Background Data Report - Natural and Historic Resources

New Hanover Township benefits from many intact natural features but increasing development pressures may place some of these features at risk of removal or degradation. Geologic features that underlay the township have long determined how water flows under and over ground, and which areas of the township were selected for agricultural purposes. Steep slopes are found in conjunction with more heavily forested areas while lower elevation areas are used primarily for housing development and agricultural uses. Relatively poor soil drainage in the region is exacerbated by increasing development, impervious cover, and disruptions to the ability of the land to infiltrate and recharge ground water. However, the townships waterways are still unimpaired for the most part, and forested lands remain intact. Strong land management will be critical to ensure these features remain part of a healthy ecological system. Additionally, cultural and historic resources contribute to the overall character of the community. While limited in number, older and historic structures provide a link to the past and provide connections to the early residents of the township. Please review the provided data and consider the questions and prompts provided in the "Key Takeaways" section.

Natural Resources

Geology

The township's underlying geology forms the basis for all the natural systems present. Geologic formations in the township are primarily composed of diabase or mudstone (part of the Brunswick formation). The diabase formation is resistant to erosion, weathering, water infiltration, and groundwater movement. These areas are often steeply sloped and wooded, with numerous surface rocks and boulders. As a result, wells can have low yields and excavation can be difficult. Large-scale development on lands within this formation may be limited, and these areas may be key for conservation efforts. Many wooded and agricultural areas are located on properties within this formation zone, so to a degree this preservation is already occurring. The diabase ridges in the northern and southern ends of the township are part of a larger arc that wraps around western Montgomery County through multiple townships. The Brunswick formation is characterized by shale, mudstone, and siltstone, and its topography is characterized by rolling hills.

Soils

Soils are created by the erosion of underlying bedrock and deposits of organic materials, and play a large role in influencing the types of land uses that are most suitable for individual areas. The soil characteristics that pertain the most to our discussion include agricultural soils, soils of statewide importance, hydric soils, and alluvial soils. Agricultural soils are those that have high agricultural value for their characteristics, including deep, well-drained and mildly sloped soils. Prime agricultural soils are those that can support high yields of crops with little management. Soils of statewide importance are those that can support crop cultivation but that require careful management. More of New Hanover's soils are designated as statewide importance, meaning they need careful management over the long-term to retain agriculture productivity. The limited agricultural soils in the northern and southern end of

the township correlate with the diabase geologic formation which is less well-suited to agricultural use because it tends to be rockier and better for woodlands.

Hydric soils are those that are periodically wet, and include wetland areas, although not all hydric soils are located in wetland areas. Alluvial soils are those that have been deposited by flowing water and are often located in floodplain areas. These soil types are generally some of the least suitable soils for development in part due to their function as aquifer recharge areas and high water table. As a whole, much of the rest of the soils within the township are classified as Group C or Group D soils (from the USDA Natural Resources Conservation Service classifications) meaning they have a relatively low to very low infiltration rate and consist of fine textured soils or soils with a layer that impedes percolation. This can be problematic for stormwater management and result in property flooding and water damage as more areas of the township are developed and paved over.

Watersheds

MCPC

New Hanover Township is primarily within the Swamp Creek Watershed, with a portion of the northern end of the township located in the Perkiomen Creek Watershed and a small portion in the lower southeast corner of the township within the Schuylkill River Watershed. Within each of the watersheds, smaller drainage basin areas are identified. Watersheds are managed by Act 167 stormwater management plans which outline existing characteristics , impacts of future development, and stormwater control standards. Best management practices (BMPs) are provided as part of implementation recommendations to control and treat stormwater. The Swamp Creek Act 167 recommends a 50% reduction of the release rate for the entire watershed, meaning stormwater flows should be captured and infiltrated, or released more slowly back into the system to reduce surges that exacerbate sedimentation and erosion.

Water Quality

Municipalities in the state must NPDES permits for discharges of stormwater from their municipal separate storm sewer systems (MS4s). These come with target requirements to achieve within the 5-year permit timelines, and the township is required to administer the minimum control measures, which includes: public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, and pollution prevention.

Only the main branch of the Swamp Creek is identified as impaired as a result of "urban runoff". This is the portion of the creek that runs from Douglass Township near Middle Creek Road and Route 73, through Hickory Valley Golf Club.

Floodplain and Wetlands

Areas of the township that are within the FEMA designated floodplain are primarily located along the Swamp Creek, and a majority of the bodies of water have designated wetlands surrounding them. The floodplain is designated as a 100 year floodplain, or a 1% annual chance of flood. Properties located within the designated floodplain area are eligible for federal flood insurance. The increasing frequency

and strength of storms may cause these properties to experience more flood effects than anticipated, especially because the region has poor infiltration and increasing development.

Steep Slopes and Woodlands

Major ridgelines of hilly areas with slopes in excess of 25% are present along the diabase regions in the north and southeast areas of the township while the center of the township has very few areas of steep slopes. These areas also correlate with the regions in the township that have the most forest cover. Areas of steep slopes are important to preserve because of potentially negative consequences from erosion and stream sedimentation resulting from development. Clearing the wooded areas from these slopes may destabilize them and exacerbate erosion. Some of the areas with the largest intact forest patches also house the tallest canopy trees. These areas have been least impacted by development and older forests have remained relatively untouched. In areas with greater agricultural and residential land uses, we see much more fragmented forest cover with shorter canopy trees, indicating they are likely younger trees.

Agriculture

While farmland is not a public open space amenity, management of these lands contributes greatly to the overall natural resources in the township. These lands need to be properly managed to avoid erosion from poor soil management, and proper animal husbandry needs to be practiced to maintain the health of animals and management of manure on site. Agricultural lands are also more prone to be sold off for development because they are generally clear lands with limited forest and steep slopes. Preservation of agricultural lands is important at the county level to ensure we maintain our farming heritage, and sustain local food production. Just about half of all farmland within the township is under the county's farmland preservation program, with a few properties currently under review to be approved for farmland preservation. There are numerous opportunities to coordinate with the owners of the non-preserved farms to encourage them to apply to the program. Preserved farms are granted deeds that restrict any use on the site in perpetuity that is not considered an active agricultural use.

Ordinances

Regulatory language in the township ordinances help serve to protect natural features, and can also be used to incentivize certain types of preferred development and transition to clean and renewable energy.

• Floodplain Management Ordinance

Standalone ordinance (not in zoning or SALDO) regulating properties within the floodplain, and uses permitted in the floodplain conservation district. Typically, any use that is not open space, forestry, or agricultural in nature is prohibited within the floodplain, which includes construction of new structures, placement of fill, removal of vegetation, parking or areas of vehicular traffic, and stormwater basins.

- Stormwater Management Ordinance Standalone ordinance (not in zoning or SALDO) regulating the design, placement, and performance of stormwater management features.
- Landscaping ordinance suitability of species, tree protection and replacement

MCPC Data Report: [NATURAL AND HISTORIC RESOURCES]

Street tree standards, buffer standards, and parking lot landscaping are located in the Design Standards section of the SALDO. These standards may benefit from some improvements to strengthen the requirements and provide greater guidance for appropriate species selection to encourage native plantings and allow for tree replacement when trees are removed during land development.

- Natural Resource Protection Standards Within the zoning ordinance, these standards exist in a section unto themselves and apply to specific areas within the township. Included in these standards are:
 - Riparian Corridor Conservation District
 - Stormwater management
 - Floodplain regulations
 - o Sedimentation and Erosion Control
 - Steep slopes
 - Tree protection standards

Sites of Statewide Significance (as identified in the PMRPC Comp Plan)

• Deep Creek Marsh

"A good quality population (over 1,000 plants) of sedge of special concern was found in the wet meadows and marshland along Deep Creek. Change in hydrology or water quality would be detrimental to the habitat and since the sedge needs open habitat, succession of a woody plant community could eventually crowd out the species."

• Henning Road Woods

"This site is within the Deep Creek drainage basin and contains a well-developed mixedhardwood forest community on steep slopes strewn with diabase boulder. At least 13 species of trees, including red maple, oaks, ash, beech, hickory, flowering dogwood, sassafras and pawpaw, are found on the site. The site also contains a well-defined shrub strata and diverse herb layer and includes a section of younger forest that serves as a buffer to the older hardwood section."

New Road Swamp

"Located north of New Hanover Square Road, this site is a locally significant example of a floodplain forest community. It provides habitat for pin oak, elm, white ash and red maple, with a well-developed shrub and herb layer, including spicebush, viburnum, sedges, false nettle, violets, Jack-in-the-pulpit. The site also provides good breeding habitat for a variety of amphibian species. Maintaining the forest canopy will help prevent the spread of weedy species and maintain the integrity of the community as a whole."

Laughing Waters Hemlocks

"This site includes older growth hemlocks on steep slopes along Swamp Creek within Laughing Waters girl Scout Camp. Severe erosion from heavy foot traffic is a threat to the longevity of the hemlock. Additional trail maintenance and rerouting of the high use trails could help to protect this natural area. The site also includes a young but healthy hardwood forest of sugar maple, shagbark hickory and ash."

Cultural and Historic Resources

Township Historical Resources

The township has an active Historical Society which formed in 1999. The group sponsors events during the year to provide education and engagement on historical folk life and culture. Members maintain the Swamp Creek School, built in 1853, and located in the Swamp Creek Park on Reifsnyder Road. The schoolhouse serves as the meeting place for the historical society, and also serves as a field trip destination for school groups to experience nineteenth century school life. Nearby the schoolhouse at Swamp Creek Park is the Dengler Summer Kitchen where live cooking demonstrations are performed over the historic 1850s hearth. A kitchen garden adjacent to the summer kitchen is maintained, and members grow crops and vegetables that would have been common in a nineteenth century household garden.

A number of historic churches are also present in the township. The New Hanover Lutheran Church was constructed in 1770. The Hartranft Home, located at 117 Cross Road, was the parsonage for Swamp Creek Reformed Church and School. The majority of historic properties within the township are privately owned. One of the last brick barns within the township is located on the site where the New Hanover Town Center would go, and is proposed to be removed as part of that land development.

Historic Sites

The PA Historical and Museum Commission maintains a listing of historic resources in the state that are either listed on the National Register of Historic Places, or that have been determined to be potentially eligible for the National Register. The PMRPC Comprehensive Plan identified five sites in New Hanover Township. One site is already listed on the National Register and the other four are eligible, but not yet listed.

- Elliott Farm (Eligible) North side of Fagleysville Rd/Wagner Rd
- Layfield Mill Complex (Eligible) Ludwig and Layfield Roads
- Falkner Swamp Reformed Church (Historical Marker) Parsonage (Eligible) 117 Cross Road
- New Hanover Lutheran Church (Historical Marker) 2941 Lutheran Rd, across from Gilbertsville Golf Course
- John Riegner House; J. Yerger Farm (Eligible) 2481 Romig Road
- Long Meadow Farm Plank House Barn (Listed) Route 73, ½ mile northwest of Frederick

Key Takeaways

Data Report:

MCPC

Natural Resources

Natural elements that contribute to the area's ecological health also create conditions that make some areas of the township more or less suitable for development. Conservation of these sensitive areas, and those areas that are least conducive for development should be prioritized. The Acquisition Plan from the Open Space and Recreation Master Plan identifies some of these properties as targets for acquisition, either for recreation or open space, but there are additional opportunities to pursue conservation or preservation for agricultural lands and/or open space lands not already in a protected category.

- What types of preservation efforts would you most want to prioritize? How familiar are you with the farming community and what are the thoughts on the farmland preservation program?
- In targeting open space acquisitions, the township has already expressed a desire to limit the amount of land they are responsible to maintain, but what are some goals you see in setting aside land in environmentally sensitive areas?
- What kind of outreach has been conducted to private property owners (not just farmers) to inform them of best management practices for their land? Are you aware of any efforts to provide education and information? What would the response be from property owners?
 - Different management techniques are recommend depending on what the natural resources are like. Forested lands are managed differently than riparian buffer areas, for example.

Increased development and already poor soils exacerbate infiltration problems and result in less area available for groundwater recharge and increased stormwater runoff which can impair streams and waterways. This is damaging to the aquatic life and can harm drinking water supplies.

- What planning and/or policy techniques have been discussed with the Planning Commission, if any, to target improved ordinance language regulating protection of sensitive natural areas?
- Are there any thoughts on adding/modifying ordinance language to provide better regulations?

Historic Resources

Some residents have expressed concern that many of the older and historic properties have been removed in recent years, in part to make way for new developments. Because many of the properties that remain are in private ownership, there is little direct involvement the township has in ensuring their continued preservation, but their loss may feel like a loss in the cultural charm or identity of the township. Adaptive reuse is a term used to refer to transforming older properties into new uses while retaining their original exterior structures, and has been done successfully in many municipalities throughout the county.

- Do you feel it is important to preserve and protect older and historic structures?
- What could be a way to provide new uses for these structures? What is valuable to you about them their outside appearance, or a full preservation of their form and function?









WEST BRANCH PERKIOMEN CREEK
PERKIOMEN CREEK
DEEP CREEK
SCHLEGEL RUN
SCIOTO CREEK
GOSHENHOPPEN CREEK
SWAMP CREEK
MIDDLE CREEK
MINISTER CREEK
SANATOGA CREEK
HARTENSTINE CREEK

10,000

Z	Created September	9, 2019	0	2,500	5,000	















