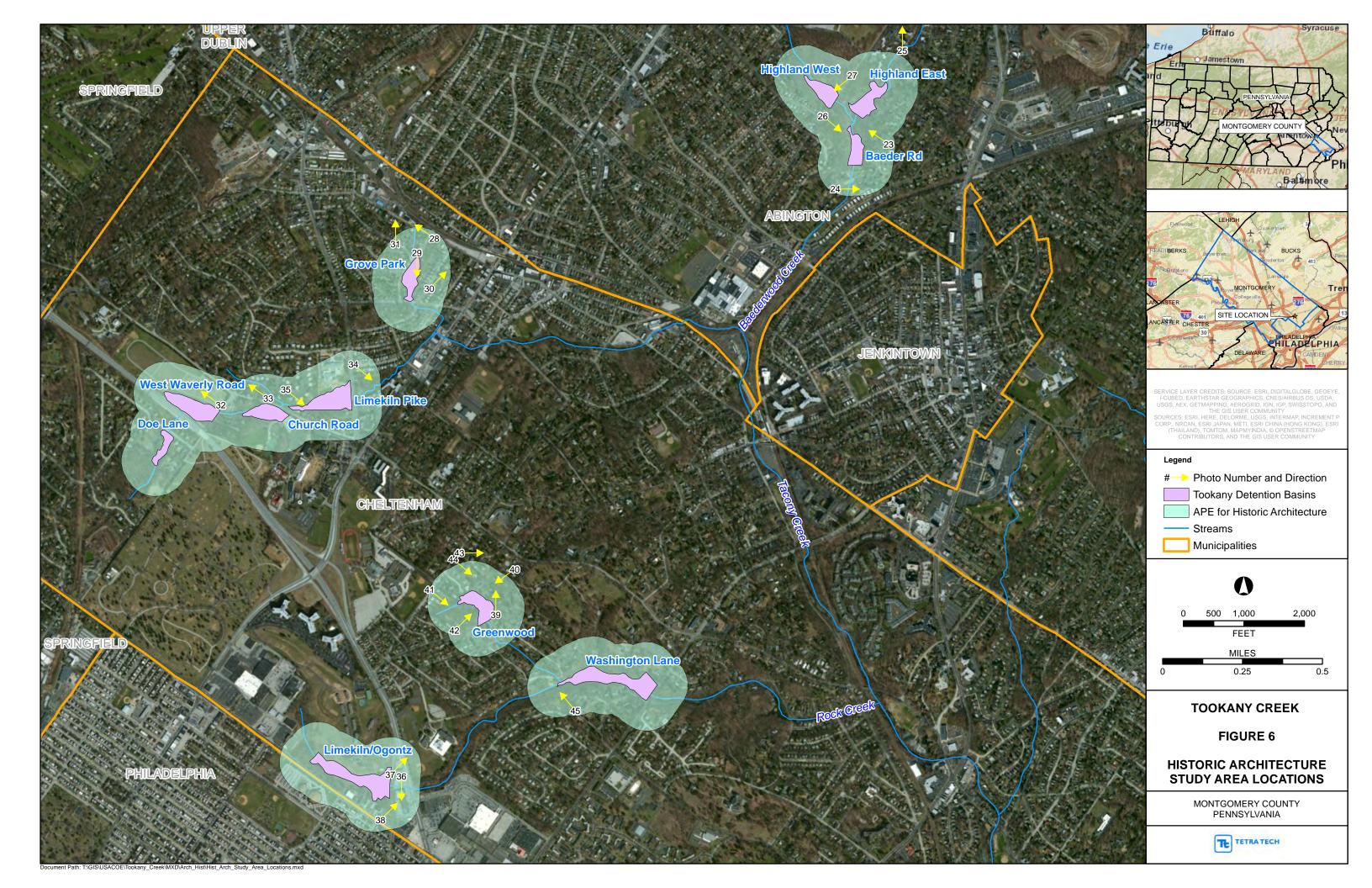
MONTGOMERY COUNTY PENNSYLVANIA















Photograph 1. Highland East Detention Basin locale. View to northeast.

Photographer: Rob Jacoby

Date: October 7, 2014



Photograph 2. Highland East Detention Basin locale. Stream to left, uplands at right. View to northeast.



Photograph 3. Baeder Road Detention Basin locale. View to north.



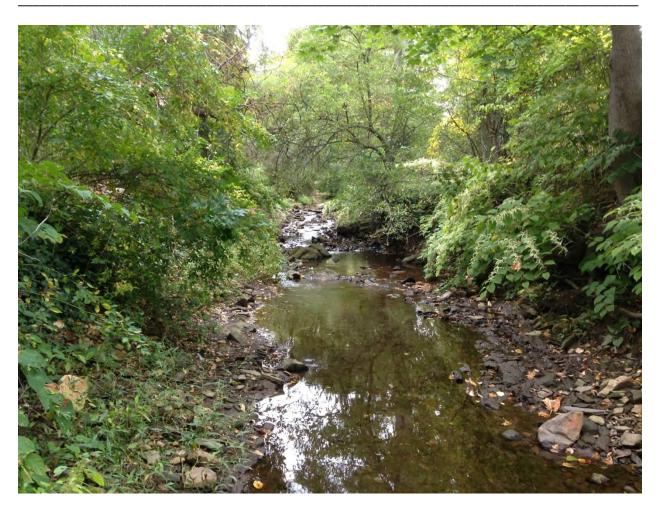
Photograph 4. Highland West Detention Basin locale. View to north-northwest.



Photograph 5. Highland West Detention Basin locale. Landscaped stream terrace at left (Baeder Park), stream to right. View to southeast.



Photograph 6. Grove Park Detention Basin locale. Note the drainage outfall pipe. View to northwest.



Photograph 7. Limekiln Pike Detention Basin locale. View to west.



Photograph 8. Limekiln Pike Detention Basin locale. Landscaped stream terrace at right. View to east.



Photograph 9. Church Road Detention basin locale. Landscaped stream terrace in foreground, ruined greenhouse at rear, stream to left. View to west.



Photograph 10. Church Road Detention basin locale. Landscaped park. View to northwest.



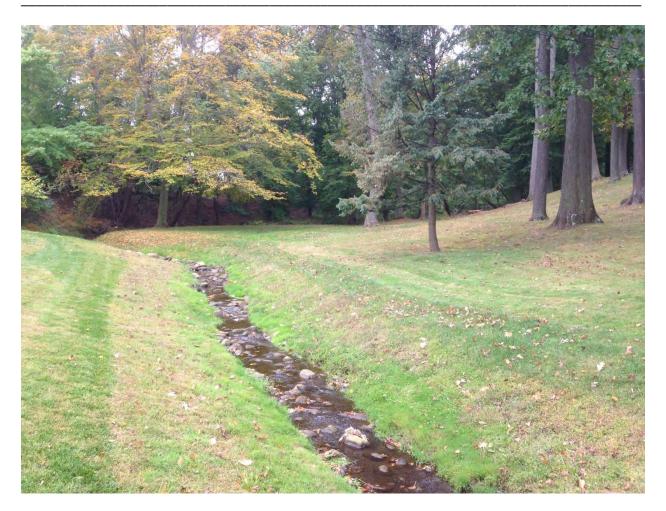
Photograph 11. West Waverly Road Detention Basin locale. View to southwest.



Photograph 12. West Waverly Road Detention Basin locale. Pennsylvania Route 309 berm at rear. View to west.



Photograph 13. Doe Lane Detention Basin locale. Stream meander. View to southwest.



Photograph 14. Doe Lane Detention Basin locale. Landscaped stream terrace. View to south.



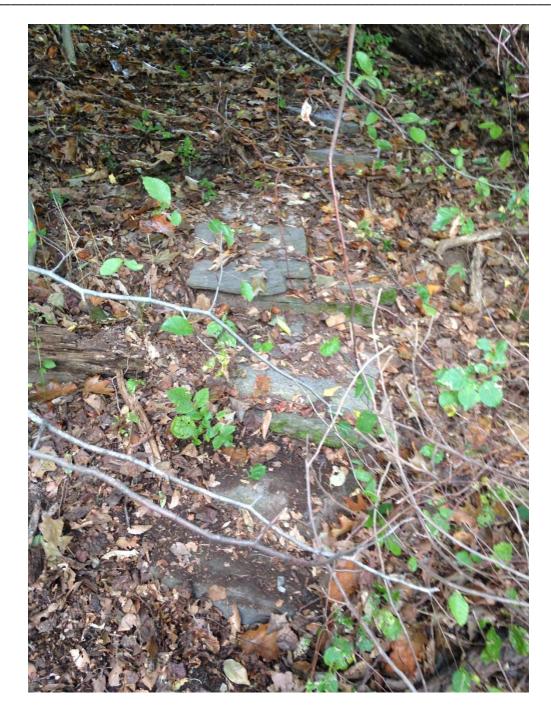
Photograph 15. Limekiln/Ogontz Detention Basin locale. Ponded stream. View to northwest.



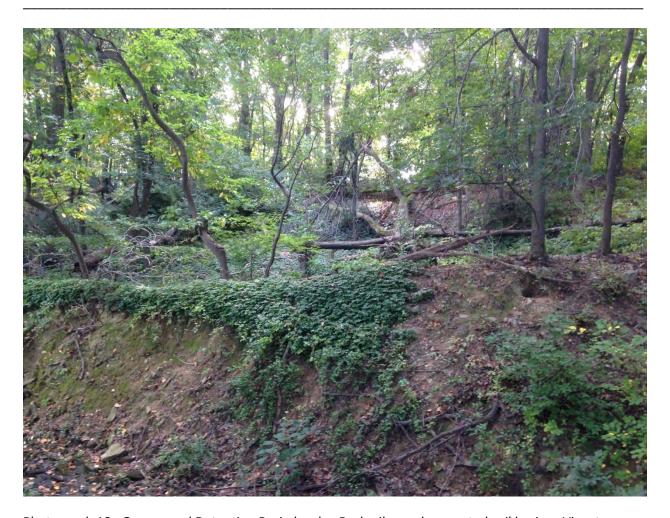
Photograph 16. Limekiln/Ogontz Detention Basin locale. Tree throws on south bank of stream. View to northwest.



Photograph 17. Limekiln/Ogontz Detention Basin locale. Concrete feature in stream, possibly mill related. View to east.



Photograph 18. Limekiln/Ogontz Detention Basin locale. Slate steps on slope between Cheltenham Avenue and stream. View to south.



Photograph 19. Greenwood Detention Basin locale. Push piles and excavated soil basins. View to southwest.



Photograph 20. Greenwood Detention Basin locale. Landscaped stream terrace. Stream is at left. View to north.



Photograph 21. Washington Lane Detention Basin locale. View to west.



Photograph 22. Washington Lane Detention Basin locale. Landscaped stream terrace, Curtis Park. View to west.



Photograph 23. Colonial Revival house at 745 Glen Road. View to northeast



Photograph 24. Colonial Revival and ranch houses along Baeder Road. View to east.



Photograph 25. Jericho Manor Apartments. View to north.



Photograph 26. Houses with similar designs along Highland Avenue. View to southeast.



Photograph 27. Houses with similar designs along Pleasant Avenue. View to southwest.



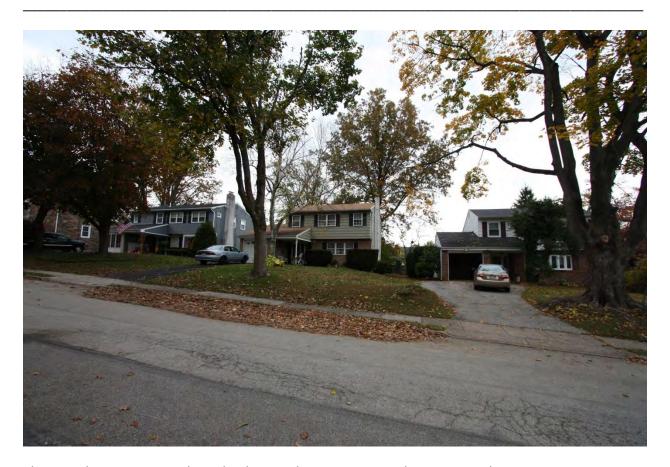
Photograph 28. Mixed commercial and residential buildings along West Glenside Avenue. View to northwest.



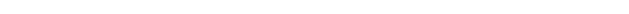
Photograph 29. Shady Nook Farm. View to the south.



Photograph 30. The mix of styles along Lismore Avenue. View to northeast.



Photograph 31. Houses with similar designs along Montier Road. View to north.





Photograph 32. A portion of Holy Sepulcher Cemetery. View to northwest.



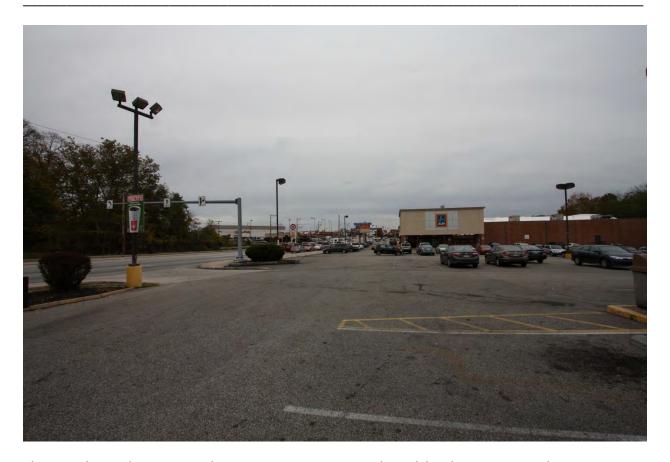
Photograph 33. Nineteenth century houses along Church Road. View to northwest.



Photograph 34. Buildings along Oak Road. View to southeast.



Photograph 35. Post World War II house along General Patterson Drive. View to southeast.



Photograph 36. Shopping area between Ogontz Avenue and Limekiln Pike. View to south.



Photograph 37. Wyngate. View to northwest.



Photograph 38. Rowhouses along West Cheltenham Avenue. View to northwest.



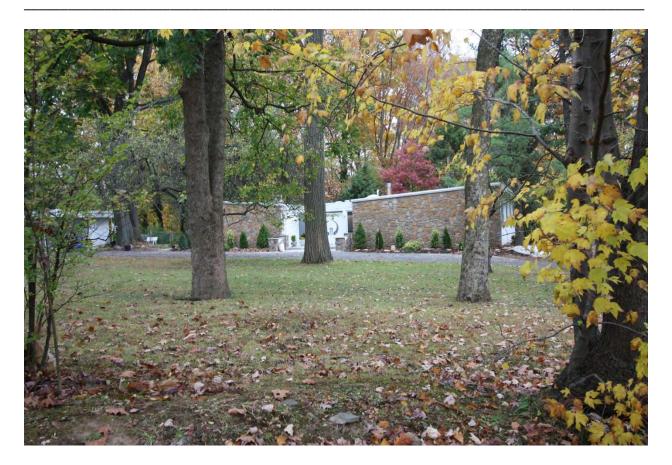
Photograph 39. 1017 Greenwood Avenue (the Charles Hewett Elvetham Estate). View to north.



Photograph 40. 1300 Spruce Lane. View to southwest.



Photograph 41. Post World War II housing along Rices Mill Road. View to southeast.



Photograph 42. An post World War II house with a butterfly roof. View to northeast.



Photograph 43. 414 Randall Road. View to east.



Photograph 44. 417 Rices Mill Road. View to southeast.



Photograph 45. Streetscape view along Hopeland Road; Ogontz Farm is on the right. View to northwest.