




UPPER MERION 2040 COMPREHENSIVE PLAN

MONTGOMERY COUNTY, PENNSYLVANIA

August 2019

UPPER MERION 2040 COMPREHENSIVE PLAN

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INTRODUCTION

History

The Upper Merion/King of Prussia area was settled by Welsh immigrants in the early 1700's and was originally called Reesville after a prominent family who owned a great deal of land in the area. The name King of Prussia originated from an inn of the same name which was run by the Rees family. This inn was relocated in the early 2000's due to the expansion of Route 202. It is now located on Bill Smith Boulevard near the Abrams Run Apartments.

The area grew into a major rail center in the 1830's and 40's as steam locomotive trains were used to carry mining products such as iron ore out of the area. Eventually passenger trains became popular, which encouraged the development of highways. In the 19th century, Upper Merion Township was recognized as a major economic hub in the state based on the products derived from its mines and quarries, manufacturing, and farms. Farms produced a variety of crops with the most prevalent being tobacco in the late 1800's and early 1900's. While King of Prussia is currently recognized for being a major shopping, business and entertainment center, it is rich in railroad and Revolutionary War history.

Upper Merion Today

Upper Merion Township is situated in the lower southeast corner of Montgomery County, bordered by Lower Merion to its southeast, West Conshohocken and Plymouth to its east, Bridgeport, Norristown, West Norriton and Lower Providence all on its northern edge, and Chester and Delaware Counties on the western edge. It is approximately 20 miles from Center City, Philadelphia. The Schuylkill River runs along its northern and eastern edges. The Township serves as the crossroads of Route 422, I-76, I-476 (the PA Turnpike), and Route 202. It is served by the Norristown High Speed Line (NHSL), an elevated rail line, running north to south in the center of the eastern side of the Township. The Schuylkill River acts as a major barrier of the Township from the municipalities to its north: West Norriton, Norristown, Conshohocken, and Plymouth. Railroad tracks also border the Schuylkill River and outline this division.

The Township is almost entirely built out and little available land exists for new development. Future growth will involve redevelopment and infill development in already built out areas. While the Township is recognized largely as being home to the King of Prussia Mall, it is also a major employment hub and has many self-contained residential areas. It is an attractive place to live due to the range of housing types and prices as well as its location. Moore Park, formerly the King of Prussia Business Park, contains many large office businesses which provide jobs. The Township is also home to many entertainment opportunities including the Valley Forge Casino. These are assets which draw people to live, work, and play in Upper Merion Township.

Previous Comprehensive Plans And Planning Efforts

Upper Merion's last comprehensive plan was adopted in 1986. Some of the prominent goals of the plan included the development of stormwater management and steep slope ordinances, planning for the redevelopment of quarries, maintaining residential character in neighborhoods, to limit strip commercialization of major roadways, improve buffering requirements, encourage mixed-used development when possible, research means by which mass transit to and within the Township could be improved, develop policies which limit the number of curb cuts along major roadways, and research potential future road connections.

A land use vision plan was adopted in 2005 and included the following goals: create a sustainable environment, improve traffic circulation in the Township, improve the aesthetic quality along major transportation corridors, and protect existing residential neighborhoods. Other important planning efforts include the Township Comprehensive Parks and Recreation Master Plan, adopted in 2016, the Fire Study and Fire Service Strategic Implementation Plan, adopted in 2016, and various transportation plans.

NATURAL FEATURES

Upper Merion Township's natural environment is defined by its position to the south and west of the Schuylkill River. It also contains unique topography and geology that have guided the way in which development has taken place in the Township. Today, the community is largely built-out, with a history defined by rapid growth and development. A challenge currently exists as to how to preserve, protect, and enhance the remaining natural resources as redevelopment occurs within the natural context of the Township.

The Township has made efforts to protect and plan for the further protection of open space. The Township has experienced rapid growth for decades which continues today, even with a small amount of land available for development purposes. New development is typically in the form of redevelopment or infill development. Proposed zoning changes may assist in guiding the location of future development. These changes can assist with integrating redevelopment into built areas while reclaiming natural areas in need of protection. The Township's geology presents certain opportunities and challenges that must be addressed when pursuing development.

GEOLOGY

Upper Merion Township is comprised of an area of folded, faulted and altered geologic formations with varying characteristics. The underlying bedrock is hard and generally produces no major issues in regard to foundational support for building construction. There are some areas where bedrock is located below normal excavation depths, and in these areas care must be taken when dealing with development. Upper Merion's specific geologic composition can be seen in the Figure 1.

The Township has a long history of quarry operations dating back to as early as 1708. In the Township's earlier years, quarry activities involved the extraction of limestone and marble; later, excavations included stone and sand for building materials as well as clay for the manufacture of fire brick, terra cotta and even pottery. Quarry activities have decreased significantly, with only one quarry currently in use. One other former quarry, located in the eastern part of the Township, is now repurposed as a reservoir for water services by the AQUA Pennsylvania Water Company.

It is important to point out the history of quarry operations because they are reflective of the existing geologic formations that caused them to

Ivy Rock Quarry in Nearby Conshohocken

take place. These include the Ledger, Elbrook and Conestoga rock formations (see Figure 1). It was within these formations that most if not all former quarry operations were located. While the quarrying activity associated with these formations no longer has the same importance to the Township, other characteristics typical of these formations still have importance. The limestone and dolomite rocks usually found in these formations are very hard and excellent for building foundations.

While these formations have some favorable characteristics for construction, they have some other characteristics that may have the potential to make construction hazardous in these areas. These factors include the propensity of the rock to weather and solution characteristics. A solution cavity results from the action of groundwater and pressure that works to dissolve rocks to form sinkholes and caverns. Carbonate and evaporate rocks, such as limestone and dolomite, are prone to dissolution.

When these factors are found in combination with one another, they can lead to a phenomenon called natural subsidence. Natural subsidence is the downward movement of surface material, which creates sinkholes. Natural subsidence is most pronounced where the bedrock consists of limestone or dolomite and is related to a solution of two rocks, which based on their chemical composition are referred to as carbonate rocks. Natural subsidence is a hazard that can lead to damage to roadways and construction. These risks to buildings and roadways can be minimized or eliminated if the necessary precautions are taken prior to or at the time of construction.

Sinkholes

Upper Merion Township contains a topography that increases the likelihood for sinkholes to form. Karst topography refers to a landscape containing rock that is capable of being dissolved by surface or ground water. This process is called dissolution or chemical solution. Karst landscapes are typically composed of carbonate rocks (limestone and dolomite) or other highly soluble rocks such as gypsum.

Sinkholes occur in relation to the amount of bedrock solution that has taken place and the level of support that remains by soil and water filling in existing voids. Bedrock solution refers to the amount of dissolved rock that may present an opportunity for natural subsidence to occur. The soils around bedrock may support the ground level in its natural state, but this stability cannot be relied on indefinitely. Sinkholes form when soil and clay plugs give way, causing ground level soils to sink. Sinkholes most commonly form after intense rain or snow melt events. Groundwater levels rise before slowly going down. This process has the potential to wash out the soil plugs between the rocks, providing a channel for the material above to be washed into the voids below. Prolonged periods of drought can also lead to sinkhole formation as groundwater levels drop, which can cause soil plugs to dry out, shrink, and fall out.

Upper Merion's underlying geology along with sinkhole and surface depression locations are shown in the Figure 1. The vast majority of sinkholes and surface depressions are located in the Ledger, Conestoga, and Elbrook rock formations. This is due to the characteristic of these formations to encourage natural subsidence, as discussed previously. These geologic formations are also where high concentrations of development are located.

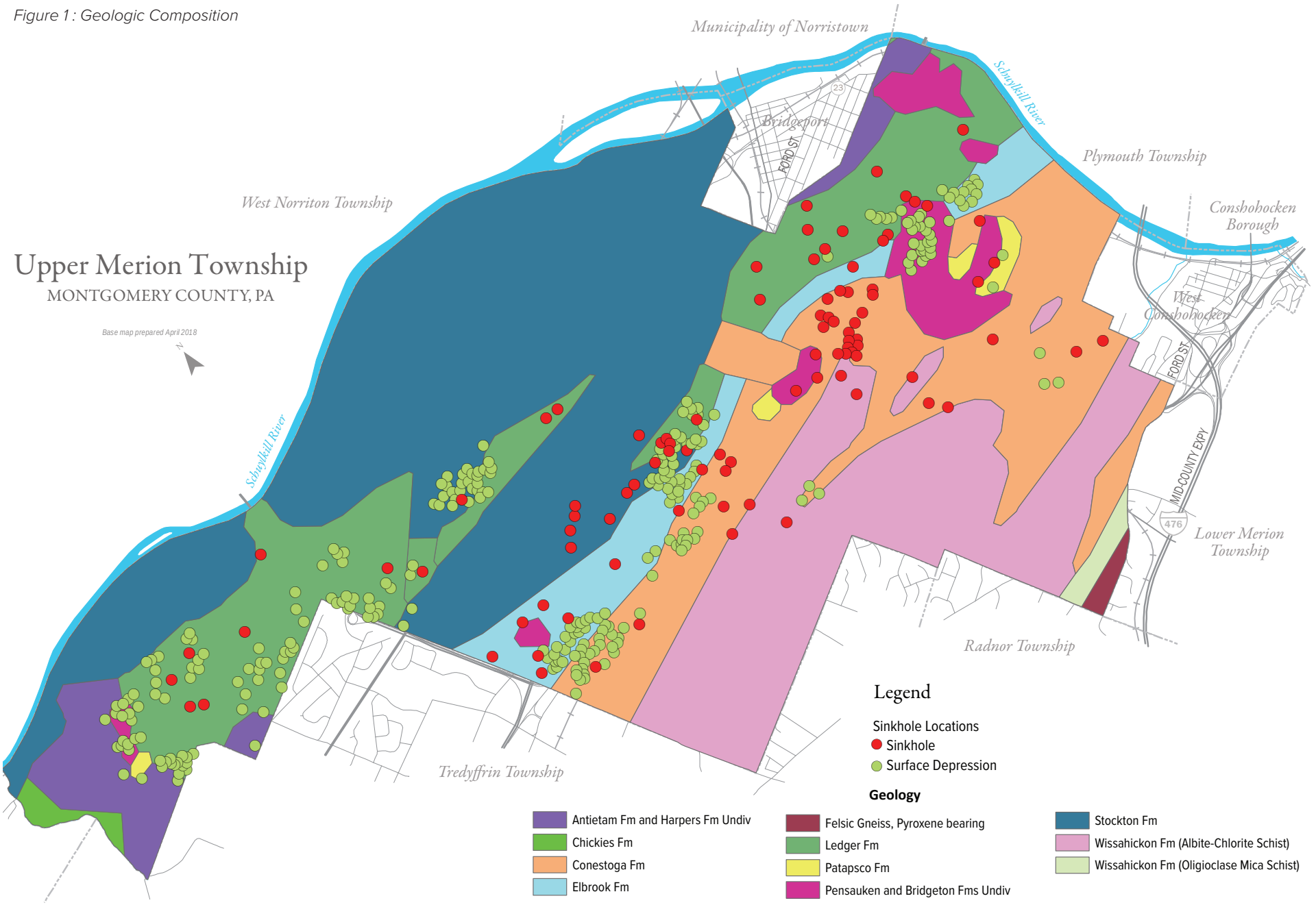
In any location where there is potential for sinkhole formation, careful geologic evaluation should be undertaken by a developer or property owner prior to any development. The repair of sinkholes that may form will differ greatly due to the varying characteristics that may arise due to the particular circumstances. Sometimes a repair may mitigate the major issues and sometimes it may not. While sinkhole occurrence in the Elbrook, Conestoga, and Ledger formations is more likely, early care and attention by experts can likely mitigate any potential issues in these areas.

WATER RESOURCES

Watersheds and Floodplains

The entire Township is located within the Schuylkill River Watershed. Within the Township, there are a total of five sub-watersheds: Crow Creek, Gulph Creek, Schuylkill Creek, Trout Creek, and Valley Creek. These sub-watersheds are shown in Figure 2. All of these drainage basins drain into the Schuylkill River. A small strip of land on the western-most edge of the Township (within Valley Forge National Historic Park) is within the Valley Creek Sub-Watershed. Valley Creek is the County's only "exceptional value" (EV) stream. This is the NAI's highest ranking for a stream's quality. The boundaries of these basins correspond to the provision of sewer services in

Figure 1 : Geologic Composition



the Township. Public and private open space is also generally structured around streams within these basins.

FEMA's 100 year floodplains can be seen in Figure 3. The map shows that floodplains spread outward from the Schuylkill River along the northern border of the Township. There is a higher concentration of floodplains in the eastern most portion of the Township. Township regulations for flood-prone areas, specifically the 100-year floodplain, are in place to protect people and property from flood damage by preventing the locations of development within them. In addition, these regulations help to ensure that floodplains serve their natural purpose by providing an overflow area, acting as a sponge to regulate water volume, cutting off flood peaks and releasing water during low-flow conditions. They also provide nutrients to streams and rivers to promote healthy plant, animal, and microorganism populations.

The Schuylkill River serves as both an environmental and scenic resource to Upper Merion Township as well as to the state and region overall. Its protection and preservation is essential in maintaining it as a resource for recreation and water supply. Access to the waterfront for recreational purposes is currently highly limited due to the presence of train tracks along the Schuylkill River. These tracks are owned by Norfolk Southern and at this current time there are no formal access points across the tracks. This is a significant barrier to gaining access to the riverfront. Establishing access could help in the protection and preservation of the Schuylkill by highlighting its importance as a cultural, recreational, and environmental resource. The Schuylkill River has the potential to serve as an amenity to Township residents and visitors.

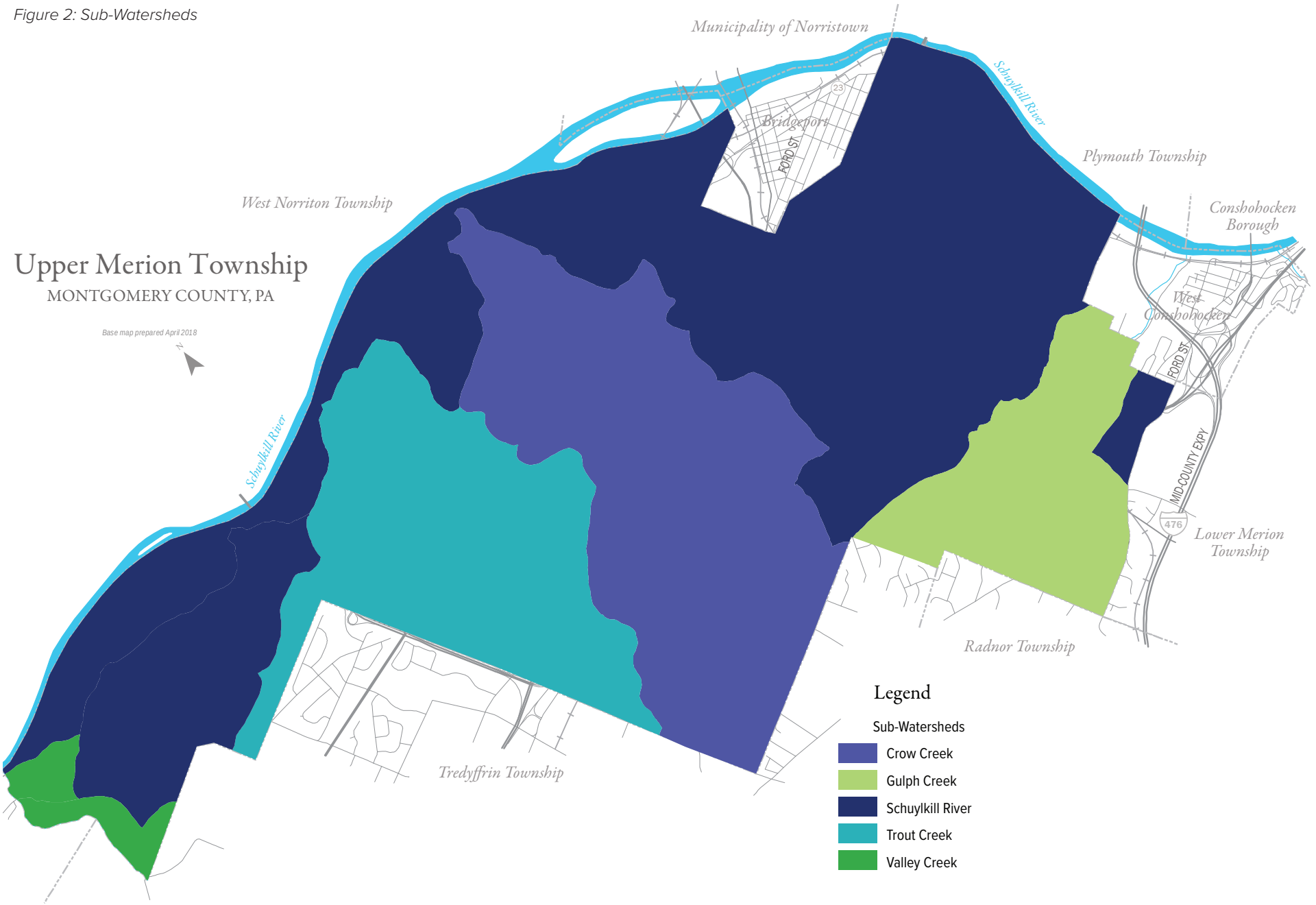
Floodplain Area

Benefits of Riparian Buffers

A riparian buffer is a vegetated area, typically with trees, along a stream, adjacent to the surrounding land. Riparian buffers provide many benefits to both the local and regional community and environment. These benefits increase as the width and ecological health of the buffer increases. Riparian buffers help to slow the concentration and velocity of runoff and thus the height and velocity of floodwaters downstream. Buffers can also serve as a natural reservoir to store runoff and slow its release into the stream over time. Riparian buffers improve water quality through the filtration of pollutants from runoff before entering the stream. This can assist with the removal of pesticides, excess sediment, nutrients and pathogens. These zones can serve to filter sediment and any attached phosphorus before it enters the water body. That phosphorus can then be taken up and utilized by the buffer's vegetation.

The root systems of trees help to strengthen stream banks and protect them from erosion. This is of particular importance during storm events. The stream bottom is where most of the biological activity takes place and therefore a stream's health

Figure 2: Sub-Watersheds



Stream in McKaig Nature Center

is greatly improved by this stabilization. Erosion increases the sedimentation of a stream and thus flooding risk, since the size and carrying capacity of a stream are reduced through this process. Sedimentation can also decrease the amount of sunlight that is able to reach aquatic plants and organisms on the stream bottom, as well as clog fish gills that are then unable to circulate water and aerate their blood, decreasing their likelihood of survival. The trees also provide leaf litter which serves an important purpose for stream health by feeding macroinvertebrates who are then consumed by other stream inhabitants.

Preserving riparian corridors provides swaths of land for various species to use to travel more safely through developed areas and between larger open spaces such as parks and woodlands. It also provides a specific and critical habitat needed by certain animals that live and breed along streams. In addition to this, it provides a safe corridor for nesting and the migration of both plant (through seeds) and animal species. Trees within forested corridors can significantly reduce air temperature by adding moisture to the air and shade to the land. The shade of the trees can also help to better regulate the water temperature of the stream. Trees also help to purify air by filtering pollutants, absorbing carbon dioxide and releasing oxygen. This has remarkable benefits for local ecosystems and residents.

All of the above benefits lead to a healthier stream system, which leads to further environmental and community benefits, including improved water quality and increased wildlife. Opportunities exist for revegetation in certain areas of the Township that are currently missing buffers on one or both sides of the stream.

Riparian Buffers

The Heritage Conservancy collaborated with the Montgomery County Planning Commission to evaluate streams in six watersheds located within Montgomery County, Bucks County, and Philadelphia County. The study evaluated streams on the basis of buffers. Stream segments were rated on the basis of having buffers present on one side of the stream, on both sides of the stream, or not present on either side of the stream. Stream segments that are known to be culverted were mapped as well.

The results of this study can be seen in Figure 4. A higher concentration of commercial development often leads to a higher level of culverted (piped underground) streams and/or streams lacking a buffer on either one or both sides. The associated map shows these areas surrounding the King of Prussia Mall. There are also a few areas in need for improved buffers

Figure 3: Floodplains

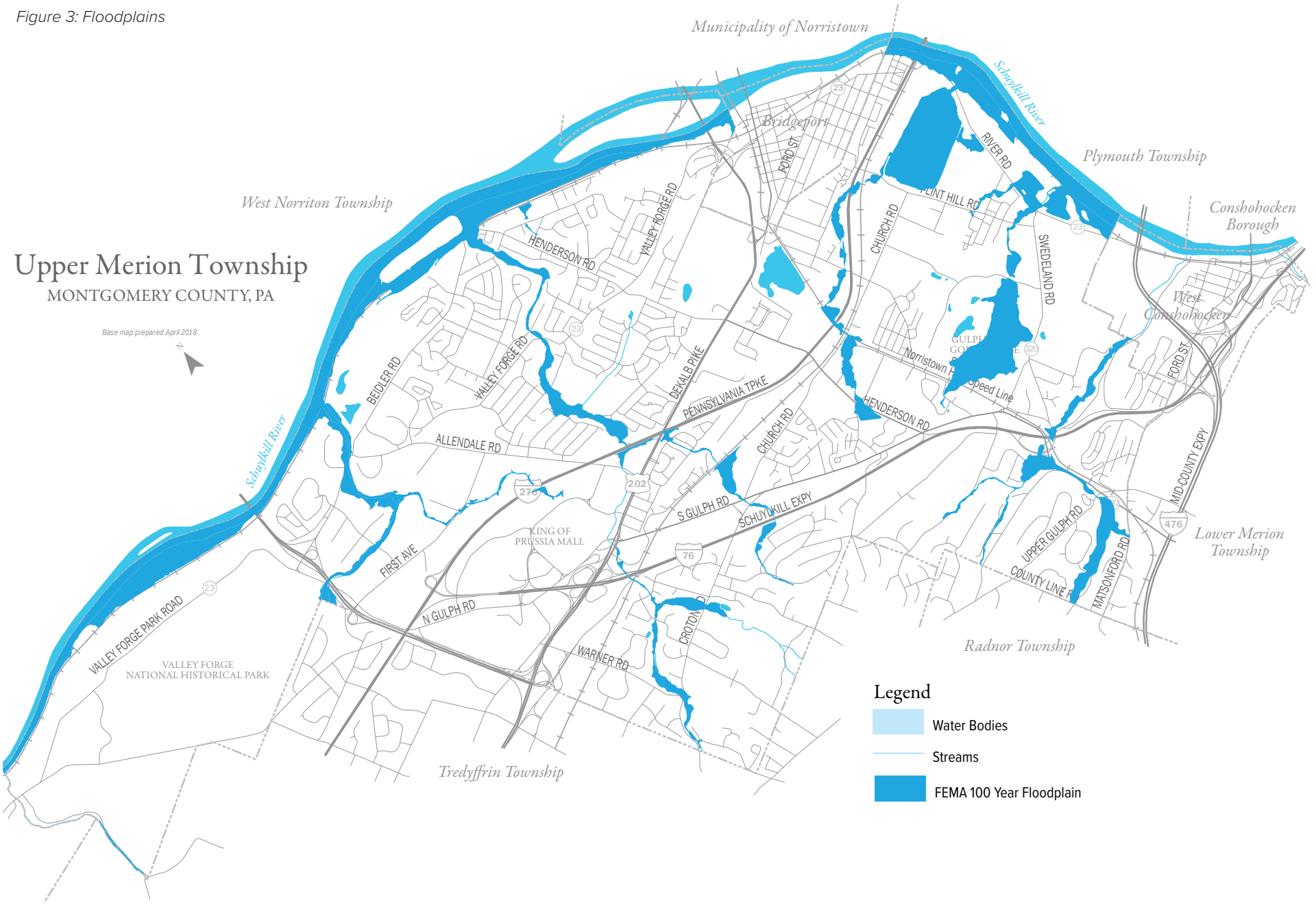
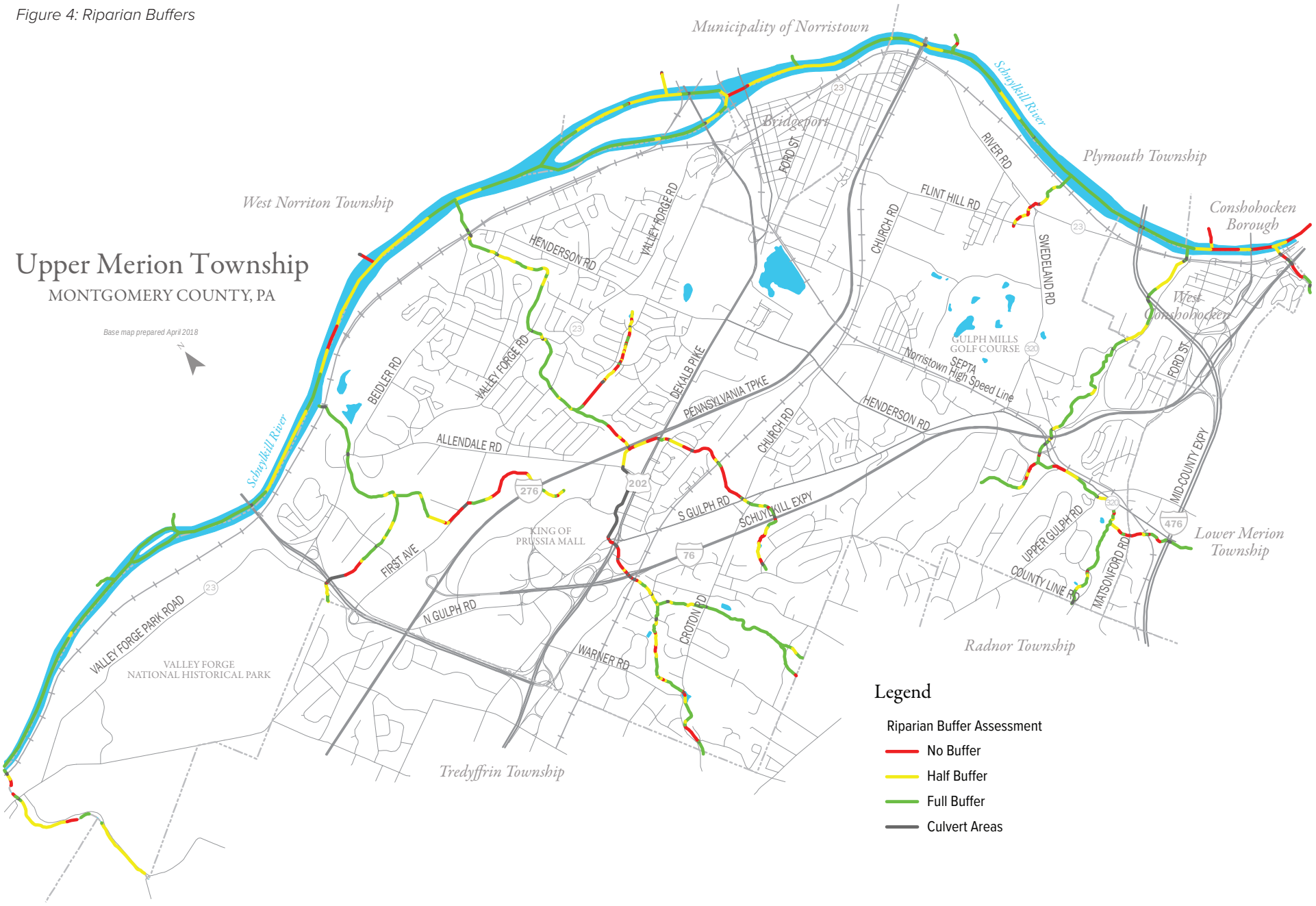


Figure 4: Riparian Buffers



in the Gulph Mills area of the Township as well as some other scattered residential areas. The Schuylkill River is lacking buffers in a few locations, mostly on one side of the river. Improving the buffers in areas where they are lacking can lead to benefits for both the environment and the community.

High levels of development have led to a drastically altered streamside environment. Without buffers to absorb stream velocity, streams erode downward, creating a narrower, steeply sloped bed. This limits the potential for biodiversity and available habitat. This can have other negative outcomes such as increased stream temperature, increased sunlight reaching to the streambed, changes in stream flow and stormwater runoff, and increased invasive species. Riparian buffers are the number one strategy for combating or preventing these negative outcomes. This may come in the form of planting trees and vegetation in these areas without one or any existing buffer, or increasing the width and vegetation of existing buffers.

Water Quality and Stormwater Management

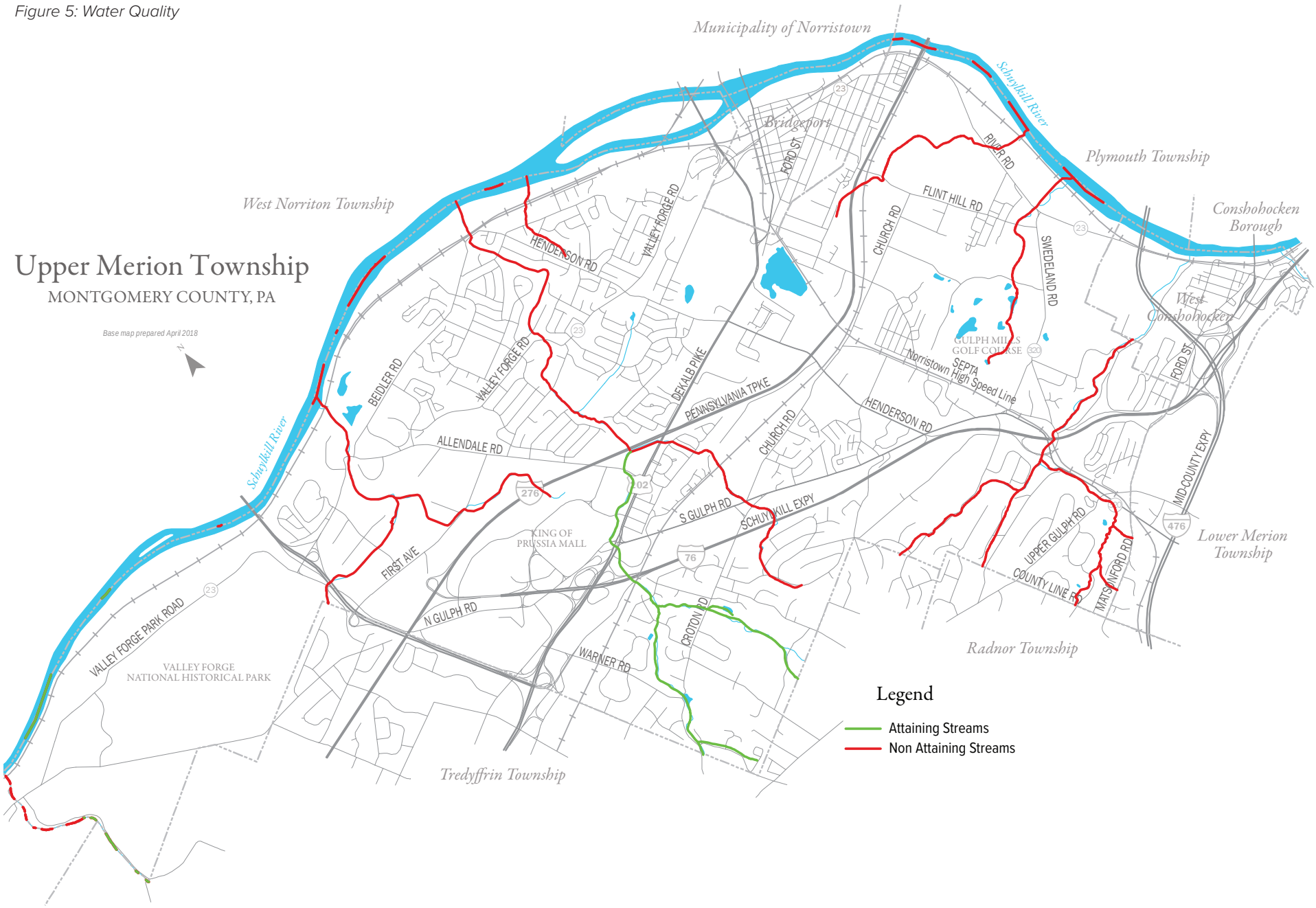
Under Section 303(d) of the Clean Water Act, the EPA requires states and territories to submit lists of impaired waters to the agency. These may be waters that are too polluted or otherwise degraded to meet established water quality standards. It is then required that a TMDL (total maximum daily load) is established for those "non-attaining" streams. A TMDL is the total maximum amount of a pollutant that can be present in a water body. This is determined by the EPA and it establishes the necessary reduction of one or more pollutants in order for that stream to meet water quality standards. A stream that meets these standards is rated as "attaining".
Figure 5 shows the current attaining and non-attaining streams in the Township.

Portions of the following streams or rivers that are considered impaired or non-attaining: Crow Creek, Gulph Creek, Matsunk Creek, Trout Creek, Valley Creek, and the Schuylkill River. Most of these creeks are heavily impacted by urban runoff and storm sewers, but some issues stem from channelization,

Erosion of Crow Creek Streambank

Crow Creek Stream Corridor

Figure 5: Water Quality



habitat modification, agriculture, and the presence of pathogens. Segments of the Schuylkill River, Crow Creek and Valley Creek are currently rated as attaining water quality requirements.

The level of development and impervious surface in the Township is closely linked to the high level of impaired streams. As stated above, most of the non-attaining streams have issues linked to urban runoff and storm sewers. At this time, most if not all runoff quickly enters streams, causing significant erosion in stream channels. Much of the Township was developed prior to the adoption of stormwater management requirements. Because of this, unique methods for managing runoff will be needed in order for the Township

Steep Slopes

The majority of Township land is sloped at a low to moderate level. The highest amount of area is considering gently sloping, falling between 3 and 8 percent slope. There are still significant areas of the Township that have slopes in excess of fifteen percent. The largest contiguous areas of steep slopes are in the south and southeast portions of the Township. Other pockets of steep slopes are scattered throughout the Township. Steep slope areas are shown in Figure 6. Moderate-to-steeply sloped areas present particular planning issues that may arise. Steep slopes are also typically associated with woodland areas, since they are not developable. Trees and roots, along with other vegetation, help to hold soil in place and minimize erosion. For these reasons, any development in these areas should be sensitive to not create too much disturbance during construction.

Upper Merion Township has steep slope zoning regulations that prohibit development on land with slopes greater than fifteen percent. The Township's zoning code includes other standards limiting and/or prohibited certain forms of development near these areas. Adopting a steep slope ordinance was one of the established goals in the Township's last comprehensive plan from 1987. With that ordinance in place, there is little to no risk of disturbance on sensitive steep slope areas in the Township.

TREES

Benefits of Tree Canopy

The presence of tree canopy can yield many social and environmental benefits to a community. On a basic level, trees provide an aesthetic benefit to residents and visitors of an area. They provide a public health service of improving air quality through the reduction of airborne particulates and contaminants that have a direct link to

Steep Slopes

Figure 6: Slopes

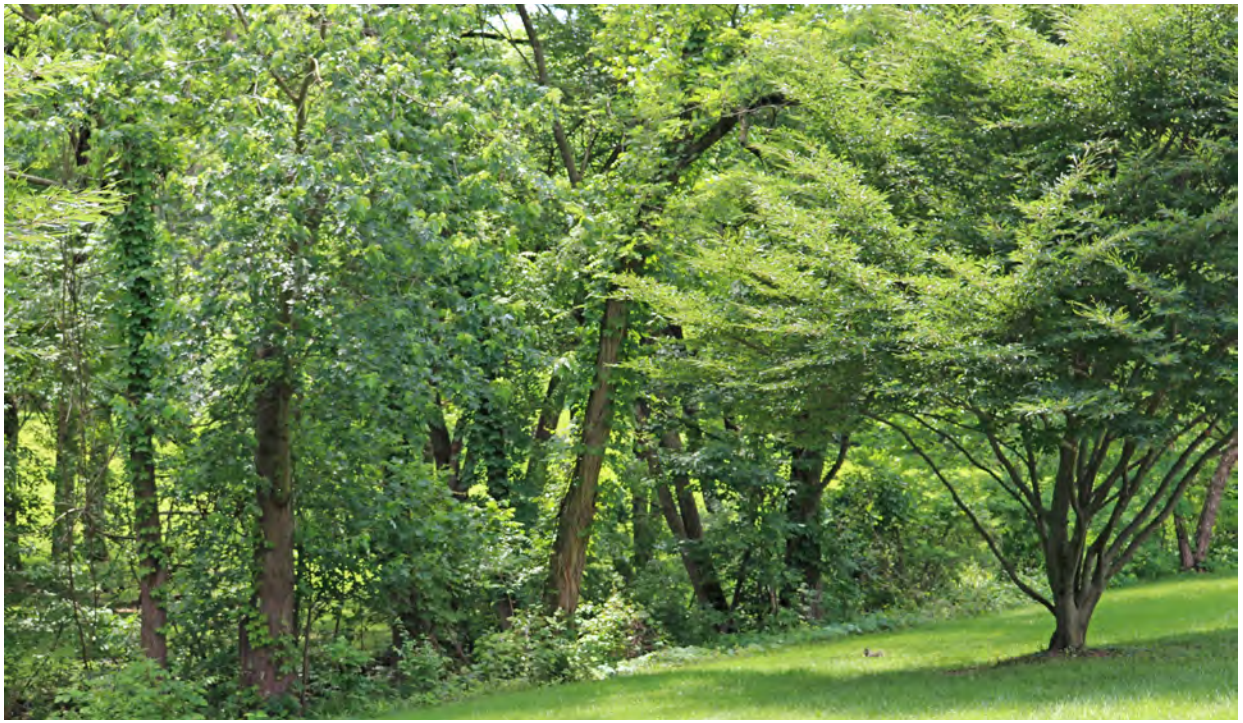
respiratory illnesses. On a broader level, trees act to sequester carbon dioxide and release oxygen, reducing the overall concentration of greenhouse gases in the atmosphere. These significant improvements to air quality can lead to improved health for all species in the Township.

Trees can improve water quality by filtering pollutants from stormwater runoff. Trees can reduce runoff velocity as trees take up and utilize stormwater. A significant amount of rainwater is absorbed by the tree as it falls, reducing the amount of runoff that occurs. Tree canopy can provide much needed habitat for various species of birds, insects, and animals.

Trees can also help to reduce the need for and cost of cooling a home or building as they naturally cool the air and produce shade. Trees can reduce residential heating costs as they act as a natural windbreak. They can significantly reduce runoff and erosion in addition to reducing the need for erosion control structures and thus stormwater management costs for the Township. Trees incorporated into landscaping have the potential to increase property values considerably. Trees can absorb and block sound, reducing noise pollution. This can be important in residential areas where the traffic of nearby commercial areas can be a nuisance.

Tree Canopy

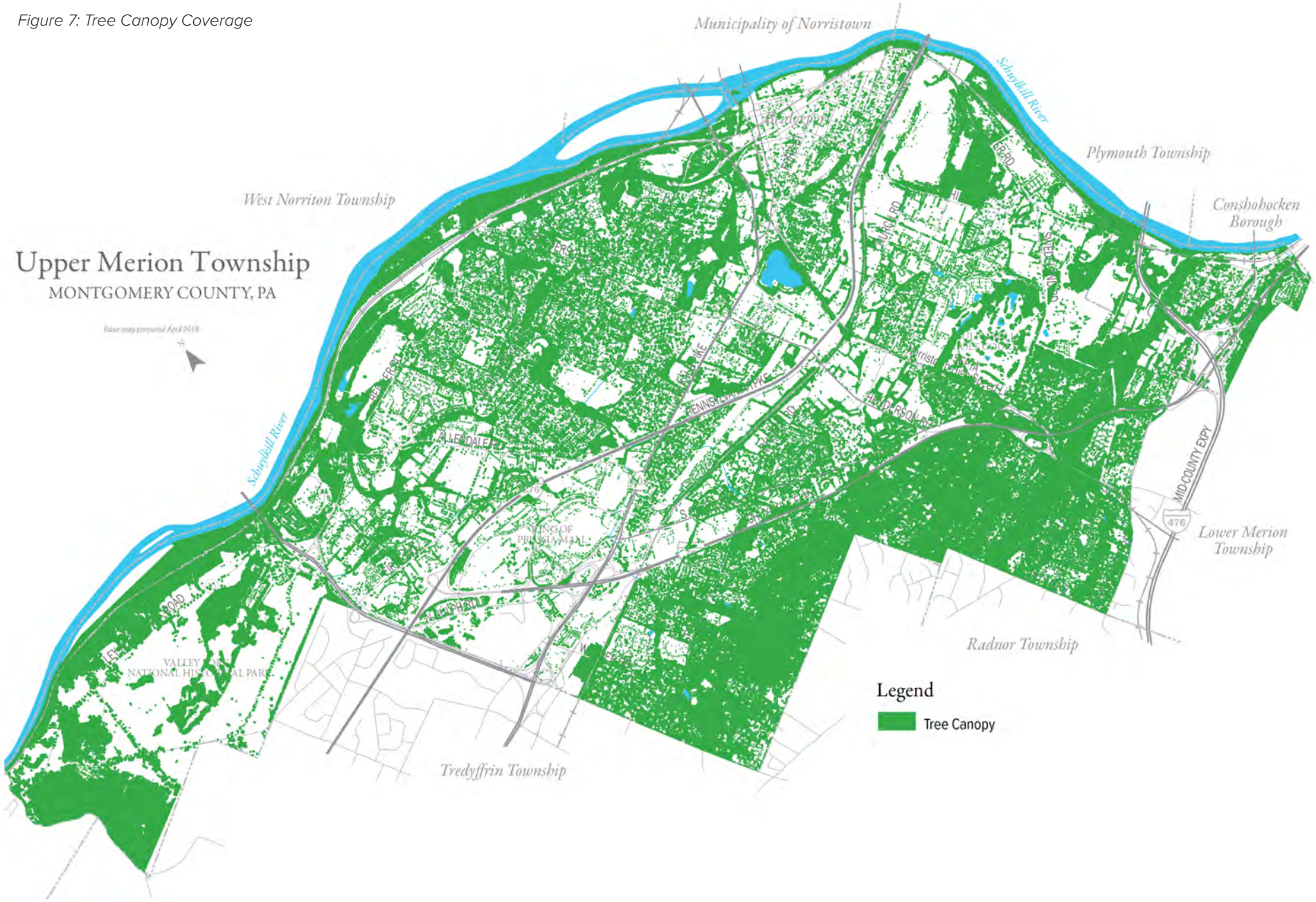
DVRPC conducted an analysis to determine the level of canopy cover in the Delaware Valley region. Upper Merion Township has tree canopy coverage of approximately 36.7%. Tree canopy coverage for the Township is shown in Figure 7. This is comparable to the coverage in West Conshohocken of 34.8%. Plymouth Township has slightly lower canopy coverage of 27.7%. Bridgeport and Conshohocken have less tree canopy coverage, at 16.3% and 17.3%, respectively. Lower Merion, known for its large number of trees, has higher canopy coverage of 58.7%.



Example of Healthy Tree Canopy

Well-Wooded Neighborhood

Figure 7: Tree Canopy Coverage



While Upper Merion has a moderate level of canopy, there are areas that can be easily identified as opportunities for new and additional tree plantings. Some residential neighborhoods are lacking in street and yard trees. Commercial corridors and mall and shopping center parking areas are almost completely devoid of trees. Improvements made in these areas have the potential to make places more attractive and appealing to live and/or visit. These improvements would likely require a small number of parking spaces to be sacrificed for plantings. This may present a challenge in achieving the goal of increasing canopy in parking lots.

Upper Merion falls somewhere in the middle between a higher and lower canopy coverage as compared to the rest of the region, but there exists the opportunity for increasing this percentage. While the Township is mostly built out, residential neighborhoods that are currently lacking in trees offer a large amount of space to mitigate this. Increasing canopy cover can yield numerous benefits to community, economic and environmental health.

UNIQUE NATURAL RESOURCES

The County's Natural Area's Inventory includes several unique natural resources that are located in the Township. A portion of the Township, predominantly Valley Forge Park, is located within the Middle Schuylkill River Conservation Landscape. This landscape spans the riparian corridor along the Schuylkill River from Port Kennedy to Royersford. Upper Merion's character is undoubtedly impacted by the presence of Valley Forge Park and the Schuylkill River.

Sites of State-Wide Significance

Upper Merion has three sites of state-wide significance in the Natural Lands Inventory, last updated in 2008: Port Kennedy Cave, Valley Forge Field and the Mount Joy Site, all located within Valley Forge National Historic Park. Port Kennedy Cave is considered an outstanding geological feature in the state due to the unusual collection of Pleistocene era fossils found there. The site was used for limestone quarrying between 1870 and 1896. The cave yielded countless fossils including saber-toothed tigers, giant ground sloth, mastodon, and giant cave bears. The cave was filled with asbestos-containing waste in the early 20th century, and its location was obscured until recently. Valley Forge Field provides a location for native and non-native grasses of both warm and cool season species. The Mount Joy Site contains several rare animal and plant species, including the Northern Slimy Salamander.

Valley Forge National Historic Park

RECOMMENDATIONS

Upper Merion's existing level of development presents specific challenges in regard to maintaining a healthy natural environment. Looking forward, the Township should pay particular attention to areas that present an opportunity for ecological improvements that will help to preserve the natural character of Upper Merion. There are several opportunities for improving the state of the natural environment in the Township. They are as follows:

- **Tree Canopy**—Increase the overall percentage of tree canopy in the Township in both residential and commercial areas. This can help to improve water quality and reduce the level of stormwater runoff volume and velocity. This could be done through the adoption of a tree ordinance requiring the planting of street trees or through educational incentive programs. Strategies could be integrated into the existing efforts by the KOP Business Improvement District (KOP BID) and the Township's Shade Tree Commission for a more holistic approach.
- **Riparian Buffers**—Revegetate riparian buffers along streams where it is feasible in order to significantly improve stream health. Improvements in water quality to the Schuylkill River can yield better recreational opportunities on the river, which is currently underutilized. It can also improve available aquatic habitat and aquatic species. Making this improvement is a particular challenge as the Schuylkill River's water quality issues stem from many other communities as well. While this is true, efforts can still be made at the municipal level. These improvements can be assisted by the development and adoption of a riparian buffer ordinance. Other options for encouraging revegetation of buffers are educational and incentive programs for re-plantings.
- **Stormwater Management and Infiltration**—Increase infiltration opportunities where possible and where it will not create hazardous conditions due to underlying geology and topography. Parking areas are one area for potential green stormwater management opportunities. Infiltration over karst topography requires certain precautionary measures, such as the lining of stormwater basins. These types of treatments should be minimized, with stormwater management focused predominantly outside of these areas if possible. BMPs could be implemented and focused more on infiltration in some areas and water quality in other areas depending on the conditions. The Township could also develop more stringent regulations regarding stormwater management and karst/sinkhole topography.

PARKS, RECREATION, AND OPEN SPACE

Upper Merion has a total of 37 parks and open space areas in the Township. Valley Forge National Park, located in the western portion of the Township, comprises approximately 14% of the Township's overall acreage (1,500 acres). Parks are distributed fairly equally throughout the Township, excluding some core commercial, business, and office districts which at this time are lacking in parks and open space. Parks range in size from less than 1 acre in size (mini parks) to over 10 acres (community service parks). A high number of the existing parks in the Township were constructed in the 1960's and 70's, making maintenance a key issue in keeping parkland usable by the public.

Upper Merion has had a history of making efforts to obtain open space lands for resource protection and parkland development. This began in the 1940's and 50's with the acquisition of some former "impounding basins" along the Schuylkill River that were formerly used for dewatering ponds for dredge materials taken from the river.

Valley Forge National Park Arch

Heuser Park and Bob Case Parks are located on two of these former impounding basins. Other Township acquisitions include land along the Schuylkill River and Crow Creek for the purpose of future trails.

Maintenance

The Township has a cooperative relationship with the Upper Merion Area School District (UMASD) in regard to the use and maintenance of park facilities. Information regarding ownership and maintenance this can be found in the Parks and Recreation and Open Space Inventory table (Figure 1).

Park maintenance in the Township is done by the Park and Shade Tree Maintenance Division of the Public Works Department, which has a total of four employees. Maintenance work is done three days a week with two other days used for setting up equipment and preparing facilities for sports and recreation programs and other undertakings. Volunteer-based maintenance work, including mowing, is occasionally undertaken by various Township volunteer organizations at several of the parks.

Merrill C. Young Park Pavillon

Maintenance work includes: lawn care, fertilization, irrigation, disease and insect control, cleaning and sweeping of hardscape surface such as walkways and tennis courts, various repair work of facilities and park amenities, facility inspection, floral plantings, cleaning and stocking of restrooms, maintenance of other park features such as sports equipment, picnic tables and signs, maintenance of sports fields (in-field raking, paint striping and lining), and inspection and maintenance of play equipment. Park security work is done by the Upper Merion Township Police Department.

TOWNSHIP PARKS AND RECREATION AND OPEN SPACE PLANS

The Upper Merion Parks and Recreation Master Plan was previously completed in 1994 and provided an inventory of parks and specific recommendations as to how to improve the parks system. Some of these recommendations included: improved access to and a trail along the Schuylkill River, acquisition of the former silt basins along the Schuylkill, continued cooperative relationship with the UMASD, and the development of a Township-wide pedestrian and bicycle plan.

The Upper Merion Township 2004 Open Space and Environmental Resource Plan Update was adopted in September of 2005 and was an update to the Open Space and Environmental Resource Plan adopted in 1994. The 2004 plan update included an inventory of Township-owned recreation and open space facilities, an outline of goals and objectives, existing natural resource analysis, open space needs, and recommendations for implementation. Some of the key goals established in the plan include: making the Schuylkill River frontage available for use, broadening the network of connections for access to open space, preserving natural resource areas, and developing the potential for open space areas to include areas for public use.

In 2016 the Township adopted the Township Comprehensive Parks and Recreation Master Plan. This plan was an updated version of the Parks and Recreation Master Plan in 1994. It laid out goals and objectives for the park and open space system and an inventory of all parkland and open space. The plan incorporated extensive public outreach to assist with establishing recommendations. Each individual park was evaluated based on several criteria established in the plan. Park elements were ranked based on if they were good, fair or poor. Categories included: ADA compliance, walkway conditions, restrooms/structures, signage, landscaping/vegetation, benches/seating, trash collection, lighting, playgrounds, security, green opportunities, court sports, and overall maintenance. A ten-year timeline for implementing recommendations in the plan was then established. More extensive details regarding the park and recreation system in Upper Merion can be found in this master plan. This plan can be found here: [insert live link here].

INVENTORY/EXISTING CONDITIONS

Notable parks

Upper Merion has an extensive park system with some parks being heavily used and more notable than others. These parks are listed below:

- Heuser Park, located in the northern part of the Township, was constructed in 2004. It is approximately 111 acres with 31 of those being used for park and recreation space. This includes a sports complex that contains a varsity baseball field, softball fields, multi-purpose fields, a pavilion, playgrounds and walking paths. In 2019, plans are moving forward to evaluate possible uses for undeveloped acreage on the site.

Heuser Park

- The newly constructed Upper Merion Township Community Center Complex provides extensive indoor recreation space consisting of ball courts and fitness areas. The complex also includes a swimming pool and the Upper Merion Senior Service Center. Other offering include: recreational programming, meeting rooms, athletic courts, art and cooking studios, and other public spaces
- The Township Building and Township Building Park serves as a venue for community events such as the Upper Merion Farmer's Market and Concert under the Stars
- Walker Park, located centrally in the Township, is a widely used sports complex that is shared by the Township and the UMASD.
- Nor-View Farm Park is a working farm which contains a garden center, dairy stand, and petting zoo.
- The McKaig Nature Education Center and Park contains a preserved swath of woodlands that spread over 89 acres. The Roberts School House is on the school district property and used by the McKaig Education Center.

Parks and Recreation and Open Space Inventory

Figure 8 contains all of the parkland (both Township owned and non-Township owned) and open space areas in the Township.

Trails

There are several existing trails in the Township as well as trail projects in the works that will help to improve connectivity between parks and open

Upper Merion Township Community Center Complex

Upper Merion Farmer's Market/Township Building Property

McKaig Nature Education Center

Figure 8: Parks and Recreation and Open Space Inventory

Park	Ownership	Size	Use	Facilities/Amenities
Baxter Field	Owned by UMASD but maintained by Twp. and UM Soccer Club	6.5 acres	Sports field complex	Several turf grass soccer fields; field house with concessions, restrooms, and covered eating area
Belmont Park	Owned by UMASD	4.6 acres	Active recreation park	Small baseball and soccer field, basketball court, playground, walking paths and seating area
Bob Case Park	Owned by Twp.	22.2 acres	Sports field complex	Open lawn area capable of supporting 2 medium-sized soccer fields, a small storage building, portable restroom, and trailhead
Bob Holland Memorial Park	Owned by Twp.	10.3 acres	Active and passive recreation park	Softball field, basketball court, playground and walking paths
Bob White Park	Owned by Twp.	19.4 acres	Active and passive recreation park	Softball field, basketball, roller hockey, and tennis courts, playground and walking paths
Executive Estates Park	Owned by Twp.	9.3	Active and passive recreation park	Basketball court, tennis courts, playground, picnic pavilion, and walking paths
Heuser Park	Owned by Twp.	111.8 acres	31 acres of active recreation	1 varsity baseball field, 2 softball fields, 3 multi-purpose fields, a pavilion, playgrounds and walking paths
Upper Merion Boat House	Part Owned by Twp. (the park site is owned and maintained by Twp. And the Trinsey Memorial Boat House is owned and maintained by UMASD)	2.1 acres	Boat house	Wooden dock for boat launching, a building for storage and events, and some bench seating along river
Kingwood Road Park	Owned by PECO and leased to Twp.	1.2 acres	Active and passive recreation	Basketball court, roller hockey court, and playground
Leo M. Ross Park	Privately-owned and leased and maintained by Twp.	7 acres	Active and passive recreation park	Softball field, basketball court, and playground
McKaig Nature Center	Part Owned by Twp. (some portions owned by Upper Merion Park and Historic Foundation)	89.1 acres	Passive recreation park	Various levels of hiking trails
Merril C. Young Park	Owned by Twp.	2.5 acre	Active recreation park	Playground, basketball courts, softball field, and wooden picnic pavilion
Nor-View Farm	Owned by Twp.	9.3 acres	Working farm and recreational facility	Working farm, garden center, ice cream shop, petting zoo, playground, drinking water fountain and pastures
Swedeland Park	Owned by Twp.	8.8 acres	Active recreation park	Basketball courts, a picnic pavilion, softball field, and playground
Swedesburg Park	Owned by Twp.	0.8 acres	Active recreation park	Basketball court, covered pavilion and playgrounds
Sweetbriar Park	Owned by Twp.	32.8 acres	Active and passive recreation park	Playgrounds, basketball courts, a former softball field, disc golf and walking trails

Park	Ownership	Size	Use	Facilities/Amenities
Tabak Park	Owned by Twp.	1.2 acres	Active recreation park	Playground and basketball court
Upper Merion Community Center and Pool	Owned by Twp.	21 acre site	Community center	Community center with swim club (adjacent to Volpi Common Park)
Upper Merion Township Building Park	Owned by Twp.	22 acres	Township building and adjacent parkland	Pavilion, playground, lake, butterfly gardens, picnic area, and walking paths
Valley Forge Acres Park	Owned by Twp.	1.9 acres	Active recreation park	Basketball court, playground, covered pavilion, and walking paths
Valley Forge National Park	Owned by Federal Government	1,500 acres	National, historic park	
Volpi Common	Owned by Twp.	3.6 acres	Passive recreation park	Backs up to 22 acres of wooded open space that borders the UM Community Center
Walker Park	Owned by Twp.	31.1 acres	Passive and active recreation park	Softball fields, basketball courts, a playground, concessions pavilion with restrooms and walking paths
Whitegate Park	Owned by Twp.	5.2 acres	Passive and active recreation park	Half basketball court, playground, tennis courts, and open field area
William M. Wall Memorial Park	Owned by Twp.	0.8 acres	Passive and active recreation park	Basketball court, playground, and picnic area
Beidler Road Park	Township Open Space	15.4 acres	Open space	Large unimproved wooded parcel
Betzwood Park	Township Open Space	0.6 acres	Open space (riverfront)	Unimproved open space parcel with no pedestrian or vehicular access
Kerwood Natural Area	Township Open Space	2.6 acres	Open space	Unimproved wooded area with no formal access
Kunda Park	Township Open Space	6.8 acres	Open space	Unimproved wooded area with the only access being a private driveway
Mt. Pleasant Park	Township Open Space	1.1 acres	Open space	Unimproved wooded parcel with no formal access
Natural Lands Trust No. 1	Township Open Space	2 acres	Open space	Unimproved open space
Natural Lands Trust No. 2	Township Open Space	12.5 acres	Passive recreation	Several walking trails
Schuylkill Riverfront Park	Township Open Space	4.3 acres	Open space	Unimproved wooded parcel with no pedestrian or vehicular access
Sumner Dam	Township Open Space	13.3 acres	Open space	Nature area that was once the site of a working dam (contains remnants of dam and gravel access road)
Swedeland Basin	Township Open Space	24.4 acres	Open space (riverfront)	Unimproved area that was once an impounding basin with access via dirt bike/off-road vehicle trails
South Warner Road Open Space	Township Open Space	13.1 acres	Open space	Unimproved wooded parcel divided by South Warner Road with no formal access
Moore/Irwin House Open Space	Township Open Space	4.8 acres	Open space	Wooded parcel with historic farm and farmhouse

Figure 9: Township Parks and Open Space Map

1. Baxter Field
2. Beidler Road Park
3. Belmont Park
4. Betzwood Park
5. Bob Case Park
6. Bob Holland Memorial Park
7. Bob White Park
8. Executive Estates Park
9. Heuser Park
10. Upper Merion Boat House
11. Kerwood Natural Area
12. Kingwood Road Park
13. Kunda Park
14. Leo M. Ross Park
15. McKaig Nature Education Center
16. Merril C. Young Park
17. Mount Pleasant Park
18. Natural Lands Trust Area No. 1
19. Natural Lands Trust Area No. 2
20. Nor-View Farm
21. Schuylkill Riverfront Park
22. Sumner Dam
23. Swedeland Basin
24. Swedeland Park
25. Swedesburg Park
26. Sweetbriar Park
27. Tabak
28. Upper Merion Community Center
29. Upper Merion Township Building
30. Valley Forge Acres
31. Valley Forge National Park
32. Volpi Common
33. Walker Park
34. Whitegate Park
35. William M. Wall Memorial
36. S. Warner Road Open Space
37. Moore/Irwin House Open Space

space and surrounding neighborhoods. A 2.2 mile segment of the West Schuylkill River Trail was completed in the fall of 2015. The segment connected Heuser Park to Valley Forge National Historic Park near the Route 422 Bridge. When the entire trail is completed it will be 15.5 miles in length, running along the west bank of the Schuylkill from Philadelphia to Bala Cynwyd, continuing through Lower Merion Township to the edge of West Conshohocken and through Bridgeport to Heuser Park.

The Chester Valley Trail stretches 13 miles through the Great Valley and Malvern sections of Chester County and into Upper Merion Township. Montgomery County is extending the trail by four miles from South Gulph Road in the Township through Bridgeport Borough and into Norristown, connecting with the Schuylkill River Trail.

Upper Merion received a $1.25 million grant at the end of 2016 from the Multimodal Transportation Fund that was approved by the Commonwealth Financing Fund. The money will be assigned to the first two segments of the Crow Creek Trail Project. The first segment will focus on increasing connectivity and mobility between residents, the middle school and high school, Township Community Center, and pool complex. This will run from the high school and middle school to Volpi Common and continue through the woods to the Community Center. The second segment will involve the construction of a pedestrian bridge and walking path connecting to the Sweetbriar Park path and continuing to West Beidler Road.

A map containing all parks, open space, and trails in the Township is shown in Figure 9.

Schuylkill River West Trail

UPPER MERION TOWNSHIP HISTORIC RESOURCES

Upper Merion Township is home to many historic resources due to the time of its settlement and the prominence of Valley Forge Historic Park in revolutionary history. The King of Prussia (KOP) Historical Society has created a record of all of the historic buildings and sites located in Upper Merion Township. The record of historic buildings is contained in Figure 10 and historic sites are contained in Figure 11. Their proximal locations are shown in Figure 12.

One of the more well-known sites is the Moore Irwin House which is a 4.8 acre wooded parcel located just south of East 8th Avenue in the former King of Prussia Business Park, now named Moore Park. The parcel is home to the former John and Jane Moore Farm. The site contains the original farmhouse, circa 1750, and several large tree species. Trout Creek runs through the site and the corridor is well buffered with the trees on the site. It formerly served as the location of the Township Parks and Recreation administrative offices. The building has been vacant since 1992 and has experienced damage through water and structural deficiencies since. Cost estimates for repair and a study of its condition was done in 2008. There is no formal access to the site at this time.

Washington's Headquarters in Valley Forge Park is widely considered the most historically significant

Moore Irwin House

Moore Irwin House Overgrowth

Washington's Headquarters in Valley Forge National Park

Figure 10: Upper Merion Historic Buildings

Address	Description	Date(s)	Details
1400 N. Outer Line Drive	Washington's Headquarters	c. 1773	
1050 Valley Forge Road	Kennedy Mansion	c. 1852	
700 Moore Road	Moore-Irwin House	c. 1700s	
576 Keebler Road	Pancoast House	c. 1930	
534 Keebler Road	Allendale Farmhouse	c. 1990	
382 W Valley Forge Road	Loughlin Farmhouse	c. 1752-1750	
180 Town Center Road	Former Wolfsohn Memorial Library	C. 1962	Site of the first public library in Upper Merion Township. Named after Nat N. Wolfsohn because of a $40,000 donation from his estate to Upper Merion for the financing of a library. The library moved to its new home on Valley Forge Rd. in 1989. Today, this building has a number of small businesses occupying its walls.
740 River Road	Christ Church, Old Swedes	c. 1760	
158 Allendale Road	Powell House	c. 1750	Once a tenant house for Billy Walker's farm, this building was sold to the Powell family in 1944. The Upper Merion Township Police Station used to be located directly next door in what is now a law office.
826 W Dekalb Pike	Dr. Pauling's Home	c. 1747	
101 Bill Smith Blvd	King of Prussia Inn	c. 1700s	
325 S. Gulph Road	Buttonwood		
Henderson Road	Estock House	c. 1860	
345 King of Prussia Road	Thomas Rees House	c. 1745-1760	
889 Croton Road	Old Roberts Schoolhouse	c. 1845	One room schoolhouse in use from 1854 to 1918
425 Alderbrook Drive	Alderbrook	c. 1908	
1171 Radnor Road	Exley Log Cabin	c. 1648	
660 Fletcher Road	Plum Nilly Estate	c. 1700s	Plum Nilly Estate is an old Welsh farmhouse sitting on 8.8 acres.
580 Shoemaker Road	Former Samuel Henderson Barn	c. 1799	The former barn of Samuel Henderson who ran a sizeable stone cutting operation from a quarry on the property. His home (now an office building) sits across the street at 583 Shoemaker Rd.
583 Shoemaker Road	Samuel Henderson's Home	c. 1799	The home was purchased in 1964 and turned into an office building. His barn (now a shopping center) sits across the street at 580 Shoemaker Rd.
1000 Boxwood Court	Poplar Lane	c. 1758	
Old Gulph Road	Quarters of Lt. Aaron Burr		

Source: KOP Historical Society

Figure 11: Upper Merion Historic Sites

Address	Description	Date(s)	Details
	Limekiln Ruins		
King of Prussia Mall	Mall Dedication Plaque	c. 1963	The plaque affixed to the King of Prussia Mall reads, "DEDICATED TO THE AMERICAN WAY OF LIFE IN THIS THE NATION'S MOST HISTORIC COMMUNITY - August 22, 1963"
Gulph Road	Old Mile Marker "18"	c. 1713	At this location is a mile marker with the number "18" indicating the number of miles to Philadelphia. Most likely placed here in the year 1713 when Gulph Rd. was laid out.
	Keystone Marker - King of Prussia (Paoli - 6)	c. 1786	Manufactured by the Geiser Manufacturing Company
	Keystone Marker - King of Prussia (Norristown - 3)	c. 1786	Manufactured by the Geiser Manufacturing Company
601 Croton Road	Samuel Brooke Lime Kiln	c. 1817	
1045 Croton Road	Martin's Dam	c. 1848	After the creek was dammed in 1848, William Martin, who came from England, built a woolen mill in its vicinity. Above the dam, the Hughes family also built a small water-powered saw mill.
Gulph Road	Old Mile Marker "15"	c. 1713	At this location is a mile marker with the number "15" indicating the number of miles to Philadelphia. Most likely placed here in the year 1713 when Gulph Rd. was laid out.
Trinity Road	Plaque - "First National Thanksgiving Celebrated by Washington's Army"		The sign reads, "HERE AT 'THE GULPH' ON THURSDAY, DECEMBER 18, 1777 WASHINGTON'S ARMY DELAYED THEIR MARCH INTO VALLEY FORGE BY ONE DAY TO CELEBRATE THE FIRST THANKSGIVING OF THE UNITED STATES PROCLAIMED BY THE CONTINENTAL CONGRESS WITH CHAPLAINS THE DEVINE SERVICE. THIS THANKSGIVING IN SPITE OF SUFFERING THE DAY BEFORE THE MARCH INTO VALLEY FORGE SHOWED THE REVERENCE AND CHARACTER THAT WAS FORGING THE SOUL OF THE NATION." Placed "BY VARIOUS HISTORICAL AND PATRIOTIC SOCIETIES AND THE NATIONAL THANKSGIVING FOUNDATION"
Trinity Road over Gulph Creek	Bridge over Gulph Creek	c. 1789	This historic stone arch bridge spans 20 feet over Gulph Creek and is one of the oldest bridges in the United States. It was added to the National Register of Historic Places in 1988.
	Gulph Mills Memorial	c. 1892	Erected in 1892 by the Pennsylvania Society of the Sons of the Revolution and rededicated in 1962 when it was moved to Executive Estates Park, this nine feet tall boulder reads, "The main Continental Army commanded by Gen. Washington encamped in this immediate vicinity from December 13-19, 1777, before going into winter quarters in Valley Forge."
South Gulph Road	Hanging Rock		

Source: KOP Historical Society

site in the park. Washington made his home in the stone building during the six month encampment in the area. The house served as the located where Washington and his highest ranking officers lived and worked. There are several other historic farmhouses, inns, institutional uses, and barns that are remnants of the Township's rich history.

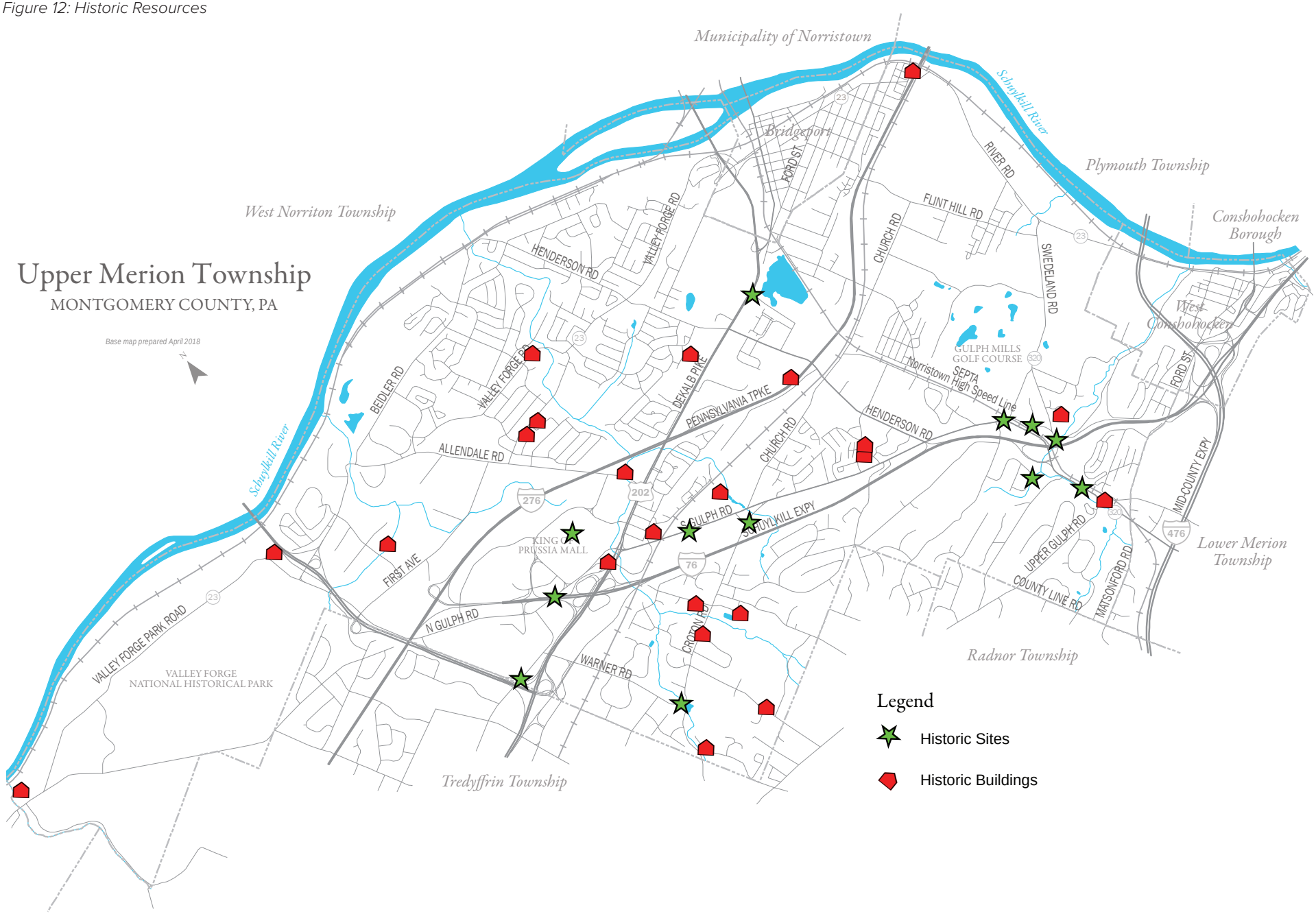
GOALS, FINDINGS AND RECOMMENDATIONS

Goals

The Township Comprehensive Parks and Recreation Master Plan established several goals based on the state of the park system:

- Evaluate the current conditions and elements of each park facility and identify and prioritize the need for improvements and maintenance plans.
- Ensure that all park facilities are safe and accommodate the physically-challenged.
- Evaluate the staffing and funding of the parks and recreation department and recommend improvements based on findings.
- Identify ways to enhance relationships with the various groups that use park facilities as well as how to improve the continued cooperation of the Township with the UMASD.
- Involve key officials and public participants in the decision-making process and seek feedback through an extensive public outreach program.

Figure 12: Historic Resources



- Analyze the need for additional parkland and open space and make recommendations for selective acquisitions of open space.
- Promote environmental awareness and the preservation of natural areas and resources.
- Promote connectivity between parkland, open space, and surrounding neighborhoods.

Findings

The comprehensive park plan resulted in some key findings regarding the state of the park system. Overall, general public perception of the parks and recreation system is good but maintenance of the parks has some room for improvement. The main reasons for use of the parks include walking, hiking, exercise, playgrounds, and organized sports and special events. Some of the main reasons why people in the Township choose not to take advantage of parks include: general lack of maintenance, litter, outdated equipment/facilities, lack of safety measures and inadequate lighting. Important park amenities cited by the public include trails/pathways, restrooms, adequate safety measures and lighting.

The parks cited as in most need of improvement are the Boathouse, Heuser, Walker, Sweetbriar, and the Township Building Park. Heuser Park in particular has been cited as very overused due to it having the main multi-purpose fields in the Township. A majority of park users feel there is adequate park space in the Township but cited the King of Prussia Mall and the office park areas as being the most in need areas in terms of park space. Pedestrian connectivity to and between parks and ADA accessibility and safety within parks was highly cited as a needed improvement. Connectivity to the Schuylkill River waterfront is extremely limited and there is strong public demand for it.

Recommendations

The 2016 Township Comprehensive Parks and Recreation Master Plan established a comprehensive list of key recommendations for the Township to implement in order to maintain and improve the parks system. One major recommendation made was to make critical safety improvements to parks by repairing and removing hazards. The first step in doing this is to conduct a detailed ADA access audit of each facility and implement a plan to make the necessary improvements. The plan recommended developing a policy for operating procedures regarding maintenance activities as well as opening and closing times, lighting requirements, and patrolling frequency within the park. The plan recommended conducting a detailed sports field use study to determine who the main users are and the level of frequency of use.

The Township should develop a Township-wide trail network master plan to increase connectivity between parks, open space, and surrounding neighborhoods. Opportunities for acquisition of properties along the Schuylkill River should be sought in order to continue development of the Schuylkill River West Trail as well as to provide access to the riverfront for the public. The Township should continue to conserve and protect natural resources through land acquisitions and other land use controls. The master plan also recommended increasing park and open space opportunities within the core office parks and business districts using linear parks along roads and stream corridors.

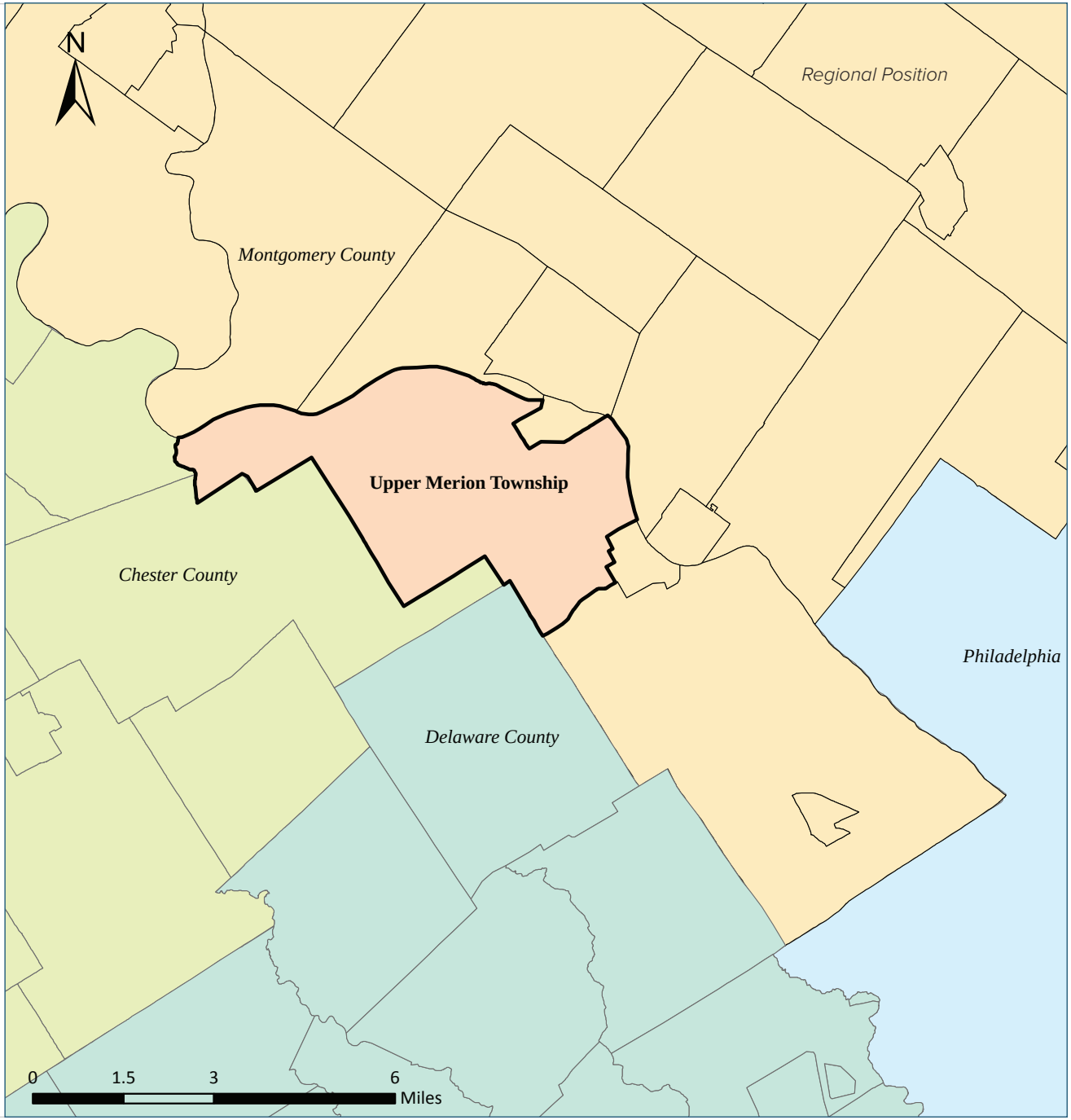
The sustainability of parks could be increased through the use of methods such as the use of solar power and green stormwater best management practices. Plantings of native species and the conversion of lawn areas to native meadows or woodlands could also increase the sustainability of the park system. The Township should continue the bi-annual inspection and removal of invasive species. Establishing partnerships with local businesses and corporations to gain donations and sponsorships could assist in funding park improvement projects. The Township will need to gain approval for additional capital improvement funding from the Board of Supervisors to implement projects. Coordination with the UMASD should continue and any future opportunities for expanded collaboration should be explored.

TRANSPORTATION

The transportation system and infrastructure of Upper Merion Township is vital for maintaining and promoting accessibility, safety, quality of life, and economic development. The Township has a high level of access to highway systems and public transportation. The level or lack of connectivity of streets in the Township presents some issues and opportunities for both residents and those traveling through Upper Merion. These issues include cut-through traffic in residential neighborhoods and congestion at some intersections. Residents and those who visit and work in the Township should be able to reach their daily destinations efficiently in order to maintain Upper Merion as a desirable place to live, work, and meet shopping and entertainment needs.

Upper Merion is approximately 17 square miles in size and 15 miles northwest of Center City Philadelphia. Interstate Routes I-76 and I-276 provide access to Philadelphia, New Jersey and New York. I-476, the Blue Route, provides access to Philadelphia International Airport, Northern

Delaware, and the Baltimore/Washington DC area via I-95. US Routes 202 and 422 provide access to other areas of southeastern Pennsylvania. Due to the confluence of major highways and roads, Upper Merion experiences major congestion problems in some areas of the Township at peak periods. The Township is also served by several public transportation options that provide opportunities for future growth.



DEMOGRAPHIC

The Township experiences unique commute patterns in comparison to other Montgomery County municipalities. As a major economic hub in the region, it supplies jobs to many workers inside and outside of Upper Merion. A vast majority of these workers commute into the Township and live elsewhere (95%). For the total number of residents in the township, 83% work outside and only 16.6% both live and work in Upper Merion. Figure 13 contains this data for those working in the Township and Figure 14 contains the data for residents of Upper Merion. In Montgomery County, for those employed within its borders, 40% live and work inside. For those living in the county, 47.8% both live and work here. Figures 16 and 17 contain this information. Figures 15 and 18 (respectively) portray the inflow and outflow of commute patterns in the Township and the County.

In the Township, approximately 80% of residents drive alone to work (see Figure 19). This number is similar for Conshohocken (85.5%) and Plymouth (82.3%). Lower Merion has a significantly smaller percentage of 65.5%, but a higher percentage of public transportation usage. This is easily explained through the easy access to transit and the close proximity of Lower Merion to Philadelphia. There is also a higher proportion of the population that works from home. Residents generally have a moderately low commute time with largest percentage within 15-19 minutes.

Figure 13: Inflow/Outflow Job Counts—Employed in Upper Merion

Inflow/Outflow Job Counts (Primary Jobs—All Workers)		
	Total	Percent
Employed in Upper Merion	*54,590*	*100%*
Employed in Upper Merion, Living Outside	*51,857*	*95%*
Living and Employed in Upper Merion	*2,733*	*5%*

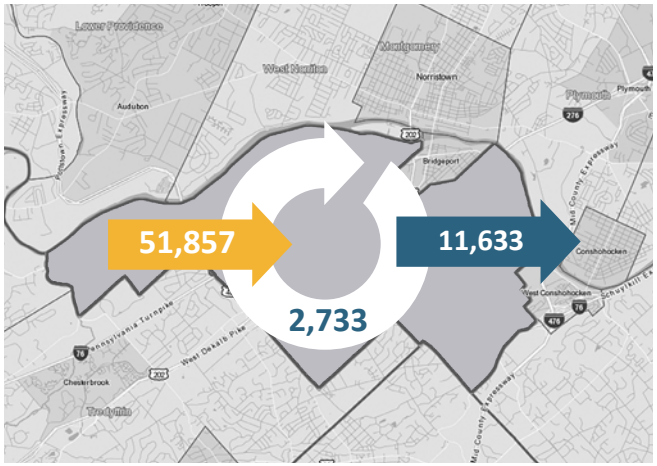
Source: US Census ACS 5 Year 2014

Figure 14: Inflow/Outflow Job Counts—Living in Upper Merion

Inflow/Outflow Job Counts (Primary Jobs—All Workers)		
	Total	Percent
Living in Upper Merion	*14,366*	*100%*
Living in Upper Merion, Employed Outside	*11,633*	*81%*
Living and Employed in Upper Merion	*2,733*	*19%*

Source: US Census ACS 5 Year 2014

Figure 15: Upper Merion Inflow Outflow Primary Jobs



Source: On the Map

Figure 16: Inflow/Outflow Job Counts—Employed in Montgomery County

Inflow/Outflow Job Counts (Primary Jobs—All Workers)		
	Total	Percent
Employed in Montgomery County	*453,535*	*100%*
Employed in Montgomery County, Living Outside	*272,311*	*60%*
Employed and Living in Montgomery County	*181,224*	*40%*

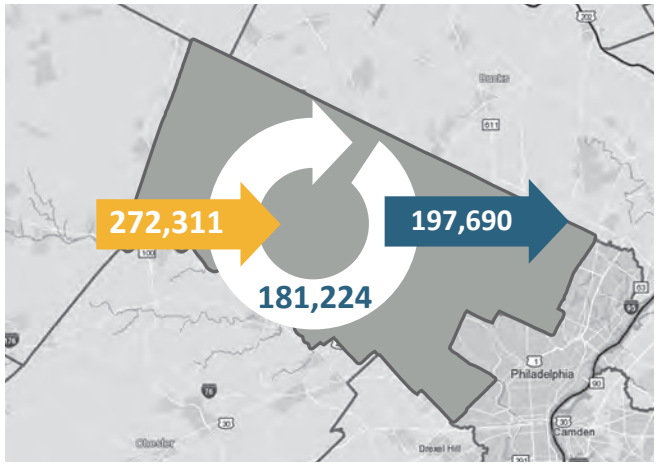
Source: US Census ACS 5 Year 2014

Figure 17: Inflow/Outflow Job Counts—Living in Montgomery County

Inflow/Outflow Job Counts (Primary Jobs—All Workers)		
	Total	Percent
Living in Montgomery County	*378,914*	*100%*
Living in Montgomery County, Employed Outside	*197,690*	*52.2%*
Living and Employed in Montgomery County	*181,224*	*47.8%*

Source: US Census ACS 5 Year 2014

Figure 18: Montgomery County Inflow/Outflow Primary Jobs



Source: On the Map

Figure 19: Upper Merion Travel Time to Work (2014)

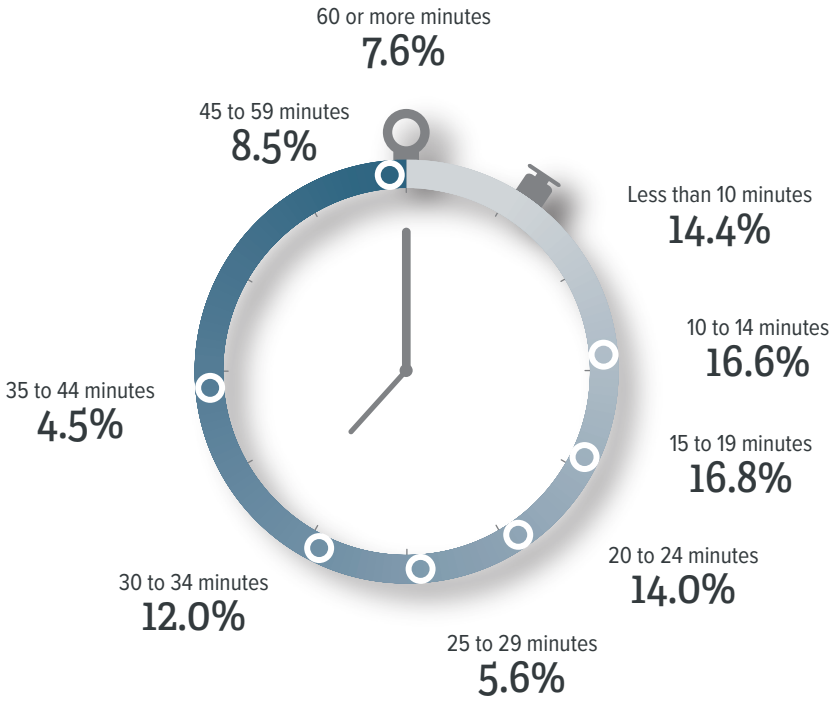


Figure 20: Upper Merion Means of Transportation to Work

Upper Merion Means of Transportation to Work					
 Worker 16 yrs and over	 Car, truck, or van	 Public transportation (excluding taxicab)	 Walked	 Bicycle, taxicab, motorcycle, or other means	 Worked at home
15,254	13,288	761	241	35	929
100%	87.1%	5.0%	1.6%	0.2%	6.1%

Figure 21: Means of Transportation to Work: Nearby Municipalities

Nearby Municipalities Means of Transportation to Work	Conshohocken		Lower Merion		Plymouth		Tredyffrin	
	Total	Percent	Total	Percent	Total	Percent	Total	Percent
Workers 16 years and over	*4,978*	*100%*	*27,798*	*100%*	*8,783*	*100%*	*14,850*	*100%*
Car, truck, or van	*4,251*	*85.4%*	*19,737*	*71.0%*	*7,755*	*88.3%*	*11,821*	*79.6%*
Drove alone	*4,042*	*81.2%*	*18,319*	*65.9%*	*7,044*	*80.2%*	*11,123*	*74.9%*
Carpooled	*204*	*4.1%*	*1,418*	*5.1%*	*711*	*8.1%*	*698*	*4.7%*
Public transportation (excluding taxicab)	*329*	*6.6%*	*3,086*	*11.1%*	*351*	*4.0%*	*1,277*	*8.6%*
Walked	*224*	*4.5%*	*2,085*	*7.5%*	*193*	*2.2%*	*401*	*2.7%*
Bicycle	*5*	*0.1%*	*195*	*0.7%*	*-*	*0.0%*	*30*	*0.2%*
Taxicab, motorcycle, or other means	*20*	*0.4%*	*111*	*0.4%*	*26*	*0.3%*	*104*	*0.7%*
Worked at home	*154*	*3.1%*	*2,530*	*9.1%*	*457*	*5.2%*	*1,233*	*8.3%*

Source: US Census ACS 5 Year 2014

Aerial of Upper Merion Township

STREETS

Functional Classification

Functional classification is a tool created from standards established by the American Association of State Highway and Transportation Officials (AASHTO) and used by PennDOT. The classification system is a grouping of roads into a hierarchy based on the type of service and function they provide. This hierarchy is used to establish design guidelines appropriate for each road, as well as to coordinate road functions and improvements among neighboring communities and throughout the state. Figure 22 on page40 shows the hierarchy of roads in Upper Merion Township, including the following classifications: Expressways, Principal Arterials, Minor Arterials, Collectors, and Local Roads.

Hierarchy of roads

Expressways

Expressways are multi-lane highways with fully controlled access, usually provided exclusively at grade separated interchanges. They are a limited access facility which services regional travel demands. These roadways deny access to adjacent properties and provide entrances by a limited number of grade-separated interchanges. Expressways are used in corridors that need to move high volumes of traffic at high speeds while providing high levels of safety and efficiency. These roads typically traverse and connect major metropolitan areas. US 422 and I-76 are examples of expressways in the Township.

Principal Arterials

Principal arterials are controlled or semi-controlled major roadways which serve regional and local traffic demands. These roadways place heavy restrictions upon access to adjacent properties. Entrance and egress are provided at grade-level intersections. These roadways provide a high degree of mobility to long trips,

Schuylkill Expressway at Gulph Mills

US 422

but do not necessarily have fully controlled access and are not a part of the Interstate Highway System. Principal arterials in the Township include Dekalb Pike, Henderson Road, and S. Gulph Road.

Minor Arterials

Minor arterials connect local roads with principal arterials and augment principal arterials in serving major activity centers. They generally serve trips of more moderate lengths. The recommended right-of-way for such roads is 80 feet with all travel lanes. Minor arterials in the Township include Valley Forge Road, Allendale Road, and Swedeland Road, among others.

Henderson Road

Allendale Road

Neighborhood Level Road Character

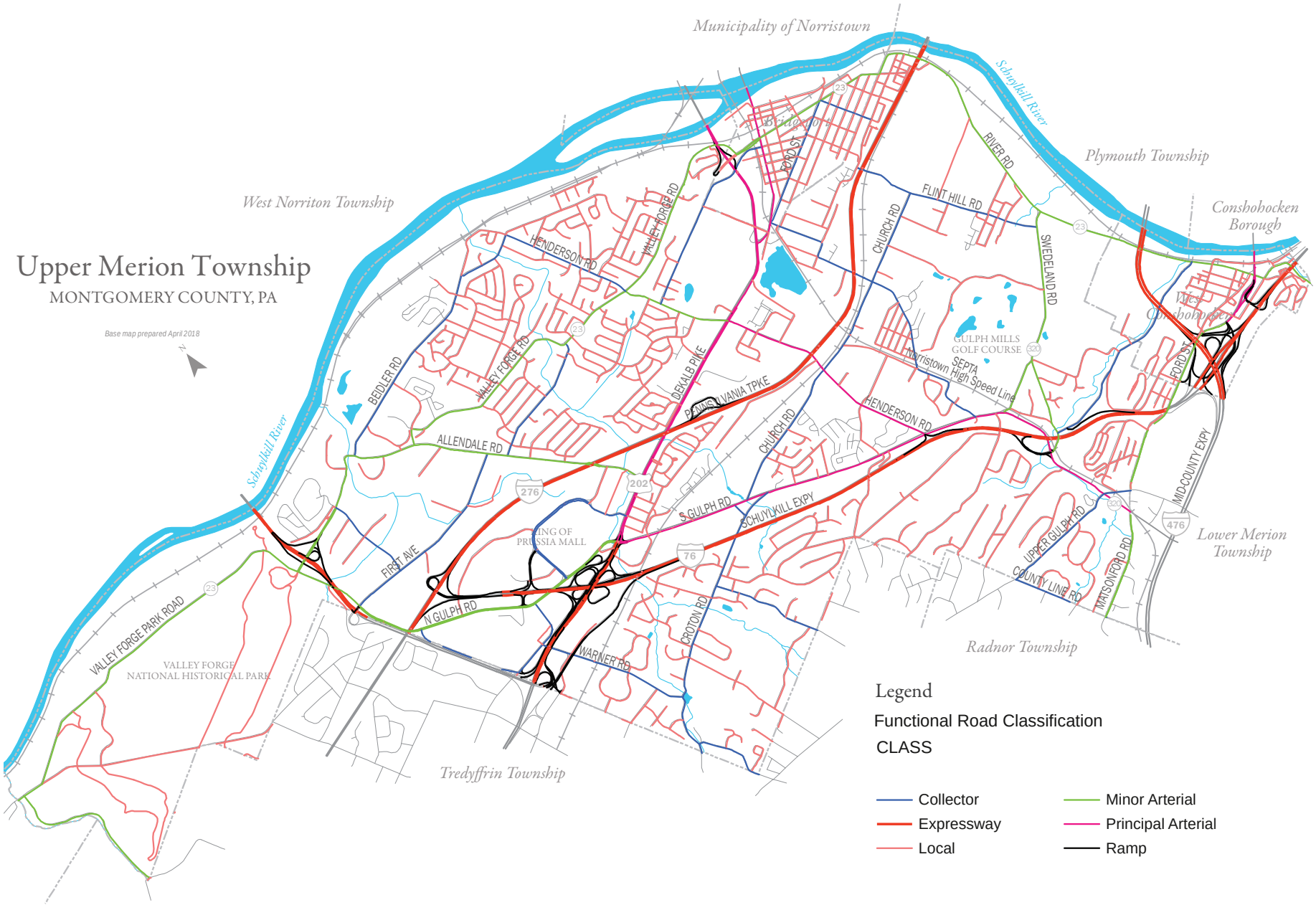
Collectors

Collector roads provide a mix of mobility (the ability to travel through an area quickly) and accessibility (road interconnectivity). They typically serve trips up to four miles. Examples of collector roads in the Township are Crooked Lane, Beidler Road, and Upper Gulph Road.

Local Roads

Local roads carry the lowest volumes of traffic and provide vehicular access to adjacent land uses. They generally do not serve trips longer than one mile. With property access being a main function of these roads, they generally have lower posted speeds between 20 and 30 miles per hour. These roads primarily serve adjacent development and do not attract through or other traffic. Examples of local roads in Upper Merion are Gypsy Lane, Yerkes Road, and Prince Frederick Street.

Figure 22: Functional Road Classification



Road Ownership

Figure 23 contains a table containing the roadway classification, ownership, and posted speed limit (MPH) for selected Township roads. Ownership is mainly split between PennDOT and Upper Merion Township. The Township does have jurisdiction on the majority of the roads in the Township. The Commonwealth of Pennsylvania has jurisdiction over most of the highways and major roads in the Township, including all expressways and primary arterials. This information can help to guide any recommendations made in order to understand the feasibility of implementation.

Figure 23: Roadway Classification and Ownership

	Roadway	Roadway Classification	Roadway Ownership	Posted Speed Limit (MPH)
1	Valley Forge Road (SR 0023)	Minor Arterial	PennDOT	35 MPH
2	S. Gulph Road (SR 3039)	Principal Arterial	PennDOT	35-40 MPH
3	Matsonford Road (SR 3016)	Minor Arterial	PennDOT	35 MPH
4	Dekalb Pike (SR 0202)	Principal Arterial	PennDOT	40 MPH
5	Allendale Road	Minor Arterial	Upper Merion Township	35 MPH
6	Swedesford Road (SR 3036)	Principal Arterial	PennDOT	40 MPH
7	Croton Road (SR 3024)	Urban Collector	PennDOT	35 MPH
8	Henderson Road (SR 3029)	Principal Arterial	PennDOT	35-40 MPH
9	Swedeland Road (SR 0320 & SR 3041)	Minor Arterial	PennDOT	35 MPH
10	Church Road (SR 3038/T-801)	Urban Collector	PennDOT (S. Gulph-S. Henderson) UMT (S. Henderson-Flint Hill)	35 MPH
11	Crooked Lane (SR 3027)	Urban Collector	PennDOT	35 MPH
12	Beidler Road (SR 3029)	Urban Collector	PennDOT UMT (Abrams-Brownlee)	35 MPH
13	Brooks Road (SR 3038)	Urban Collector	PennDOT	Not Posted
14	Gypsy Lane	Local Road	Upper Merion Township	25 MPH
15	Upper Gulph Road (SR 3030)	Urban Collector	PennDOT	35 MPH
16	Mall Boulevard	Urban Collector	Upper Merion Township	35 MPH
17	Willis Boulevard	Local Road	Upper Merion Township	35 MPH
18	Court Boulevard	Local Road	Upper Merion Township	Not Posted
19	S. Warner Road	Urban Collector	Upper Merion Township	30 MPH
20	Shoemaker Road	Local Road	Upper Merion Township	25 MPH
21	Holstein Road (SR 0320)	Minor Arterial	PennDOT	35 MPH
22	Jones Road	Local Road	Upper Merion Township	35 MPH
23	I-76 EB On-Off Ramp	Interstate Highway	PennDOT	35 MPH
24	Trinity Road (SR 0320)	Minor Arterial	PennDOT	35 MPH
25	Weadley Road	Local Road	Upper Merion Township	25 MPH
26	Horizon Drive	Local Road	Upper Merion Township	35 MPH
27	Yerkes Road	Local Road	Upper Merion Township	25 MPH
28	Saulin Boulevard	Local Road	Upper Merion Township	35 MPH
29	Prince Frederick Street	Local Road	Upper Merion Township	25 MPH
30	Caley Road	Local Road	PennDOT	25 MPH
31	SR 0422 EB Off Ramps	Other Freeways and Expressways	PennDOT	35 MPH
32	N. Gulph Road (SR 3033)	Minor Arterial	PennDOT	35 MPH

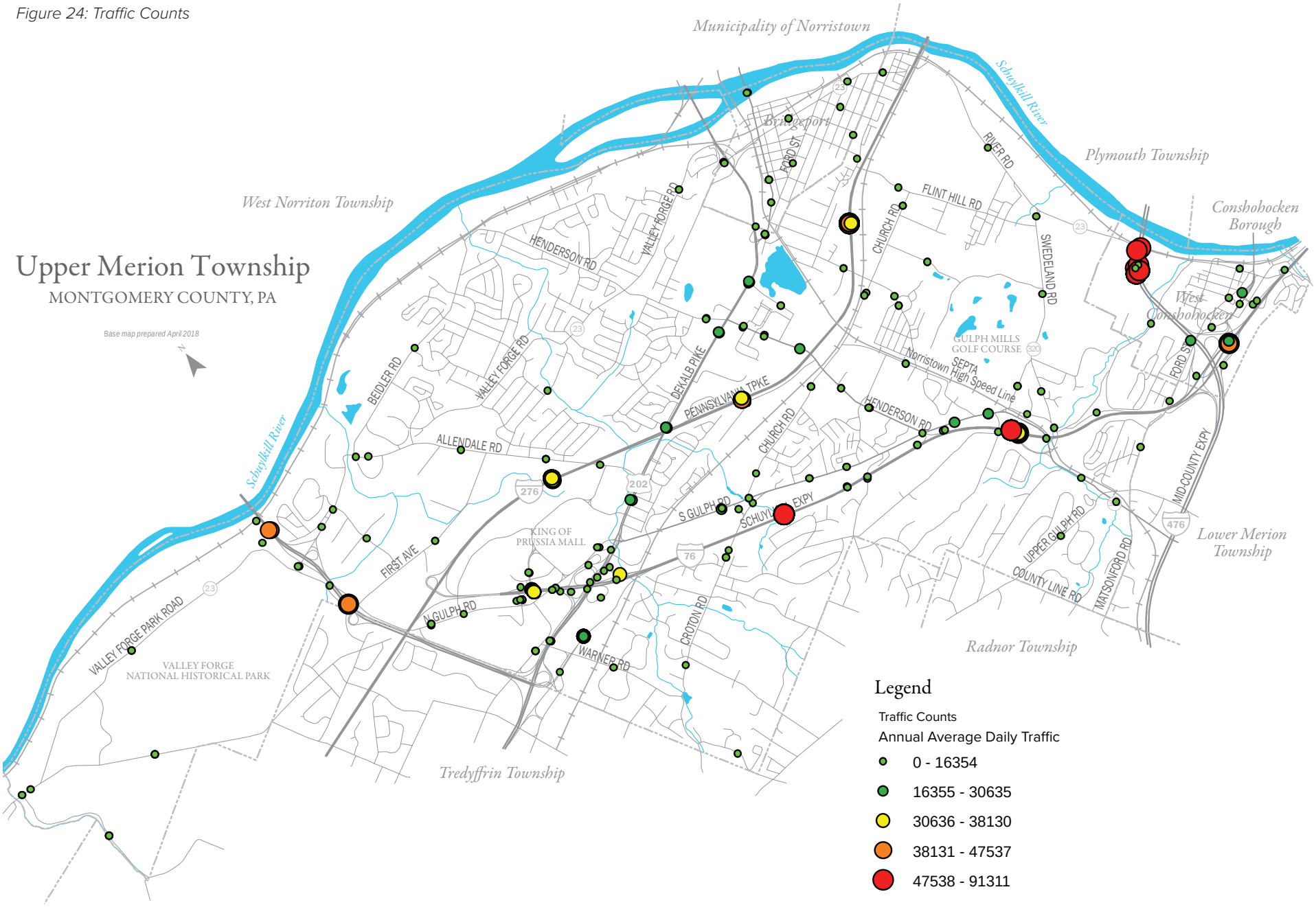
Traffic Volumes

Unsurprisingly, traffic count data shows that the majority of traffic is traveling through the major highways in the Township, I-76, I-276, US 202, and US 422. Traffic counts are measured using Average Annual Daily Traffic (AADT), which is calculated by combining all of the traffic counted in a year and dividing it by the 365 days of the year. Figure 24 shows 5 ranges of AADT numbers for the Township with the highest group being approximately 50,000 to 91,000 cars per day. These are shown in red on the map.

Traffic at Intersection of South Gulph Road and DeKalb Pike

Evening Traffic on Turnpike

Figure 24: Traffic Counts



MASS TRANSIT AND SERVICE FREQUENCY

Bus service

Upper Merion Township is served by seven SEPTA bus routes. These bus routes are listed below:

- 92: Exton to King of Prussia
- 95: Gulph Mills to Willow Grove Park Mall
- 99: Phoenixville to Norristown Transportation Center
- 123: King of Prussia to 69th Street Transportation Center
- 124: Chesterbrook and King of Prussia to 13th-Market
- 125: Valley Forge and King of Prussia to 13th-Market
- 139: Limerick to King of Prussia

The above listed bus routes are shown geographically in Figure 26. The locations of bus stops in the Township are also shown on the map. The 125, 99, and 124 buses have the highest daily ridership rates of 1,881, 1,502, and 1,486 respectively. Of the buses that service the Township, 95 and 139 run at the highest on time percentage (83% and 82%, respectively). Buses 124 and 125 run at 66% and 67% on time and are the lowest of the Township's bus lines. These buses both are routed to 13th and Market in Center City and therefore have to traverse higher traffic areas than some of the other bus routes.

Operating ratio refers to result of passenger revenue divided by fully allocated cost. SEPTA considers the minimum acceptable ratio to be 60% of the average operating ratio of the division (city transit, suburban, or regional rail). Routes that fall below the acceptable limit are evaluated in depth in the Annual Service Plan and are subject to service adjustments, route restructuring, consolidations, special subsidies, targeted marketing, or possible discontinuance. Other operating statistics, including weekly ridership, can be found in Figure 25.

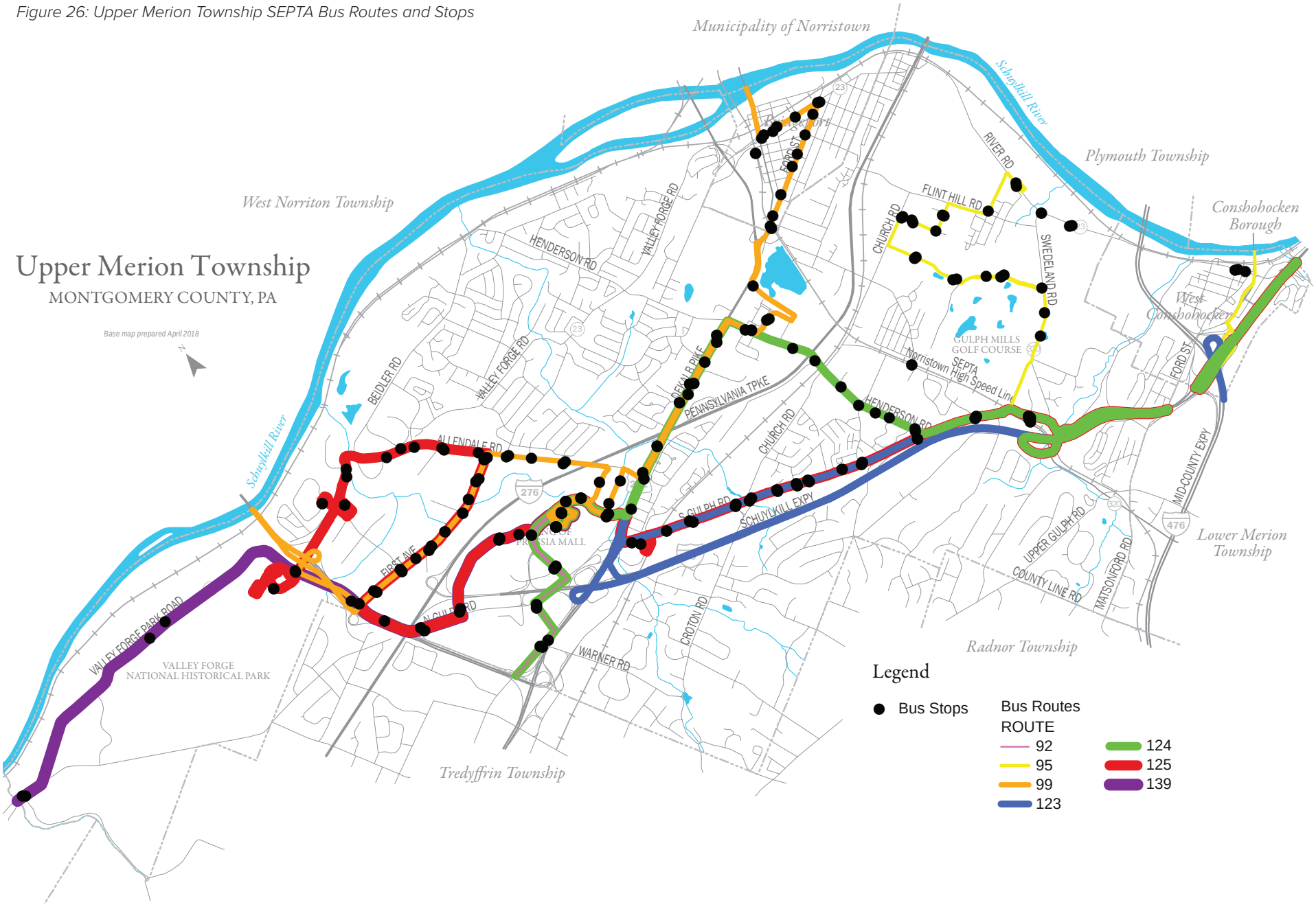
Bike Rack on SEPTA Bus


Gulph Mills NHSL Station and Bus Depot

Figure 25: Upper Merion Township SEPTA Bus Routes Operating Statistics

Bus Route	Daily Average Weekly Ridership (SEPTA ranking)	One Way Route Miles (Average)	Peak Vehicles	Passenger Revenue	Operating Ratio (SEPTA ranking)	On Time % (Season)
92	383 (39th)	31.3	3	$164,869	11% (43rd)	78%
95	577 (34th)	26	5	$248,376	13% (41st)	83%
99	1,502 (14th)	23.9	7	$670,488	24% (15th)	80%
123	919 (23rd)	17.6	4	$503,477	24% (16th)	71%
124	1,486 (15th)	25.7	9	$756,661	19% (28th)	66%
125	1,881 (11th)	26.1	9	$991,262	21% (22nd)	67%
139	472 (36th)	19.6	3	$203,185	17% (32nd)	82%

Figure 26: Upper Merion Township SEPTA Bus Routes and Stops



Regional Rail and NHSL Service

The Norristown High Speed Line (NHSL) runs along the eastern portion of the Township, north to south. This rail line runs from the Norristown Transportation Center in Norristown to 69th Street Station in Upper Darby. The stops in the Township from north to south are Dekalb Street, Hughes Park, and Gulph Mills Stations. Just over the border from Upper Merion are three other stations, Bridgeport and Norristown Transportation Center to the north and Matsonford to the south.

No SEPTA regional rail stops are present in the Township, but there are stations located just outside of its boundaries. These lines include the Manayunk/Norristown line which runs between Philadelphia, East Falls, Manayunk and Norristown and runs north of the Township and the Paoli/Thorndale line, which runs between Center City, Bryn Mawr, Malvern, Paoli, and Thorndale and runs east to west, south of Upper Merion.

Gulph Mills NHSL Station at Night

Hughes Park NHSL Station

Gulph Mills NHSL Station

Figure 27: NHSL Ridership and Parking

NHSL Stations	Total Daily Weekday Ridership	Number of Spaces	Percent Utilized
King Manor Station (Dekalb Street)	*109*	*89*	*100%*
Dekalb Street (Regional Rail)		*136 (daily fee) and 44 (permit)*	*100%*
Hughes Park Station	*145*	*0*	*N/A*
Gulph Mills Station	*315*	*78*	*100%*
Matsonford Station	*17*	*13*	*Closed for construction*

Source: SEPTA 2014

Ridership

Four NHSL stations are located within the Township: Dekalb Street, Hughes Park, Gulph Mills, and Matsonford. The highest weekday ridership is at Gulph Mills station with 315, followed by Hughes Park with 145, Dekalb Street with 109, and Matsonford has the lowest ridership with 17. Parking spaces available at each station along with the percent of the parking that is utilized on average is shown in Figure 27.

While no regional rail stations are located within the Township, it is likely that Upper Merion residents utilize the Conshohocken and Norristown stations located nearby. Ridership numbers from 2015 are 708 for Conshohocken and 890 for the Norristown Transportation Center. These numbers can be seen in Figures 28 and 29 on following page. The total weekday daily ridership for Norristown Transportation Center, including Regional Rail, NHSL, and buses is 3,617. A 2011 license plate survey done at the station found that many commuters originate in Upper Merion Township.

Norristown Transportation Center

Figure 28: Conshohocken Regional Rail Station Ridership (Regional Rail)

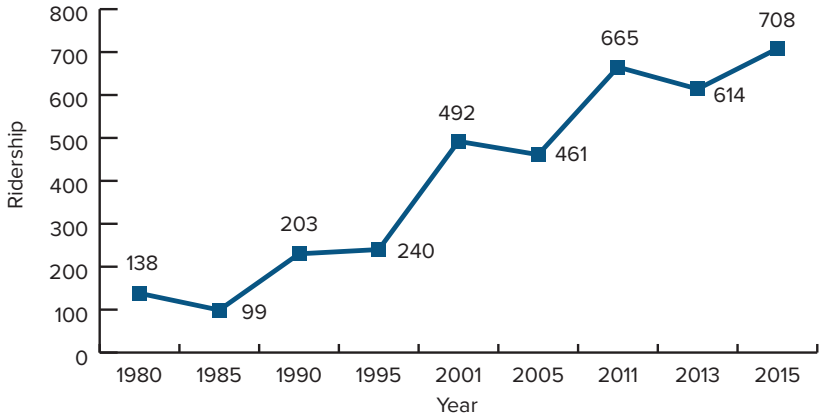


Figure 29: Norristown Transportation Center Ridership (Regional Rail)

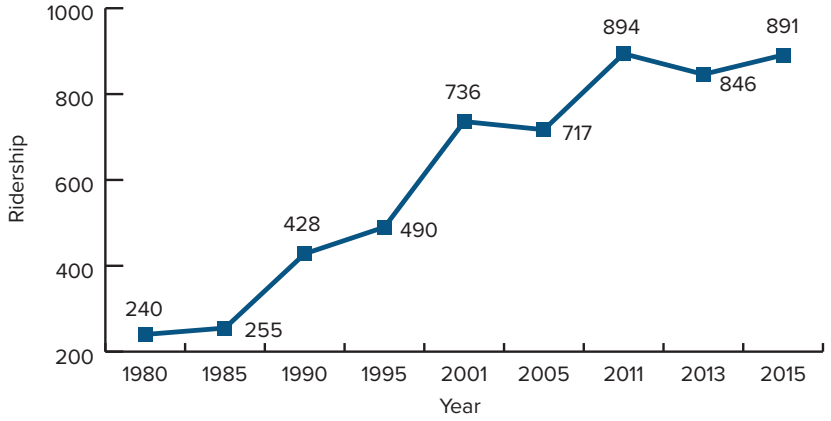
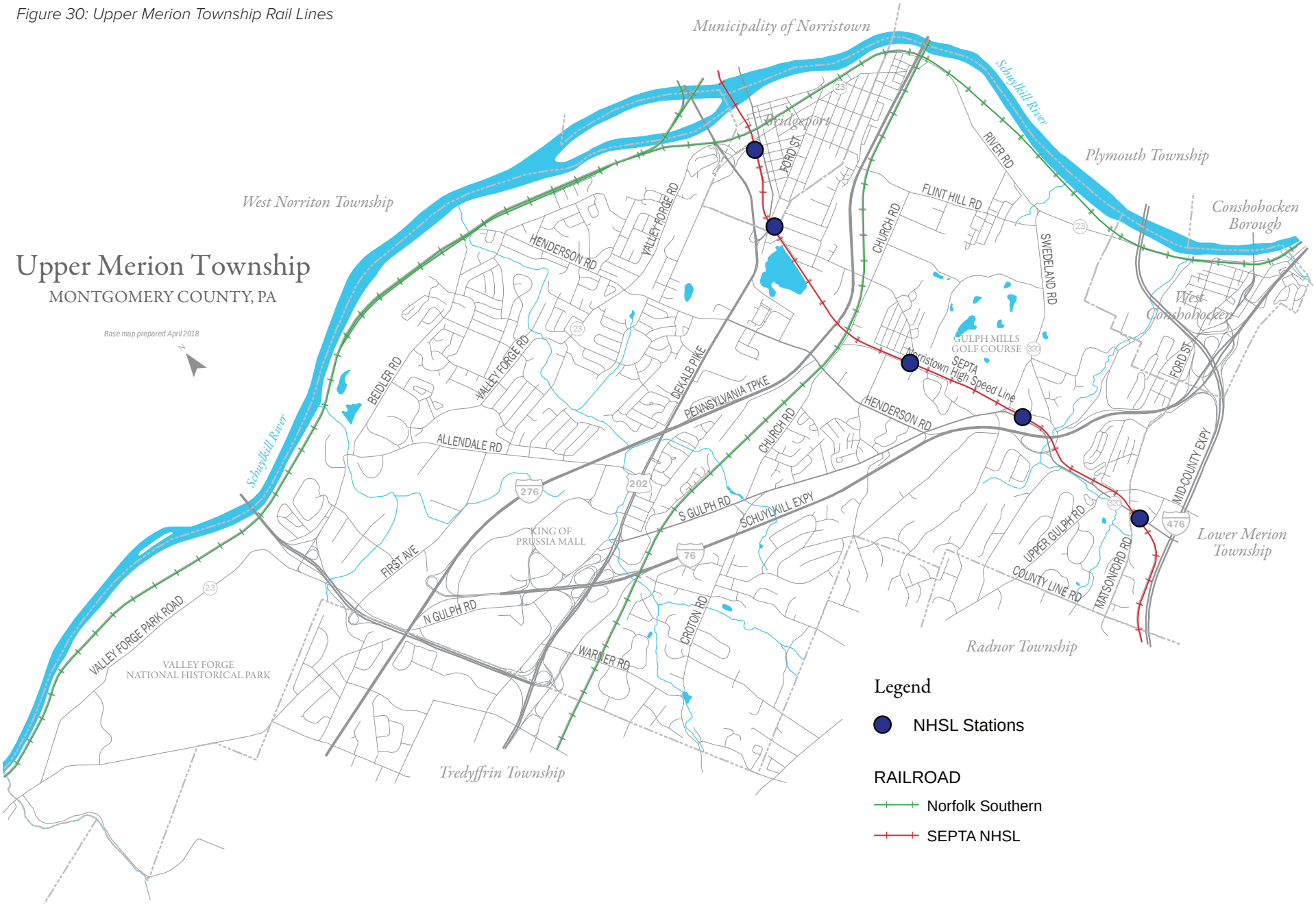


Figure 30: Upper Merion Township Rail Lines



Proposed NHSL Extension

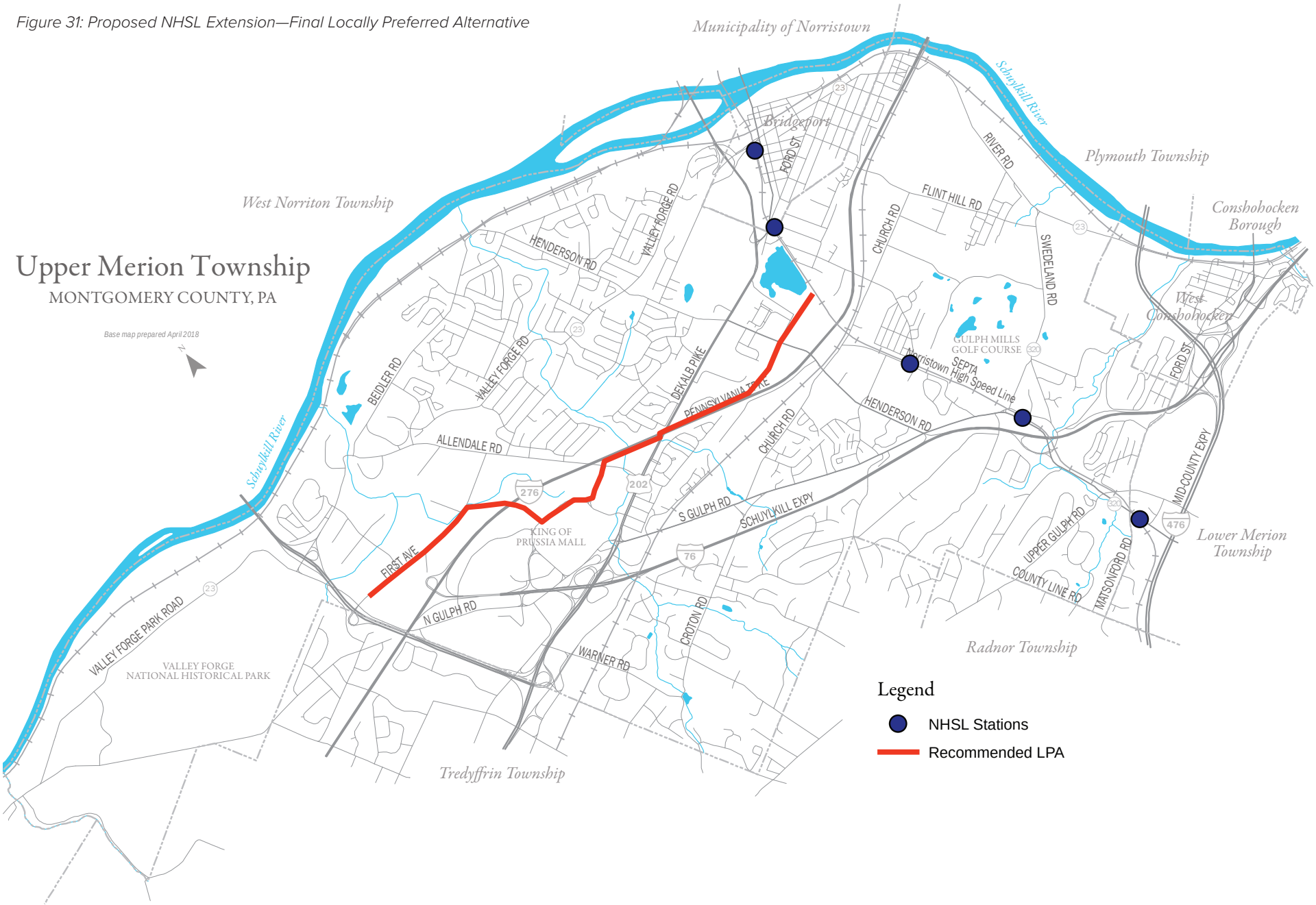
SEPTA has been in the process of pursuing an extension to the existing NHSL westward through the Township. It would be a five mile extension that would connect to the KOP Mall and the Valley Forge Casino Resort. Three major phases of the process are necessary before approval of the project and construction can begin. These phases are: the completion of a Draft Environmental Impact Statement (DEIS), a Final EIS, and an Engineering Design and Program Management Plan.

The DEIS has been completed and the FEIS began in March of 2018. The FEIS and combined Record of Decision (ROD) will provide additional analysis of the effects of the Locally Preferred Alternative (LPA). The FEIS/ROD will respond to DEIS comments; identify the effects of the LPA compared to the No Action Alternative and commit to specific mitigation and minimization actions to eliminate or reduce negative effects. The ROD is a concise public record of the FTA's decision on the project.

The final LPA can be seen in Figure 31 and shows the trajectory of the potential rail line. The extension would originate at the existing NHSL track south of Dekalb Pike near Saulin Blvd. and would run along the northern side of I-276 (PA Turnpike), cross over 202 to the south side of I-276, continuing past the mall, crossing I-276 and then finalizing its course along 1st Avenue in the KOP Business Park. Proposed stops (which may be subject to alteration) include one at Henderson Road and Saulin Blvd, two stops along the northern edge on the mall, one stop at Clark Avenue and First Avenue, and one at the Valley Forge Convention Center and Casino.

KOP Rail Extension Rendering Near Mall (Source-SEPTA)

Figure 31: Proposed NHSL Extension—Final Locally Preferred Alternative



Shuttle Service

Two shuttle services are active in the Township at this time. One is the Rambler, managed by the Greater Valley Forge Transportation Management Association (GVFTMA), which runs between residential neighborhoods and commercial areas. The shuttle also stops at medical and community centers. The Rambler consists of two shuttle buses that complete two circular loops. It is funded by multiple sources, but funding currently comes mainly by the Township. It runs from 9:00 AM to 4:00 PM Monday through Saturday. Much of the shuttle service is used by senior citizens and they receive a discount for use of the service. Figure 32 shows the stops for the Rambler shuttle service.

The King of Prussia Business Improvement District (KOP BID) runs a shuttle service, the Connector, which transports employees from SEPTA's Norristown Transportation Center and Wayne Regional Rail Station (on the Paoli/Thorndale line) to the businesses in and around the King of Prussia business park. Two shuttles run during the AM and PM peak hours and make several stops within the park. The buses are ADA compliant, have Wi-Fi and bike racks. See Figure 33 for the locations of the Connector stops. The map includes those stops for the shuttle that originate at Norristown Transportation Center and the Wayne regional rail stop. These stops are subject to change.

Rambler Shuttle

The Connector

Figure 32: Rambler Shuttle Stops

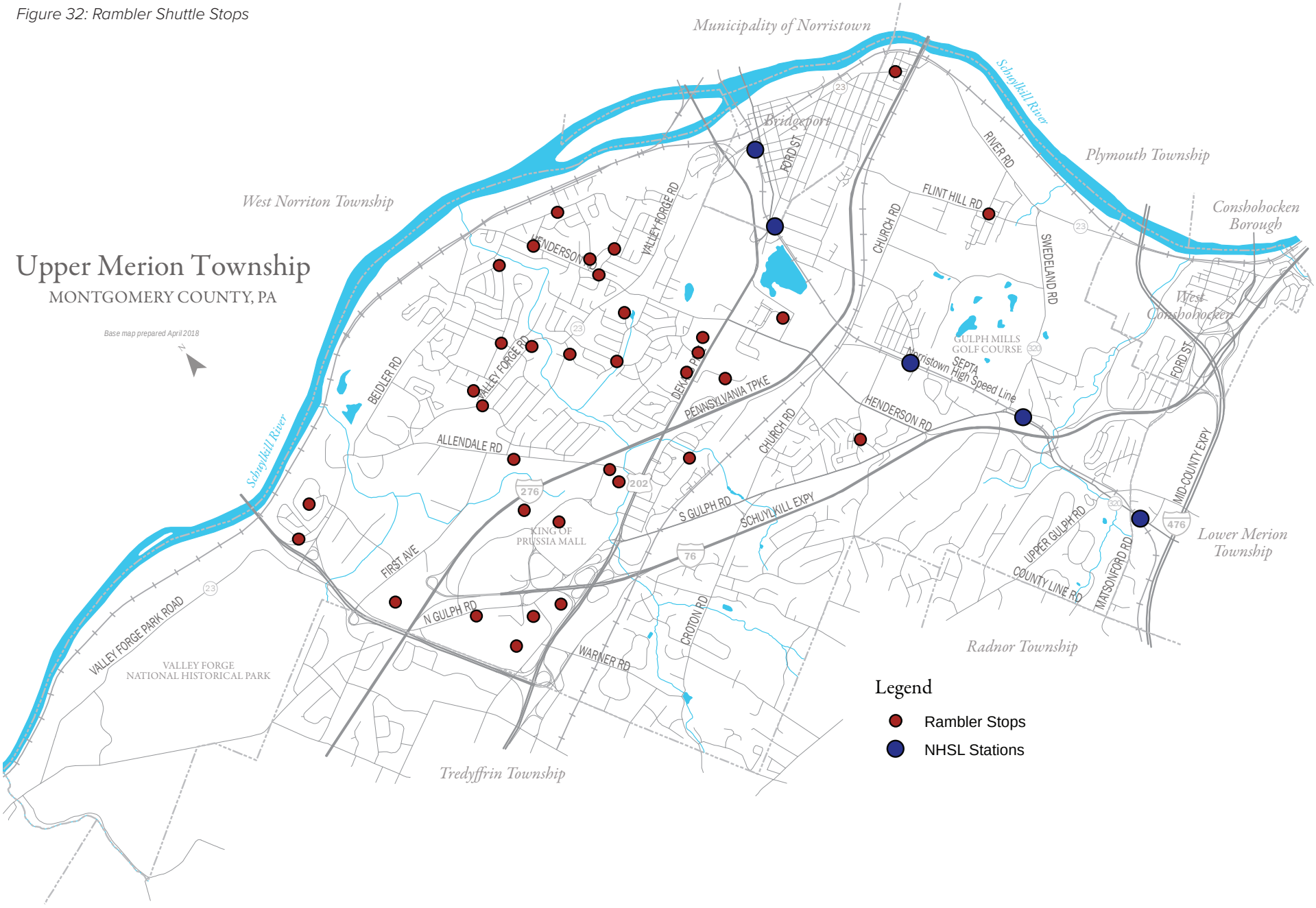
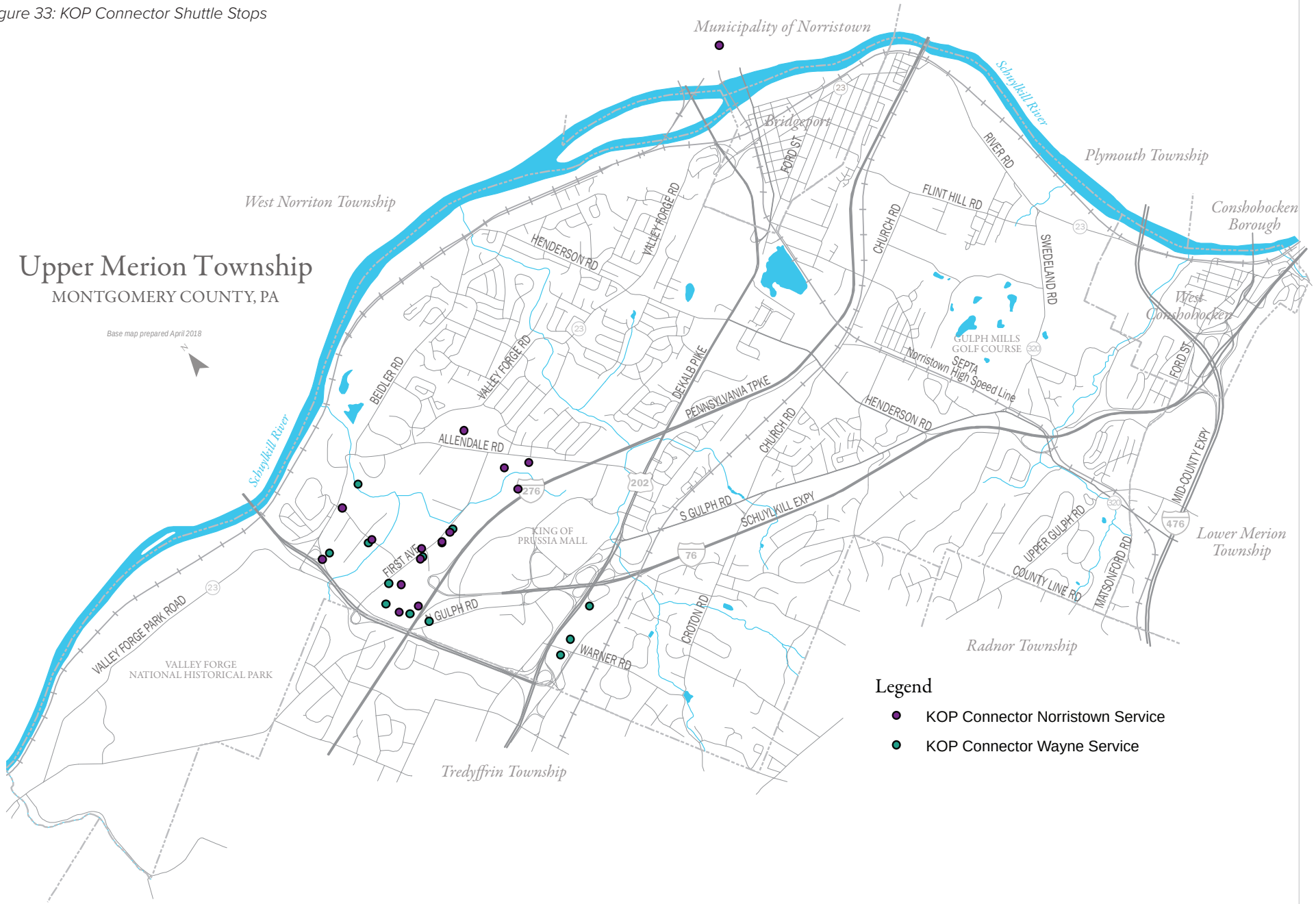


Figure 33: KOP Connector Shuttle Stops



PEDESTRIAN AND BICYCLE MOBILITY AND CONNECTIVITY

Pedestrian and bicycle circulation is an important component of a transportation network. Components of this network include sidewalks, trails, paths, and crosswalks. Pedestrian and bicycle travel can be seen as an effective alternative to driving for short distance trips. Pedestrian access should be created where it is lacking in order to facilitate access between commercial, residential, institutional, and recreational areas in the township for residents and visitors.

Sidewalks

Sidewalks have the potential to promote walkability and reduce motorized vehicle use. They increase the level of safety for pedestrians. Connections to crosswalks are also vital in some areas to ensure safe travel across the sidewalk network. Existing sidewalk networks may have gaps or have other issues, such as being in need of maintenance or ADA accessibility. Prioritizing where new sidewalks should be placed or where existing sidewalks should be improved is important in ensuring that those sidewalks would be utilized by pedestrians and that resources are being allocated efficiently. This involves evaluating where people might be expected to walk, such as main street areas, shopping centers and malls, office parks, industrial complexes, and higher density residential areas. Sidewalks should also connect to destinations such as transportation stops, schools, parks, and libraries.

The Township has a moderate level of sidewalks presently. Some areas are lacking in sidewalks and other pedestrian connections. Figure 34 on page 58 shows where sidewalks are currently located in the Township. Sidewalks appear to be lacking in neighborhoods south of I-76 and are spotty along the eastern and western edges of the Township (excluding Valley Forge National Historic Park which has a comprehensive trail system). The highest concentration of sidewalks is located in the northern

Neighborhood Road with Sidewalks

Missing Sidewalks along S. Gulph Road

central portion of the Township where there is also the highest concentration of residential homes.

The Township's 2005 Land Use Plan recommended that all of the areas north of Route 76 should be served by sidewalks, with direct sidewalk connections to bus stops, train stations, schools, parks, shopping centers, and employment centers. As redevelopment occurs in these areas, infill development will require sidewalks to be constructed where they are currently lacking.

Bicycle Facilities

Bicycling can be used to run errands, commute to work, or for recreational purposes. Each time a bicycle is used in place of a vehicle, it can reduce traffic congestion, pollution, and energy consumption. While bicycle connections may not be feasible in many parts of the Township, it is valuable to identify what areas present the opportunity for bicycle infrastructure.

The Township does not have many bike lanes at this time. The linear park and road diet on First Avenue in the KOP Business Park has plans currently underway to build bike lanes from North Gulph Road to Allendale Road. Bike lanes are also present in the Village at Valley Forge Development. Due to the high traffic and lack of shoulder on some of the Township's main roads, installation of bike lanes across the Township may have major challenges. There may be some opportunities for bicycle infrastructure in some newer, more walkable developments such as the Village at Valley Forge and future opportunities for connections within the KOP Business Park. The recently adopted Bike Montco plan contains recommendations for bicycle connections along Warner Road between the Chester Valley Trail and the Village at Valley Forge.

Trails

Trails can be used for recreation but can also be used as an alternative transportation method when feasible. They also serve to connect destinations inside and outside of a community.

Trails have been shown to enhance the quality of life in communities by providing recreational opportunities and exposure to natural areas that may be otherwise inaccessible.

Upper Merion has several trails that run through the Township. The Schuylkill West Trail runs along the northern edge of the Township and continues west through Valley Forge National Historical Park. The Chester Valley Trail runs north and

Schuylkill River West Trail

south centrally in the Township. Work is currently being done to finalize several portions of the trail as it continues into Delaware and Chester Counties. Trails can serve to make pedestrian connections where sidewalk construction may not be considered a viable option.

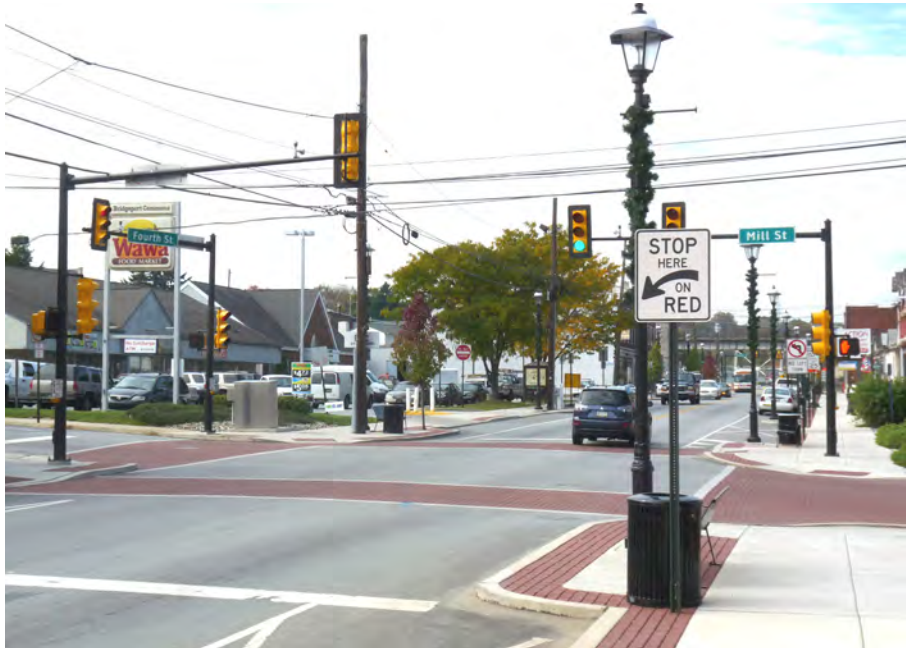
The Township received a $1.25 million multimodal fund grant in 2016 to finance improvements to the Crow Creek Trail. These improvements include new ADA-compliant walking and biking trails between residential areas and the middle and high school and community center. The funds will also go to the construction of a pedestrian bridge and walking path between Sweetbriar Park and West Beidler Road. This trail will eventually connect to the Circuit Trails via the Schuylkill River West Trail. The Circuit Trails are hundreds of miles of interconnected trails that will connect the Philadelphia region with the East Coast Greenway. The East Coast Greenway has connections north through New York City up to Maine, and south through Washington D.C. down to the Florida Keys.

Traffic Calming

Traffic calming is defined by the Institute of Transportation Engineers as the "combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users". Traffic calming goals include: increasing quality of life, creating safe and attractive streets, promoting pedestrian, bicycle and transit use, and helping to reduce the negative effects of motor vehicles on the environment (i.e. pollution and sprawl).

Traffic calming seeks to achieve lower speeds for motor vehicles, increasing safety and the perception of safety for non-motorized users of the street, enhancing the street environment, reducing cut through motor vehicle traffic, and increasing access for all modes of transportation. Overall, these measures may encourage motorists to drive at a speed which residents of the area consider consistent with land uses, increase pedestrian and bicyclist safety, and serve as a means of enhancing community character. Figure 35, from the Smart Transportation Guidebook (produced by the DVRPC), contains specific traffic calming measures that are applicable to each road classification type.

Traffic Calming Curb Bumpout in Bridgeport Borough



Traffic Calming along West Avenue in Jenkintown Borough

Figure 34: Upper Merion Township Sidewalks and Trails

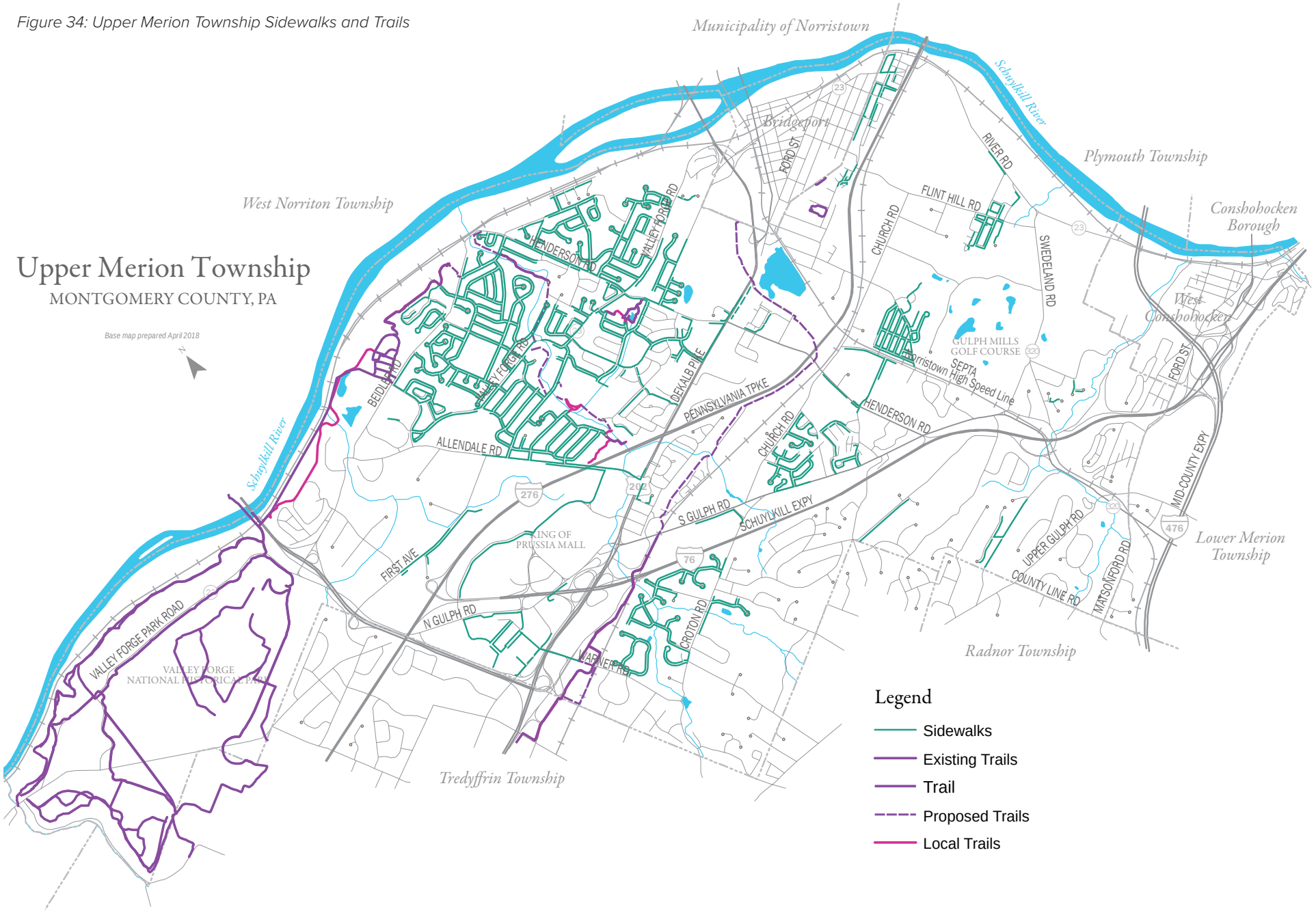


Figure 35: Traffic Calming Measures Appropriate to Roadway Classifications

Classification			Regional Arterial	Community Arterial	Community Collector	Neighborhood Collector	Local Street
Design speed range (mph)			30 to 45	25 to 45	25 to 30	25 to 30	20 to 25
Traffic calmed category			Framework Street		Non-Framework Street		
Transition zone to traffic calmed segment							
Gateway (landscaping, archway, signs, etc.)							
Cross Section Measures	Reduction in number of lanes						
Reduction in width of lanes							
	Long median						
	Short median/refuge						
	Bulbouts[1]						
	Curb and gutter						
	Pedestrian-scale lighting						
	Street trees						
	Buildings at back of sidewalk						
	Lateral shifts						
	Bike lanes						
	On-street parking	Parallel					
		Back-in-angle					
		Front-in-angle					
		90°					
Periodic Measures	Horizontal Measures	Roundabouts					
		Mini-traffic circles					
		Chicanes					
		Short medians					
	Narrowings	Pinch points					
	Vertical Measures	Raised intersections					
		Raised crosswalks					
		Flat-top speed humps					
		Speed cushions					
		Speed humps					

Key:	Appropriate	Not Appropriate	Appropriate in Special Circumstances

1 Bulbouts should be used on regional arterials only in urban or suburban center contexts, with speeds of 35 mph or below. On arterials they should be no greater than 6 ft. in width.

Source: DVRPC Smart Transportation Guidebook, 2008

Crash Data

Crash data contains information regarding the total number of units involved in traffic accidents in the Township. Figure 36 shows crashes involving a total of 4-11 units, with the majority of those including 4 and 5 units. Units refers to the types of vehicles, pedestrians, bicyclists, motorcyclists, etc. involved in the accident. High concentrations of crashes occur on US 202 and I-76 in the Township. Figure 37 contains crash data regarding the number of pedestrians involved in traffic accidents. Dekalb Pike also has a high rate of crashes involving pedestrians.

Figure 36: Crashes with 4-11 Units Involved

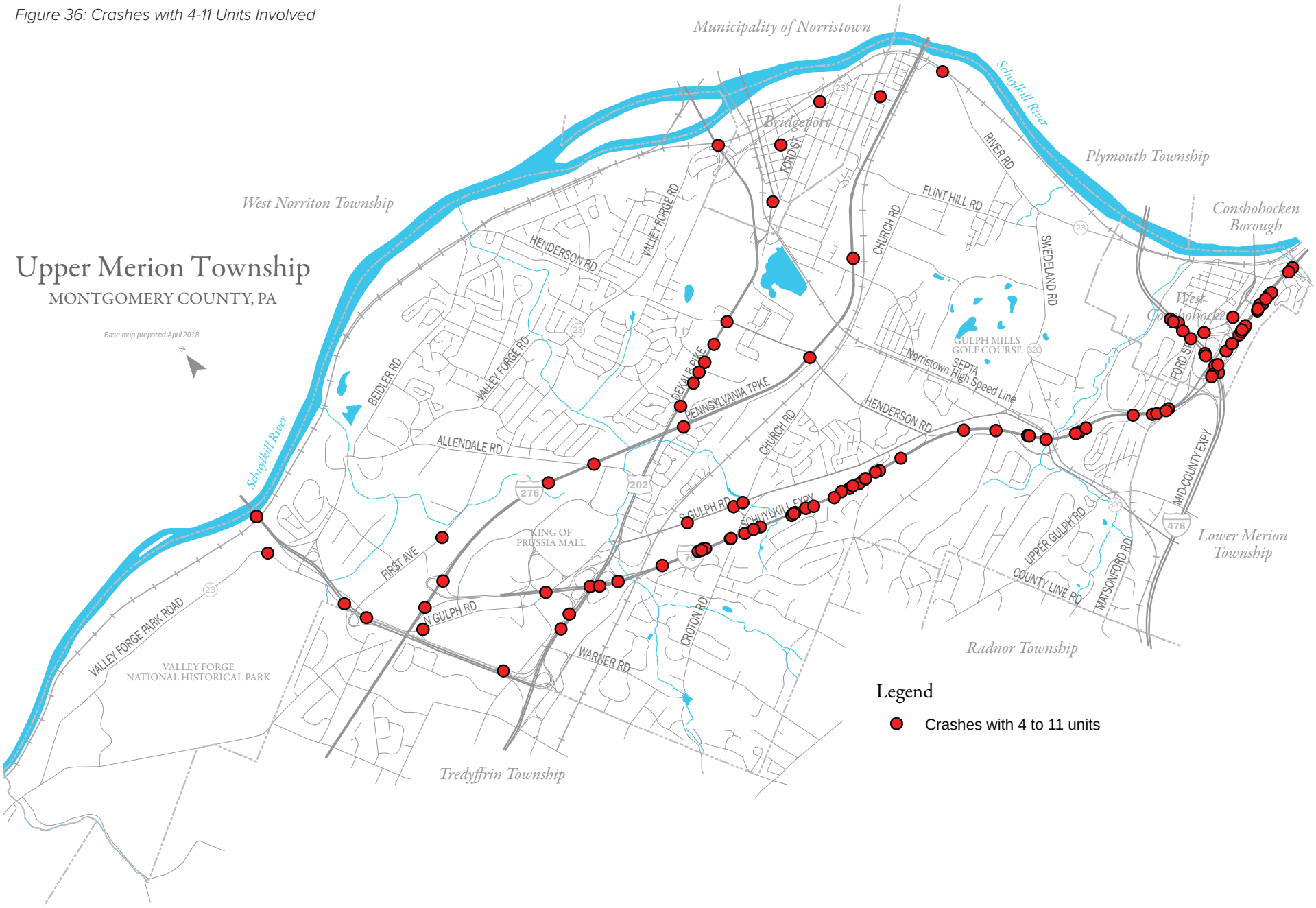
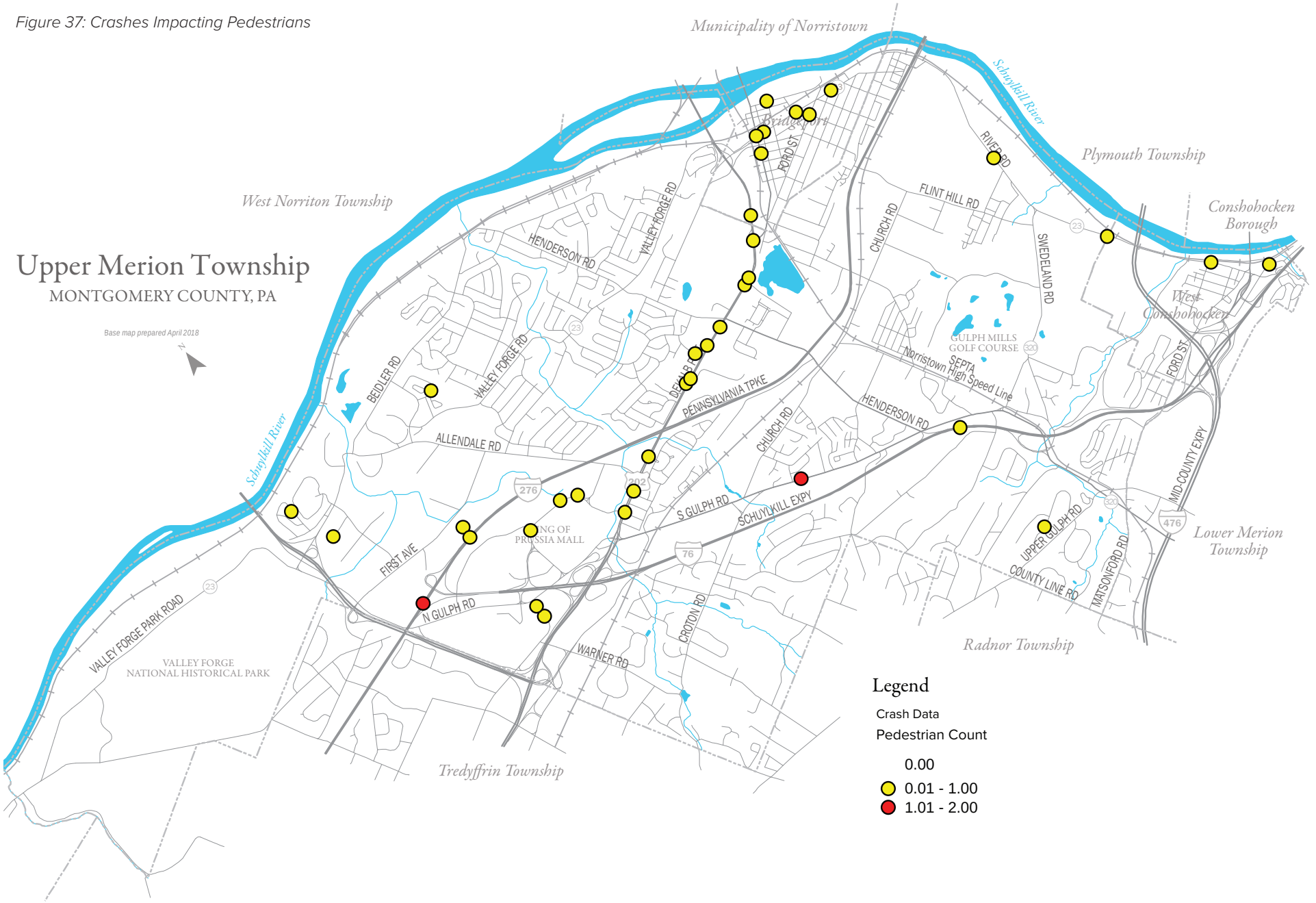


Figure 37: Crashes Impacting Pedestrians



MAJOR TRANSPORTATION PROJECTS

Act 209 Capital Improvement Projects

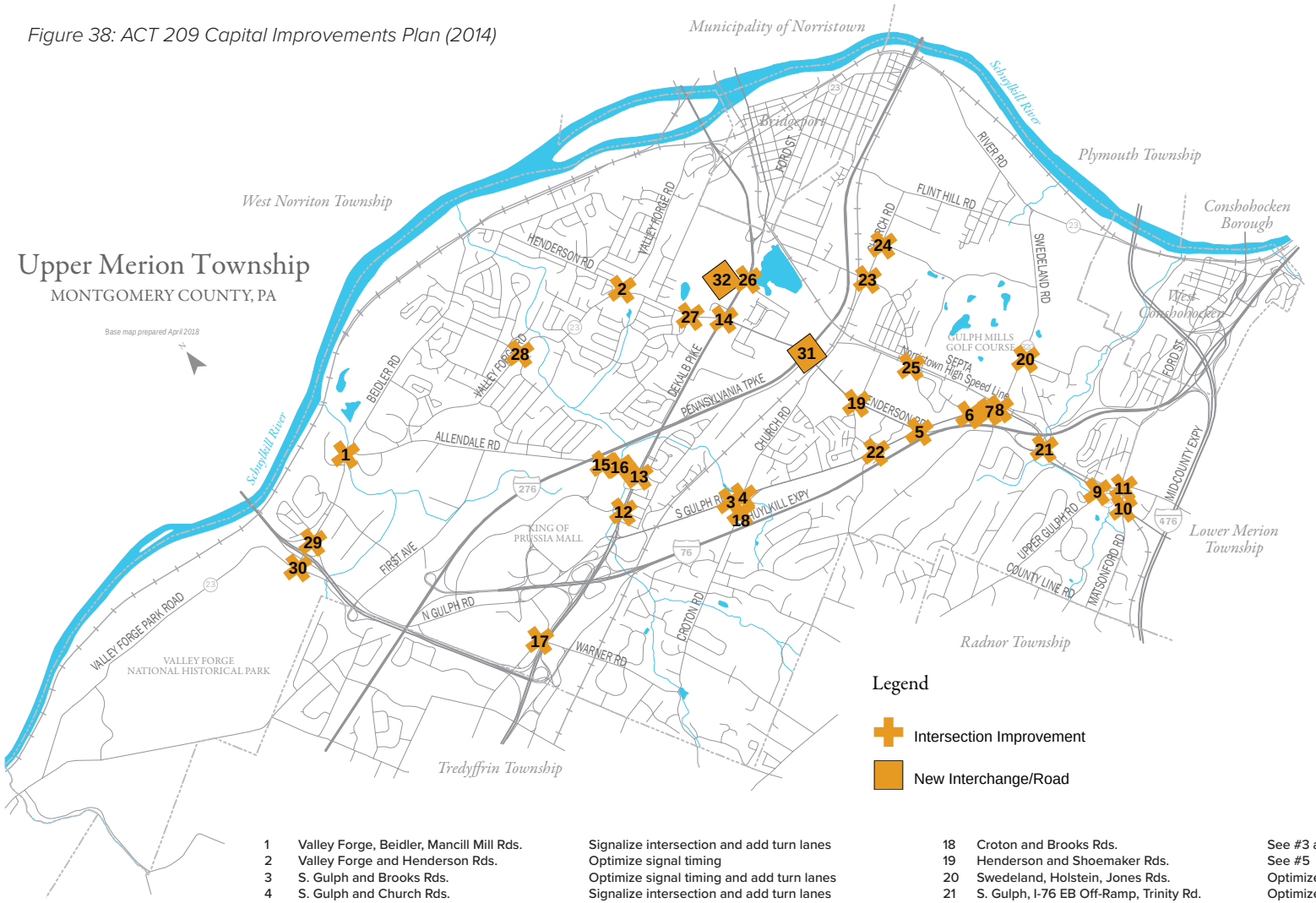
The Municipalities Planning Code (MPC) authorizes municipalities within the state of Pennsylvania to enact, amend, and repeal impact fee ordinances and to charge impact fees to cover the cost of off-site road improvements required by new land development. This legislation authorizes municipalities to ensure that the cost of needed capital improvements is applied to new development in a manner that will allocate equitably among property owners. It serves to assist municipalities in funding new capital infrastructure as a response to the increasing difficulty they are experiencing in developing revenue sources for these purposes.

A study was done in 2014 for the Upper Merion Township Transportation Authority (UMTTA) in support of the preparation of a Transportation Impact Fee Ordinance for the Upper Merion Transportation Service Area (TSA) in the Township. The report summarizes the traffic conditions within the Township, including existing conditions, and projected future conditions for two scenarios with a study horizon of 2022. The first scenario is called “Pass-Through Conditions” and accounts for incremental increase in development outside the TSA (Township) in the ten year study period (2012-2022). The second scenario, “With Development Conditions”, accounts for projected growth and development within the TSA over that period. Recommendations were established for both scenarios within the study. Further details on those specific recommendations can be found in the study.

Figure 38 on page 64 contains all of the capital improvement projects included in the study. The table also includes information regarding both scenarios that were evaluated in the study: existing conditions plus 2022 pass-through conditions and 2022 with development conditions. The majority of the recommended improvements include signalizing intersections, optimizing traffic signal timing, and the addition of through lanes, left turn, and right turn lanes.

One important project of note is TA2 in Figure 40: Prince Frederick Road and Saulin Boulevard Extension. This would involve the construction of a loop road from the intersection of Saulin Boulevard and Dekalb Pike to the intersection of Henderson and Prince Frederick Roads. This project could potentially alleviate congestion at several intersections and improve their Level of Service (LOS) rating. This refers to the amount of time each vehicle spends at an intersection. See Figure 40 for more information regarding this project. Another important project of note is the PA Turnpike and Henderson Road interchange (see TA1 in Figure 40). This project would be the construction of a new interchange on Henderson Road near Saulin Boulevard and would also alleviate congestion and improve the LOS at several intersections.

Figure 38: ACT 209 Capital Improvements Plan (2014)



1	Valley Forge, Beidler, Mancill Mill Rds.	Signalize intersection and add turn lanes
2	Valley Forge and Henderson Rds.	Optimize signal timing
3	S. Gulph and Brooks Rds.	Optimize signal timing and add turn lanes
4	S. Gulph and Church Rds.	Signalize intersection and add turn lanes
5	S. Gulph and S. Henderson Rds.	Optimize signal timing and add turn lanes
6, 7	S. Gulph, and Crooked and Gypsy Lns.	Optimize signal timings and add turn lanes
8	S. Gulph and Swedeland Rd.	Signalize intersection
9	S. Gulph and U. Gulph Rds.	Optimize signal timing and add turn lanes
10	S. Gulph and Matsonford Rds.	Optimize signal timing and add turn lanes
11	Matsonford and U. Gulph Rds.	Optimize signal timing and add turn lanes
12	DeKalb Pike and Mall Blvd.	Optimize signal timing and add turn lanes
13	DeKalb Pike and Allendale Rd.	Optimize signal timing and add turn lanes
14	DeKalb Pike and Henderson Rd.	Optimize signal timing and add turn lanes
15	Allendale Rd. and Wills Blvd.	Optimize signal
16	Allendale Road and Court Blvd.	Optimize signal timing
17	Swedesford and Warner Rds.	Optimize signal timing and add turn lanes
18	Croton and Brooks Rds.	See #3 and #4
19	Henderson and Shoemaker Rds.	See #5
20	Swedeland, Holstein, Jones Rds.	Optimize signal timing
21	S. Gulph, I-76 EB Off-Ramp, Trinity Rd.	Optimize signal timing and add turn lanes
22	S. Gulph, Shoemaker, Weadley Rds.	Optimize signal timing and add turn lanes
23	Church Road and Crooked Lane	Optimize signal timing and add turn lanes
24	Church Road and Horizon Drive	Optimize signal timing and add turn lanes
25	Crooked Lane and Yerkes Road	
26	Dekalb Pike and Saulin Blvd	Optimize signal timing and add turn lanes
27	Henerson Rd. and Prince Frederick St.	
28	Valley Forge and Caley Rds.	Install traffic signal and add turn lane
29	Valley Forge Rd. and Rt. 422 EB Off-ramps	Optimize signal timing and add turn lanes
30	Valley Forge and N. Gulph Rds.	Optimize signal timing and add turn lanes
31	PA Turnpike and Henderson Road Interchange	
32	Prince Frederick Rd. and Saulin Blvd. Extension	

Pennsylvania Transportation Improvement Program (TIP)

Pennsylvania's Transportation Improvement Program (TIP) is the regionally agreed-upon list of priority transportation projects required by federal law. The TIP document lists all projects that intend to use federal funds, along with all non-federally funded projects that are regionally significant as well as state funded capital projects. The projects included are multimodal as well as more traditional highway and public transit projects. Figure __ contains all of the 2017-2020 TIP projects that are in Upper Merion Township.

Figure 39: Upper Merion Projects Included in the 2017-2020 Transportation Improvement Program (TIP)

	Project Name	Project Number (MPMS)	Project Description
1	Church Road Bridge Over NHSL (CB) SR:7220	16396	Replacement of the Church Road Bridge and approaches over the SEPTA Route 100 rail line. Project includes the widening of the bridge to meet current design standards for a two lane roadway with a pedestrian sidewalk on one side.
2	PA 320 at Hanging Rock SR: 0320	16599	Road restoration, including stabilization along the creek. The width of the restored road will be evened out to 28' with curbing and guiderail. Existing wall along creek to be replaced.
3	Chester Valley Trail Extension (C036)	16705	Development of a 3.5 mile extension of the trail including portions in Norristown and Bridgeport.
4	PA 23 Moore to Allendale and Trout Crk Bridge SR: 0023	48172	Replace structurally deficient, functionally obsolete, weight restricted bridge on a new alignment to eliminate a 90 degree turn on the western end of the bridge and adjacent stop controlled intersection due to a sight distance of Mancill Mill Road intersection. New bridge and roadway between Moore Road and Vandenberg Road will be 2 lanes westbound and one land eastbound.
5	Henderson/Gulph Road Widen near I-76 Ramps SR: 3029	48187	Widening along South Henderson Road from S. Gulph Road to Shoemaker Road as well as widening along S. Gulph Road between Crooked Lane to the I-76 Gulph Mills intersection.
6	PA 23/Valley Forge Road and North Gulph Road Relocation SR: 0422	66952	Relocation of PA23 and N. Gulph Road in the vicinity of the PA23/US 422 Interchange.
7	US 422, (New) Expressway Bridge Over Schuylkill River (SRB) SR: 0422	70197	Replacement of the US 422 Schuylkill River Crossing. Project includes construction of a new US 422 bridge structure for eastbound and westbound traffic over the Schuylkill River, replacement of the US 422 structure over Indian Lane and the US 422 structure over the Schuylkill River Trail, replacement of the PA23 structure over US 422, and construction of a new flyover ramp from US 422 eastbound to PA 23.
8	MontCo Bridge Rehab Group S	89340	Rehabilitation of 7 structurally deficient bridges. Upper Merion bridge to be rehabilitated: Gypsy Lane (T711) over Schuylkill Expressway.
9	First Avenue Road Diet (TAP)	104280	Road diet along the entire length of First Avenue from N. Gulph Road to Allendale Road by reducing number of travel lanes while maintaining acceptable vehicular traffic operations. Work will include: converting road from 4 lanes to 3 lanes with one converted to a center turn lane, construction of bicycle lanes on each side of the road, and pedestrian improvements.
10	First Ave Linear Park/Streetscape	104309	Linear park streetscape and pedestrian sidepath improvements along First Ave in the KOP Business Park.
11	DVRPC Competitive CMAQ Program (48201)—Upper Merion to Bridgeport Train Station Pedestrian Facilities Improvements	96238	Funds allocated for projects that contribute to the attainment of the Clean Air Act standards by reducing emissions from highway sources - $260,253 CMAQ/$304,832 Matching funds.
12	I-76, Regional Travel Information	80096	Implement a Variable Speed Limit System and a Queue Detection System along I-76 from I-276 to US 1.
13	County Bridge Line Item (95447)—Allendale Road Bridge	98227	FY16 FD $350,000, FY16 CON $650,000. The total cost of this project is $1,000,000. This is a retro-reimbursement project. Drawn down in FY15 of the FY2015 TIP.

Figure 40: Proposed 10 Year Capital Improvement Plan (Act 209 Highway Assessment Study Capital Improvements Plan)

Intersection		Existing Conditions + 2022 Pass-Through Conditions	
		Recommended Improvements	Projected Cost of Improvements ($)
1	Valley Forge Road (SR 0023) & Beidler Road (SR3029)/Mancill Mill Road	-Signalize intersection -Add westbound left turn lane on Beidler Rd -Add westbound right turn overlap phase on Beidler Rd -Add southboundleft turn lane with advance left turn phase on Valley Forge Rd	$7,410,369.00
2	Valley Forge Road (SR 0023) & Henderson Road	-Optimize traffic signal timing	$7,500.00
3	S. Gulph Road (SR 3039) & Brooks Road (SR 3038)	-Add eastbound right turn lane and overlap phase on S. Gulph Rd -Optimize traffic signal timings	$912,128.00
4	S. Gulph Road (SR 3039) & Church Road (SR 3038)	-Add southbound left turn lane on Church Rd	$1,393,118.00
5	S. Gulph Road (SR 3039) & South Henderson Road (SR 3029)	-Add westbound left turn lane on S Gulph Rd -Optimize traffic signal timings	$1,978,955.00
6	S. Gulph Road (SR 3039) & Crooked Lane (SR 3027)		
7	S. Gulph Road (SR 3039) & Gypsy Lane		
8	S. Gulph Road (SR 3039) & Swedeland Road (SR 3041)	-Signalize intersection	$225,000
9	S. Gulph Road (SR 3020) & Upper Gulph Road (SR 3030)	-Optimize traffic signal timings	$7,500.00
10	S. Gulph Road (SR 3020) & Matsonford Road (SR 3016)	-Add southbound left turn lane on S. Gulph Rd -Add eastbound left turn lane on Matsonford Rd -Optimize traffic signal timings	$1,623,869.00
11	Matsonford Road (SR 3016) & Upper Gulph Road (SR 3030)	-Add westbound left turn lane on Matsonford Rd -Add southbound left turn lane on Upper Gulph Rd -Optimize traffic signal timings	$2,398,194.00

2022 'With Development' Conditions		Maximum Development % Applicable to Act 209 Impact Fee (%)	CIP Development % Applicable to Act 209 Impact Fee (%)	Capital Improvement Plan Development Allocation ($)	Anticipated Construction	Notes
Recommended Improvements	Projected Incremental Cost of Improvements (1) ($)					
-Add westbound through lane on Valley Forge Road -Add eastbound left turn lane on Valley Forge Road -Optimize traffic signal timings	$11,319,631.00	50%	35%	$3,961,870.85	2022	Currently funded on 2015 TIP, cost estimate prepared by UMTA
-Optimize traffic signal timings	$7,500.00	50%	50%	$3,750.00	2022	
-Add eastbound through lane on S Gulph Rd -Add westbound through lane on S Gulph Rd.	$2,164,149.00	50%	50%	$1,082,074.50	2022	Projects recommended to be completed together, and also include intersection 18
-Signalize intersection -Add eastbound through lane on S Gulph Rd -Add westbound through lane on S Gulph Rd						
-Add northbound and southbound through lanes on Henderson Rd -Optimize traffic signal timings	$2,422,174.00	50%	50%	$1,211,087.00	2022	Complete with Intersection 19 (Shoemaker Road)
-Add eastbound through lane on S Gulph Rd -Add westbound through lane on S Gulph Rd -Add southbound right turn lane on Crooked Ln -Optimize traffic signal timing	$6,705,297.00	50%	50%	$3,352,648.50	2022	Projects recommended to be completed together, and also include intersection 21, anticipated to be partially funded by PennDOT on TIP
-Add eastbound through lane on S Gulph Rd -Add westbound through lane on S Gulph Rd -Add eastbound advance left turn phase on S Gulph Rd -Optimize traffic signal timings						
-Add eastbound left turn lane on Upper Gulph Rd -Add westbound right turn lane on Upper Gulph Rd -Optimize traffic signal timings	$2,073,642.00	50%	50%	$1,036,821.00	2022	Border with Lower Merion
-Add eastbound right turn lane on Matsonford Road -Add southbound right turn lane on S. Gulph Road -Optimize traffic signal timings	$906,930.00	50%	50%	$453,465.00	2022	
-Optimize traffic signal timings	$7,500.00	50%	50%	$3,750.00	2022	

Intersection		Existing Conditions + 2022 Pass-Through Conditions	
		Recommended Improvements	Projected Cost of Improvements ($)
12	Dekalb Pike (SR 0202) & Mall Boulevard		
13	Dekalb Pike (SR 0202) & Allendale Road	-Optimize traffic signal timings	$7,500.00
14	Dekalb Pike (SR 0202) & Henderson Road (SR 3029)	-Add northbound and southbound left turn lane -Adjust signal phasing - Remove split phase -Optimize traffic signal timings	
15	Allendale Road & Wills Boulevard	-Optimize traffic signal timings	$7,500.00
16	Allendale Road & Court Boulevard	-Optimize traffic signal timings	$7,500.00
17	Swedesford Road (SR 3036) and S. Warner Road	-Add southbound right turn lane on Bryce Lane -Optimize traffic signal timings	-Add southbound right turn lane on Bryce Lane -Optimize traffic signal timings
18	Croton Road (SR 3024) & Brooks Road (SR 3028)		
19	Henderson Road (SR 3029) & Shoemaker Road		
20	Swedeland Road (SR 0320 & SR 3041) & Holstein Road (SR 0320) & Jones Road	-Add westbound left turn lane on Swedeland Rd -Optimize traffic signal timings	$1,265,378.00
21	S. Gulph Road (SR 3039) & I-76 EB On-Off Ramp /Trinity Road (SR 0320)	-Optimize traffic signal timings	$7,500.00
22	S. Gulph Road (SR 3039) &Shoemaker Road/Weadley Road	-Add southbound left turn lane on Shoemaker Rd -Optimize traffic signal timings	$347,091.00

2022 'With Development' Conditions		Maximum Development % Applicable to Act 209 Impact Fee (%)	CIP Development % Applicable to Act 209 Impact Fee (%)	Capital Improvement Plan Development Allocation ($)	Anticipated Construction	Notes
Recommended Improvements	Projected Incremental Cost of Improvements (1) ($)					
-Add westbound right turn lane on Dekalb Pk -Add southbound right turn lane on Mall Blvd -Optimize traffic signal timings	See Project TA1 (2)	50%				Limited ability to construct improvements, see Project TA1
-Add eastbound through lane on Dekalb Pk -Add westbound right turn lane & overlap phase on Dekalb Pk -Add southbound left turn lane on Allendale Rd -Add southbound right turn overlap phase on Allendale Rd -Reconfigure northbound approach to Left- Through/Right -Adjust signal phasing - Remove split phase	See Project TA1 (2)	50%				Limited ability to construct improvements, see Project TA1
-Add eastbound through lane on Dekalb Pk -Add westbound left turn lane on Dekalb Pk -Add westbound through lane on Dekalb Pk -Add northbound right turn lane on Henderson Rd -Add northbound right turn overlap phase on Henderson Rd -Optimize traffic signal timings	See Project TA2 (2)	50%				Limited ability to construct improvements, see Project TA2
-Optimize traffic signal timings	$7,500.00	100%	100%	$7,500.00	2022	
-Optimize traffic signal timings	$7,500.00	100%	100%	$7,500.00	2022	
-Optimize traffic signal timings	$7,500.00	50%	50%	$3,750.00	2022	
		50%	50%	$0.00		See intersections 3,4
		50%	50%	$0.00		See intersection 5
-Optimize traffic signal timings	$7,500.00	50%	50%	$3,750.00	2022	
-Add southbound right turn lane on S Gulph Rd -Add southbound right turn overlap phase on S Gulph Rd -Optimize traffic signal timings	$2,968,980	50%	50%	$1,484,490	2022	Complete with intersections 6, 7, 8
-Add northbound left turn lane on Weadley Rd -Optimize traffic signal timings	$781,389.00	50%	50%	$390,694.50	2017	

Intersection		Existing Conditions + 2022 Pass-Through Conditions	
		Recommended Improvements	Projected Cost of Improvements ($)
23	Church Road & Crooked Lane (SR 3027)		
24	Church Road & Horizon Drive		
25	Crooked Lane & Yerkes Road		
26	DeKalb Pike (SR 0202) & Saulin Boulevard		
28	Valley Forge & Caley Road		
29	Valley Forge (SR 0023) & 422 EB Off Ramps	-Add southbound left turn lane on US 422 Off Ramp -Optimize traffic signal timings	$1,463,551.00
30	Valley Forge (SR 0023) & N. Gulph Road (SR 3033)	-Add westbound left turn lane on Valley Forge Rd -Add southbound left turn lane on N Gulph Rd -Optimize traffic signal timings	$3,111,540.00
TA1	PA Turnpike & Henderson Road Interchange		
TA2	Prince Frederick Road & Saulin Boulevard Extension		
		Total	$22,714,522.00
Total Development PM Peak Hour Generated Trips (Table 11 Roadway Sufficiency Analysis)			
Project Impact Fee per PM Peak Hour Trip			

(1) Estimated costs include only improvements attributable to development. 2012 Existing or 2022 Pass-Through Improvements are not included in these estimates.

(2) DeKalb Pike intersections pending decision on Desirable LOS threshold and inclusion of UMTA projects.

2022 'With Development' Conditions		Maximum Development % Applicable to Act 209 Impact Fee (%)	CIP Development % Applicable to Act 209 Impact Fee (%)	Capital Improvement Plan Development Allocation ($)	Anticipated Construction	Notes
Recommended Improvements	Projected Incremental Cost of Improvements (1) ($)					
-Add westbound left turn lane on Church Rd -Optimize traffic signal timings	$1,293,618.00	50%	50%	$646,809.00	2017	
-Add eastbound right turn lane on Church Rd -Optimize traffic signal timings	$690,572.00	100%	100%	$690,572.00	2017	
		100%	100%	$0.00		
-Add westbound left turn lane on Dekalb Pk -Optimize traffic signal timings	See Project TA2 (2)	50%	50%			Limited ability to construct improvements, see Project TA2
-Add left-turn lanes on Valley Forge Road -Install traffic signal	$950,000.00	50%	50%	$475,000.00	2022	Cost estimate prepared by UMTA
		50%	0%	$0.00	2022	Will be funded as part of SR0023, Section 2NG (Relocated N. Gulph Road), $13M total project cost estimate prepared by UMTA
-Construct new full-access interchange to Henderson Road	$35,000,000.00	50%	10%	$3,500,000.00	2022	Would potentially mitigate LOS at intersections 12, 13, cost estimate prepared by UMTA
-Construct loop road from intersection of DeKalb & Saulin to intersection of Henderson & Prince Frederick	$8,500,000.00	100%	20%	$1,700,000.00	2022	Would potentially mitigate LOS at intersection 14, 26, cost estimate prepared by UMTA
Total	$75,821,382.00			$20,015,532.35		
				5,524		
				$3,623.38		

Act 209 Assessment of Existing Traffic Operations

The Act 209 Study also analyzed the condition of various intersections. Figures 41 and 42 show the methodology of both signalized and unsignalized intersections. These were ranked A-F based on the number of seconds a vehicle is stopped at the intersection. This delay was measured in the average seconds of delay per vehicle overall for that intersection.

The Transportation Service Area Advisory Committee (TSAAC) identified the preferred level of service (LOS) needed in order to maintain a desired quality of life and prevent further deterioration of traffic operational conditions. This established level does not include that which will occur due to regional growth and out of the Township's control. The TSAAC identified a factor of D (>35 and ≤55 second delay) as the minimum acceptable LOS. This LOS was used in the various analyses done in the study regarding traffic related improvement recommendations that seek to attain preferred thresholds given existing traffic volumes. The intersections with an E or F ranking (>35 second delay), in most need of improvement are listed below. All of the intersections analyzed in the study are shown in Figure 43. Figure 44 shows all of the E and F LOS intersections in the Township.

- E LOS
  - S. Gulph Road (SR 3039) and Church Road (SR 3038)
  - S. Gulph Road (SR 3039) and S.Henderson Road (SR 3029)
  - S. Gulph Road (SR 3039) and Shoemaker Road / Weadley Road
- F LOS
  - S. Gulph Road (SR 3039) and Brooks Road (SR 3038)
  - S. Gulph Road (SR 3039) and Swedeland Road (SR 3041)
  - S. Gulph Road (SR 3039) and Matsonford Road (SR 3016)
  - Matsonford Road (SR 3016) and Upper Gulph Road (SR 3030)
  - DeKalb Pike (SR 0202) and Allendale Road
  - DeKalb Pike (SR 0202) and Henderson Road (SR 3029)
  - Swedesford Road (SR 3036) and S. Warner Road
  - Swedeland Road (SR 0320 & SR 3041) and Holstein Road (SR 0320) and Jones Road

Figure 41: Level of Service Criteria for Signalized Intersections

Levels of Service (LOS)	Stopped Delay Per Vehicle (Seconds)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Figure 42: Level of Service Criteria for Unsignalized Intersections

Levels of Service (LOS)	Stopped Delay Per Vehicle (Seconds)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

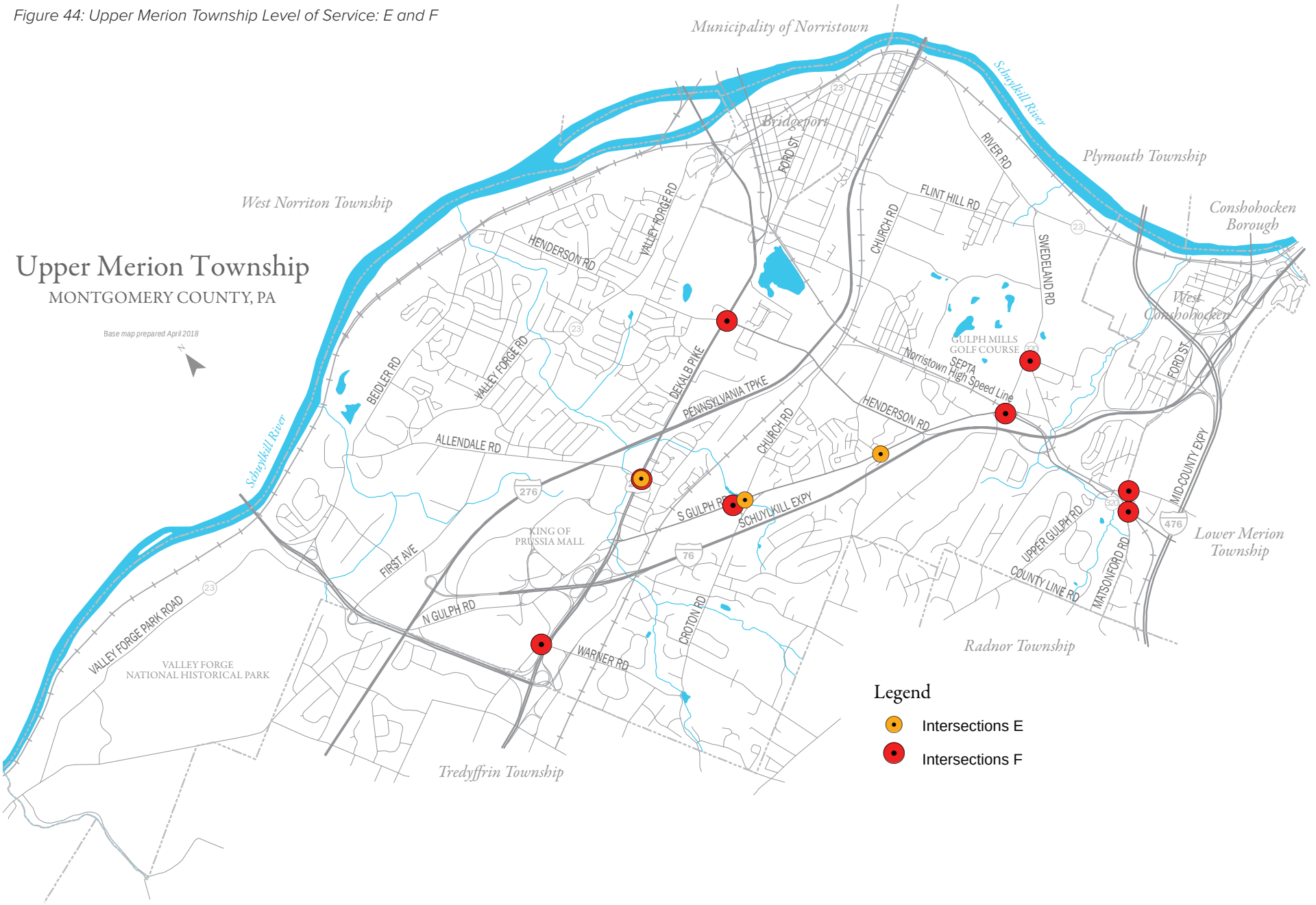
Figure 43: Operational Summary at Study Intersections (Existing Weekday PM Peak Conditions)

	Intersection	LOS[1]	Delay (Seconds)[2]
1	Valley Forge Road (SR 0023) and Beidler Road (SR 3029)	B	15.4
2	Valley Forge Road (SR 0023) and Henderson Road	C	30.6
3	S. Gulph Road (SR 3039) and Brooks Road (SR 3038)	F	168.5
4	S. Gulph Road (SR 3039) and Church Road (SR 3038)	E	58.9
5	S. Gulph Road (SR 3039) and S. Henderson Road (SR 3029)	E	58.5
6	S. Gulph Road (SR 3039) and Crooked Lane (SR 3027)	C	30.1
7	S. Gulph Road (SR 3039) and Gypsy Lane	B	17.0
8	S. Gulph Road (SR 3039) and Swedeland Road (SR 3041)	F	1507.3
9	S. Gulph Road (SR 3039) and Upper Gulph Road (SR 3030)	D	40.9
10	S. Gulph Road (SR 3039) and Matsonford Road (SR 3016)	F	103.2
11	Matsonford Road (SR 3016) and Upper Gulph Road (SR 3030)	F	105.7
12	DeKalb Pike (SR 0202) and Mall Boulevard	C	23.4
13	DeKalb Pike (SR 0202) and Allendale Road	F	84.2
14	DeKalb Pike (SR 0202) and Henderson Road (SR 3029)	F	85.9
15	Allendale Road and Wills Boulevard	C	24.9
16	Allendale Road and Court Boulevard	B	13.9
17	Swedesford Road (SR 3036) and S. Warner Road	F	98.2
18	Croton Road (SR 3024) and Brooks Road (SR 3028)	B	14.7
19	Henderson Road (SR 3029) and Shoemaker Road	B	14.6
20	Swedeland Road (SR 0320 & SR 3041) and Holstein Road (SR 0320) and Jones Road	F	92.8
21	S. Gulph Road (SR 3039) and I-76 EB On-Off Ramp / Trinity Road (SR 0320)	C	33.1
22	S. Gulph Road (SR 3039) and Shoemaker Road / Weadley Road	E	56.6
23	Church Road and Crooked Lane (SR 3027)	B	16.9
24	Church Road and Horizon Drive	C	29.3
25	Crooked Lane and Yerkes Road	B	10.4
26	DeKalb Pike (SR 0202) and Saulin Boulevard	B	15.4
27	Henderson Road (SR 3029) and Prince Frederick Street	B	14.5
28	Valley Forge Road (SR 0023) and Caley Road	A	8.6
29	Valley Forge Road (SR 0023) and SR 0422 EB off Ramps	C	33.5
30	Valley Forge Road (SR 0023) and N. Gulph Road (SR 3033)	D	50.0

[1]*Level of Service, see figures _ and _ for description*

[2]*Delay measure in average seconds of delay per vehicle for overall intersection*

Figure 44: Upper Merion Township Level of Service: E and F




DRIVE THRU
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COMMUNITY FACILITIES

The safety and quality of life of a community is greatly impacted by its infrastructure and the facilities that serve its residents. Development, both existing and proposed, is dependent on these facilities. In addition, new development can be directed into appropriate areas by coordinating the provision of these systems. Evaluating the conditions of these community facilities can help to establish policies and recommendations for the continued provision of services. This chapter will be an overview of the available facilities and services in the Township.

COMMUNITY FACILITIES AND SERVICES

Water Facilities/Public Water suppliers

The Township receives water services from two companies: AQUA Pennsylvania and Pennsylvania American Water Co. AQUA PA Services the majority of the Township with Pennsylvania American servicing a small portion of the Township located south of Bridgeport. Upper Merion is within Montgomery County's Service Area 7. This is the largest service area in population and number of service connections and is served solely but AQUA PA. Figure 45 shows the County's Water Franchise Areas which shows has the boundaries within which water service from each company is located.

The average daily withdrawal of water from AQUA PA in 2006 was 6,458,261 gallons. This was well below the permitted daily withdrawal of 7,780,000 gallons. Pennsylvania American Water Company had a total of 1,018 service connections in the Township. The break-down of these connections based on use type is contained in Figure 46.

Figure 45: AQUA PA Primary Water Supply

AQUA PA Primary Water Supply		
Source	Average Daily Withdrawal (# of days used in 2006)	Permitted Daily Withdrawal
Upper Merion Well	*497,121 gallons (362)*	*580,000 gallons*
Upper Merion Reservoir	*5,961,140 gallons (365)*	*7,200,000 gallons*
Total	6,458,261 gallons	7,780,000 gallons

Figure 46: Pennsylvania American Water Company Service Connections

Pennsylvania American Water Company Service Connections						
Municipality	Domestic	Commercial	Industrial	Institutional	Other	Total
Upper Merion	*906*	*80*	*9*	*6*	*17*	*1,018*

SEWAGE FACILITIES

Pennsylvania Act 537 Plan

The Sewage Facilities Planning Act (Act 537 of 1966) is the foundation for sewage facilities planning in the state of Pennsylvania. This law requires every municipality in the state to develop and maintain an up-to-date sewage facilities plan. The purpose of a sewage facilities plan is to correct existing threats to public health and safety, prevent future sewage disposal problems, and protect the surface and groundwater resources of the municipality. The plan should address existing sewage disposal needs or problems, account for future land development and provide for future needs of entire municipality. Through the 537 planning process, municipalities are required to develop and implement comprehensive official sewage plans that address existing and potential future sewage needs.

All municipalities in Pennsylvania are required to adopt an official Act 537 Sewage Facilities Plan and are responsible for keeping the plan updated. These plans should be modified as new land development projects are proposed or whenever a municipality's sewage disposal needs is changed. The DEP reviews and approves the official plans and any subsequent revisions. In the event a sewer extension is required, the Act 537 Plan must be updated. The Township updated their Act 537 Plan in 2004. Proposed improvements included changes to Abrams Run Sewer System and Matsunk Sewer System.

Pollution Reduction Plan

The Township is required to complete a pollution reduction plan in order to remain in compliance with the PA Department of Environmental Protection's (DEP) National Pollutant Discharge Elimination System Phase II MS4 Program. The Pollution Reduction Plan (PRP) aims to fulfill the requirements of Appendix D of NPDES PAG-13 for the Township while providing guidance towards the construction and implementation of stormwater quality BMPs to provide pollutant loading reductions. The document identifies pollutants of concern and proposes BMPs to meet required reduction levels. It also identifies potential funding mechanisms and the responsible parties for the operation and maintenance of BMPs. Detailed information regarding specific BMPs can be found in the PRP.

The Upper Merion Municipal Utility Authority provides wastewater treatment and conveyance for all of Upper Merion Township. The Township's Sanitary Sewer Collections System consists of approximately 140 miles of sanitary sewers and eleven pumping stations. The wastewater collected by this system is from a mixture of residential, commercial, and industrial uses. The

Township maintains all sanitary sewer lines, as well as sewer laterals from outside the curb to the sewer main. The Township also maintains all pumping stations. These stations pump the wastewater to either of the two Water Pollution Control Centers (WPCC) for treatment. These pollution control centers include the Matsunk WPCC and the Trout Run WPCC. Four pumping stations (Abrams, Swedesburg, Swedeland, and Flint Hill) pump to Matsunk WPCC. The remaining pumping stations include: Ross Road, Valley Brooke, DeKalb, Crooked Lane, Matsonford, Balligomingo, and Glen Rose.

Matsunk WPCC

The Matsunk WPCC is located off of River Road on McCoy's Lane in the Township. This treatment plant discharges its treated effluent to Frog Run, which is a tributary of the Schuylkill River. The treatment capacity of the plant when it was originally constructed in 1966 was 1.25 million gallons per day (MGD). Two expansions of the capacity of the plant were done. It was expanded first in 1983 to a rating of 2.5 MGD and again in 1989 to its current rating of 5.5 MGD.

The Matsunk drainage basin serves the eastern portion of the Township and is comprised of approximately 4,200 acres. The basin also serves a portion of Tredyffrin Township approximately 280 acres in size. In addition, the Matsunk WPCC serves the Abrams drainage basin which contains approximately 2,250 acres. The Matsunk WPCC and all associated sewer facilities are operated and maintained by the Township under a lease agreement with the UMMUA.

The average annual daily flow to the Matsunk WPCC during 2016 was 2.814 MGD, with a maximum 3-month flow of 3.754 MGD. The WPCC removed between 94 and 98% of the CBOD5. CBOD5 stands for carbonaceous biochemical oxygen demand and is a method used for measuring the amount of pollutant removed from wastewater. The effluent discharge concentrations were below the monthly effluent limits contained in the NPDES permit for all months of the past year. Figure 47 contains the location of each WPCC, sewer mains, and all pumping stations in the Township.

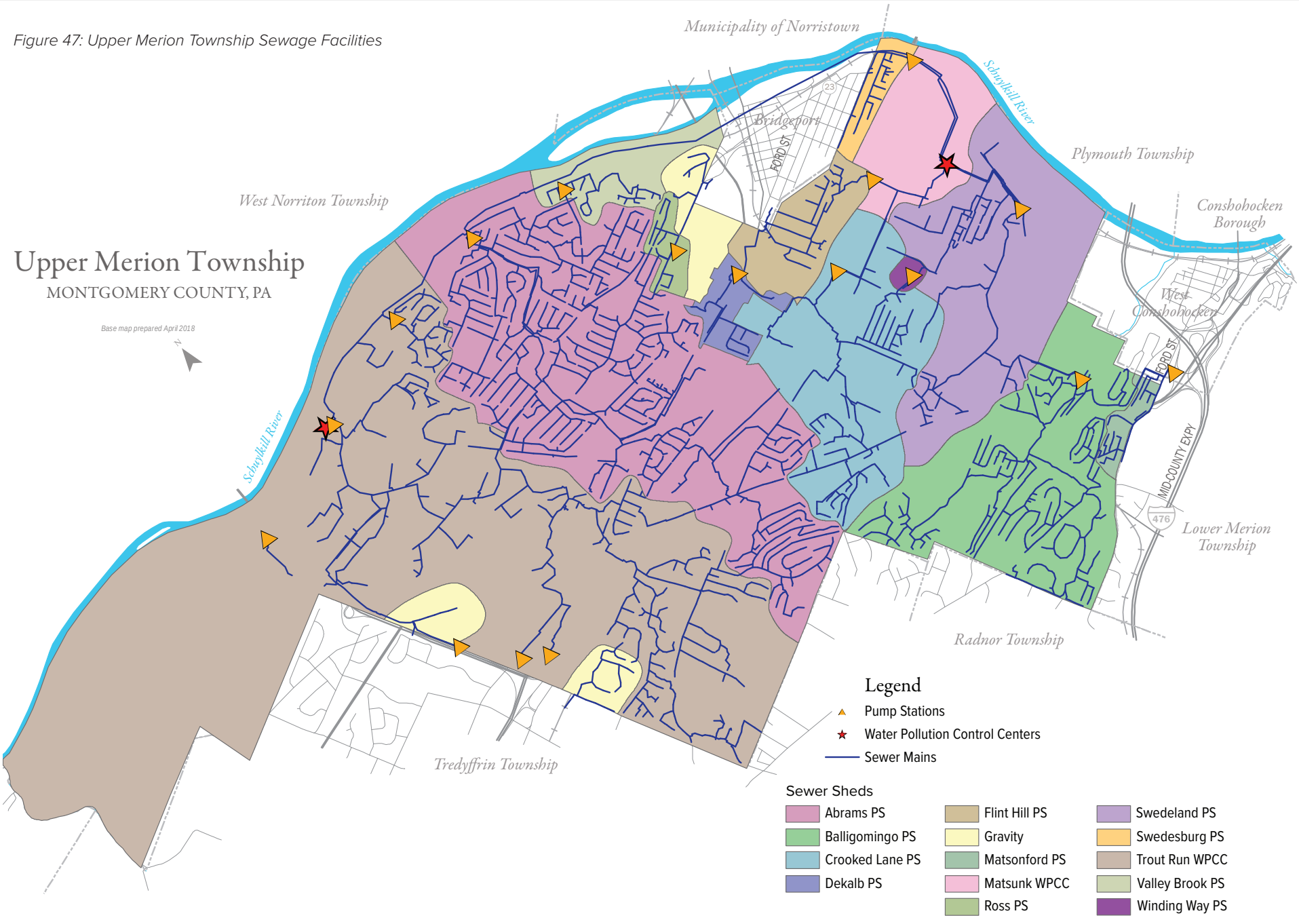
Trout Run WPCC

The Trout Run WPCC is located on Mancill Mill Road near Route 422 in the Township. This plant discharges its treated effluent to the Schuylkill River. The Trout Run WPCC was constructed in 1960 with a design flow of 2.5 MGD. It was expanded twice, first in 1968 to 5 MGD and again in 1995 to 6 MGD. The facility employs physical and biological processes to achieve the required treatment level.

The Trout Run Basin serves the western portion of the Township and contains approximately 4,350 acres. The Trout Run WPCC serves the Township

Trout Run Treatment Plant

Figure 47: Upper Merion Township Sewage Facilities



along with approximately 4,800 acres in Tredyffrin Township and approximately 300 acres in Easttown Township, and a small number of homes in Radnor Township.

In 2016, the Trout Run WPCC had an average flow of 2.3 MGD with a maximum 3-month flow of 2.66 MGD. The WPCC removed between 96 and 99% of the CBOD5 in 2016. Effluent discharge concentrations were below the monthly effluent limits contained in the NPDES permit for all months of 2016.

SOLID WASTE AND RECYCLING SERVICES

Upper Merion has a subscription-based service for waste and recycling pick-up. This means that every resident and commercial use pursues its own contract services with haulers. This allows for each individual entity to have the highest level of choice regarding these services. Subscription services also have many drawbacks that may wish to be considered in the future. A single hauler system for the Township would result in far less trucks on Township roads with a single day for recycling and trash pick-up. This increases safety on roads, decreases noise and traffic, and reduces wear and tear on the roads. Due to the competitive bid process, a single hauler system could also result in a lower cost per resident. The list of waste and recycling collectors, as of 2012, is contained in Figure 48. In addition to waste collection, the Township code requires residents and businesses to recycle recyclable materials as well.

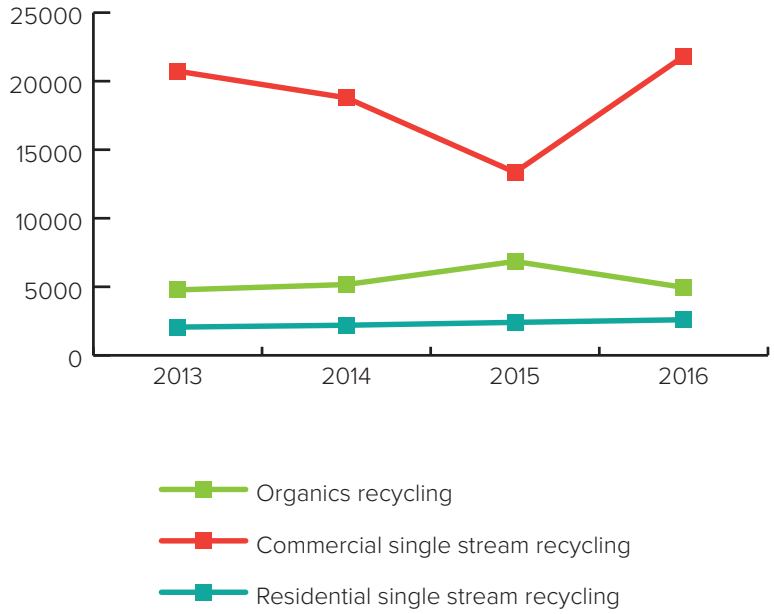
Figure 48: Waste and Recycling Collectors

Waste and Recycling Collectors (2012)	
Hauler	Type
A.J. Blosensk, P.O. Box 392, Elverson, PA 19520	*Residential, Commercial, Industrial*
BFI Waste Systems of North America, 372 S. Henderson Road, King of Prussia, PA 19406	*Commercial, Residential*
Interstate Disposal	*Commercial, Residential*
Cook & Young Industries, P.O. Box 147, Royersford, PA 19468	*Commercial, Residential*
Evergreen Waste Solutions, 220 E. Washington Street, Norristown, PA 19401	*Commercial, Residential*
G & C Waste Services, 2955 Felton Road, East Norriton, PA 19403	*Commercial, Residential*
Gold Medal Disposal, 3323 S. 61st Street, Philadelphia, PA 19153-3513	*Commercial*
Horizon Waste Services, 700 Brook Road, Conshohocken, PA 19428	*Commercial, Residential*
J & J Waste Service, 1477 Sullivan Drive, Blue Bell, PA 19422	*Commercial*
John Miller Company, 147 Oreland Mill Road, Oreland, PA 19075	*Commercial*
Louis Mascaro & Sons, 701 Sterigere Street, Norristown, PA 19401	*Residential*
Mascaro & Sons Bridgeport, 315 W. Sixth Street, Bridgeport, PA 19405	*Residential*
Mascaro & Sons Souderton, 2650 Audubon Road, Audubon, PA 19403	*Commercial, Residential*
McCusker & Ogborne, 10 Reaney Street, Chester, PA	*Commercial*
R.A.M.S. Container Service, 18 Maple Street, Conshohocken, PA 19428	*Commercial*
Rapid Recycling Inc., 5 Brower Avenue, Oaks, PA 19456	*Commercial*
Romano Rubbish Removal, Inc., 3355 Arcola Road, Collegeville, PA 19426	*Commercial, Residential*
Santangelo Brothers, P.O. Box 0269, Norristown, PA 19404-0269	*Commercial, Residential*
SLM Facilities Solutions Nationwide, 5000 Commerce Drive, Green Lane, PA 18054 Contracted with Waya Waste	*Commercial*
Waste Management of Indian Valley, 400 Progress Drive, Telford, PA 18969	*Commercial, Residential*
Waya Waste, 2500 State Road, Bensalem, PA 19020-7312	*Commercial*

Figure 49: Waste and Recycling Rates

Year	Residential single stream recycling	Commercial single stream recycling	Organics recycling	Countywide trash	Residential organics	Commercial organics
2013	*2,061*	*20,728*	*4,774*	*623,599*	*4,608*	*166*
2014	*2,196*	*18,788*	*5,164*	*626,422*	*3,155*	*2,009*
2015	*2,405*	*13,352*	*6,850*	*612,928*	*2,606*	*4,243*
2016	*2,597*	*21,812*	*4,956*	*530,043*	*1,331*	*3,625*

Figure 50: Upper Merion Township Recycling and Waste Rates



Recycling Bins at Bob Holland Park

PUBLIC SAFETY

The public safety department of Upper Merion Township was recently reorganized to encompass the police department, the fire and emergency medical services department, and emergency management.

Fire and Emergency Medical Services

The mission of the Township's Fire and Emergency Medical Services Department is to maintain an effective response capability to natural and man-made emergencies through planning and efficient use of human resources and equipment. Upper Merion Township is served by three fire companies: King of Prussia Volunteer Fire Company, the Swedeland Volunteer Fire Company, and the Swedesburg Volunteer Fire Company.

In 2014, the three fire companies responded to over 1,200 emergency calls. Another station is planned to be located within the Village at Valley Forge. Emergencies included: alarm protection troubleshooting, assisting neighboring municipality fire departments, field and brush fires, fire prevention and life safety education, hazardous materials incidents, structural and vehicle fires, and vehicle and other types of rescue calls. The Township is also served by the Upper Merion Township EMS which has paid employees.

Upper Merion Fire Study

In April of 2016, the Township conducted a Fire Study evaluating the state of fire and rescue services in the Township and made recommendations as to how to improve services in the future. This study is a comprehensive look at existing organizational structures, staffing and equipment levels, and facilities in order to determine if the level of service in the Township is in line with generally accepted standards, industry best practices, and benchmarks for a community of like character. Recommendations in the study are detailed and pertain to the following topics: the current organization for providing fire and EMS within the township, the current first-due response districts and the relationship between threat and planned response, the current and future equipment needs, and reduction of any redundancies in service and equipment.

Montgomery County Fire Services Study

In June of 2018, Montgomery County Fire and Rescue Services conducted a Fire Services Study. One of the main recommendations of the report was to establish a service delivery model/ standard of cover should be developed and reviewed for ultimate effectiveness and possible implementation, within Montgomery County. Standard of response cover refers to the result of an analytical model which evaluates station location in proximity to the location and types of calls for assistance. A study of this kind can help to determine where additional stations can be located to meet service delivery demands. The

Swedesburg Fire Trucks

Upper Merion Fire Study recommended that the standard of cover for both EMS responses and fire services should be revised to the benchmark of a unit on the scene within four minutes of response, 90% of the time. This standard comes from the National Fire Protection Association (NFPA). An analysis of the current fire stations and their service areas in relation to the standard of cover can provide insight to potential improvements in fire and rescue services in the Township. Any additional recommendations can be found in the Upper Merion Township Fire Study.

Police Department

The Upper Merion Township Police Department includes the following sworn officers and civilian employees:

In 2016, the Township responded to 28,146 calls for service. This was a slight increase over 2015 calls for service of 27,150. A total of 3506 traffic stops were initiated by the Upper Merion Patrol Division. This total is a decrease of 275 traffic stops from 2015. Of these stops, 1,268 traffic citations were issued. This represents a decrease of 298 citations from the 2015 total. The police department investigated 1887 auto accidents in 2016 which constituted an increase of 173 accidents from 2015.

Swedesburg Volunteer Fire Company

The UMPD established a community relations unit in 1997 which established a variety of educational programs for residents and the business community. This unit was renamed Community Response Unit in 2013 and was restructured to better serve the needs of the community. Programs and services were expanded and the focus of the unit is entirely community relations oriented.

Sworn Officers	Total
Chief of Police	1
Captain of Police	*1*
Lieutenants	*6*
Sergeants	*7*
Corporals	*5*
Patrol Officers	*34*
Detectives	*12*
Juvenile Detectives	*2*
Community Response Unit	*3*
Total	66

Civilian Employees	Total
RMS Administrator	*1*
Telecommunicators: Full-Time	*7*
Telecommunicators: Part-Time	*2*
Secretaries	*1*
Records Division Clerks	*4*
Quartermaster	*1*
Special Officers	*2*
Crossing Guards	*7*
Crossing Guards: Substitute	*2*
Evidence Technician	*1*
Total	*28*

A Police Chaplain Program was established in an effort to aid the Department in efforts to advance the Community Policing Concept. The program is a voluntary partnership between the Clergy and the Police Department to help improve the quality of life for residents. The Chaplain Program makes counseling and pastoral services available to the community. Additional information regarding police department programming can be found on the Township website.

GOVERNMENT FACILITIES

The Upper Merion Township Building serves the community and is located at 175 West Valley Forge Road. The Township is served by one library, which is located on the second floor of the Township Building. Library services include educational programming for children and adults. All Township government functions take place at this building.

The Upper Merion Township Community Center was completed in the fall of 2015. Its services are available to both residents and non-residents. The center includes a state of the art fitness facility, recreational programs, gym space, the Senior Service Center and new walking trails. The center offers many programs, classes, and services, including group exercise classes, adult recreation leagues, life enrichment programs, recreational programs for preschool and youth, summer day camps, and room rentals for meetings, arts, and fitness. The center is also home to an extensive fitness facility. The community center is considered an asset for the Township and enriches the type of services available to the community.

Upper Merion Township Building

Upper Merion Community Center

EDUCATIONAL FACILITIES

The Upper Merion Area School District serves Upper Merion Township, Bridgeport Borough, and West Conshohocken Borough in Montgomery County. The school district consists of six schools: Bridgeport Elementary, Caley Elementary, Candlebrook Elementary, Roberts Elementary, Upper Merion Area Middle School, and Upper Merion Area High School. Gulph Elementary School was recently under construction and opened in Fall of 2018. Caley Elementary was recently reconstructed and was finished in September of 2018.

Montgomery County evaluated school district enrollment projections in 2015 using a combination of data related to birth rates and housing trends. The study found that the general trend for future enrollments for the UMASD calls for an increase of 12% over the next five years. Some of this growth will be driven by new residential construction and increase in the popularity of apartment housing to families. The growth will also be a result of an increase in birth activity in recent years which will be augmented in the future by increases in the population of adults entering the most popular child rearing years. While this growth may slow down after the five years, it is expected to continue through the ten year projection period of the study.

Roberts Elementary School

HOUSING

A key factor for maintaining the quality of life for current and future township residents is ensuring the availability of high-quality, and affordable housing. In addition, it's also important to recognize that the long-term economic well-being of the township, as a center of office and industrial activity, relies upon having an adequate supply of housing that serves a range of income levels. For business enterprises to maintain competitiveness and economic growth they need to attract a young, talented, and highly educated workforce. More and more these young professionals prefer living close to work in a high-quality environment. Therefore, the township must ensure varied and affordable housing opportunities are maintained to attract the workers desired by today's business. To facilitate this, the township must balance the importance of concentrating new development within areas of the township well-positioned for providing the amenities being sought by younger professionals with the need to maintain a high quality of life and affordability within the township's established residential neighborhoods. Some of this can be accomplished by directing new growth to emerging mixed use areas, ensuring new infill housing is compatible with surrounding development, and promoting a pedestrian friendly environment.

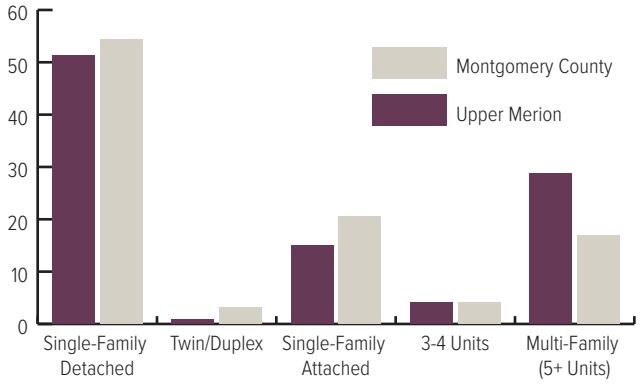
EXISTING CONDITIONS

Housing Units

The housing stock of Upper Merion Township is diverse and in ample supply. There are single-family homes, twins, duplexes, townhouses, and multi-family units. According to information from the 2012-2016 ACS, 51.3% of all homes in the Upper Merion Township are single-family detached (see Figure 51). The remaining housing units consist of multi-family dwellings having 5 or more units (28.8%), attached/townhouse units (15.0 %), multi-family dwellings having 3 or 4 units (4.1%), and twins/duplexes (0.80%). This breakdown of single-family detached units to attached/multi-family units (51% to 49%) is very similar to the county's dwelling type mix, which is comprised of 54% single-family detached units and 46% attached/multi-family units.

Comparing the year 2000 housing unit mix to the 2010 mix, the township's ratio of low density units to high density units has decreased slightly, having gone down from 54% single-family detached and 46% attached and multi-family units. This is attributable to the 406 townhomes and multi-family units built 2000 to 2009 versus the 230 single-family homes constructed during the same period (see Figure 52). In addition, based upon the mix of housing that has been proposed

Figure 51: Housing Types



in the township, and constructed since the last census count, the ratio of low density units to high density units is expected to continue to decrease and will likely result in a higher percentage of township dwelling units being attached and multi-family. This is not unusual for a built-out community like Upper Merion since the lack of large, vacant tracts of land make it impossible to provide for continued residential growth via single-family detached construction. Furthermore, by focusing new residential growth into mixed use/redevelopment areas, the township is able to accommodate the growth needed to maintain its economic well-being, while preserving the character of its traditional single-family detached residential neighborhoods.

Looking at housing units by Planning Area, Planning Area 2 (Abrams/Belmont) has nearly a third of all dwelling units in the township and is the largest concentration of single-family detached homes (see Figure 53). Another one-third of all dwellings in the community occur in the combination of Planning Areas 4, 5, and 6 in the central portion of the township within the Church Road and Henderson Road corridors. For calculation purposes these three planning areas were combined to avoid the significant splitting census tracts. This combined area also includes the greatest mix of dwellings with 32% single-family detached, 16% single-family attached, and 48% multi-family dwellings.

Figure 52: Units Built by Year

Year	SFD	SFA	MF	TOTAL
2000	*45*	*29*	*128*	*202*
2001	*15*	*82*	*0*	*97*
2002	*11*	*85*	*0*	*96*
2003	*28*	*3*	*0*	*31*
2004	*31*	*15*	*32*	*78*
2005	*30*	*8*	*0*	*38*
2006	*23*	*2*	*0*	*25*
2007	*21*	*3*	*0*	*24*
2008	*15*	*7*	*0*	*22*
2009	*11*	*12*	*0*	*23*
2010	*3*	*2*	*0*	*5*
2011	*3*	*0*	*0*	*3*
2012	*6*	*2*	*0*	*8*
2013	*3*	*0*	*0*	*3*
2014	*4*	*0*	*0*	*4*
2015	*0*	*2*	*0*	*2*
2016	*5*	*15*	*363*	*383*
2017	*3*	*25*	*570*	*598*
TOTAL	257	292	1093	1642

Figure 53: Housing Units by Planning Area

Planning Area(s)	Single-Family Detached	Twin/Duplex	Single-Family Attached	Multi-Family 3-4 Units	Multi-Family 5+ Units	TOTAL
1 & 3	*109*	*-*	*5*	*14*	*1,722*	*1,850*
2	*3,021*	*-*	*513*	*217*	*246*	*3,997*
4, 5 & 6	*1,249*	*74*	*620*	*260*	*1,592*	*3,795*
7	*941*	*-*	*50*	*-*	*-*	*991*
8	*947*	*-*	*231*	*15*	*-*	*1,193*
9	*228*	*21*	*483*	*14*	*94*	*840*
TOTAL	*6,495*	*95*	*1,902*	*520*	*3,654*	*12,666*
Township-wide %	*51.28%*	*0.75%*	*15.02%*	*4.11%*	*28.85%*	*100%*

Planning Areas 1 and 3 were combined since they also split census tracts and consist primarily of commercial/office/light industrial uses. While this combined planning area only contains about 15% of the township's dwelling units, it has nearly 42% of the township's multi-family dwellings, primarily due to Valley Forge Towers in Planning Area 1. Planning Area 7 and 8 consist of the lowest density residential areas in the township, and contain only 8% and 9%, respectively, of the township housing units. However, Planning Area 8 does have a sizable concentration of attached dwellings, primarily attributable to the Rebel Hill development. Lastly, Planning Area 9 has a significant amount of Office and Light Industrial uses, and contains a smaller number of housing units than the other Planning Areas. This Planning Area, however, does have a large percentage of single-family attached homes concentrated in several large townhome developments.

Housing Age

Upper Merion has been building out for most of the last 100 years with half of the township's housing units having been built prior to 1970 (see Figure 54). The largest single decade of construction took place in the 1950's when nearly 2,800 housing units were constructed during the post-war suburban housing boom.

Figure 54: Units Built by Decade

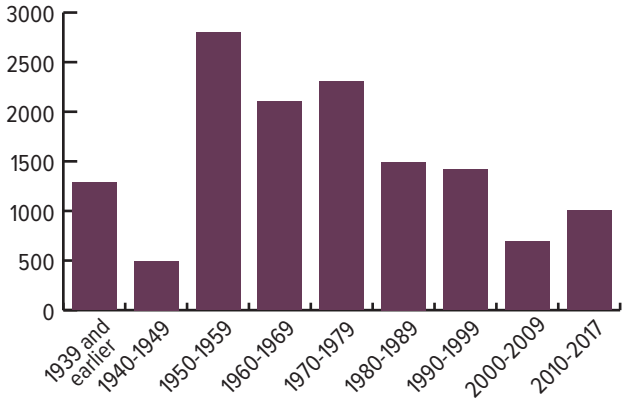
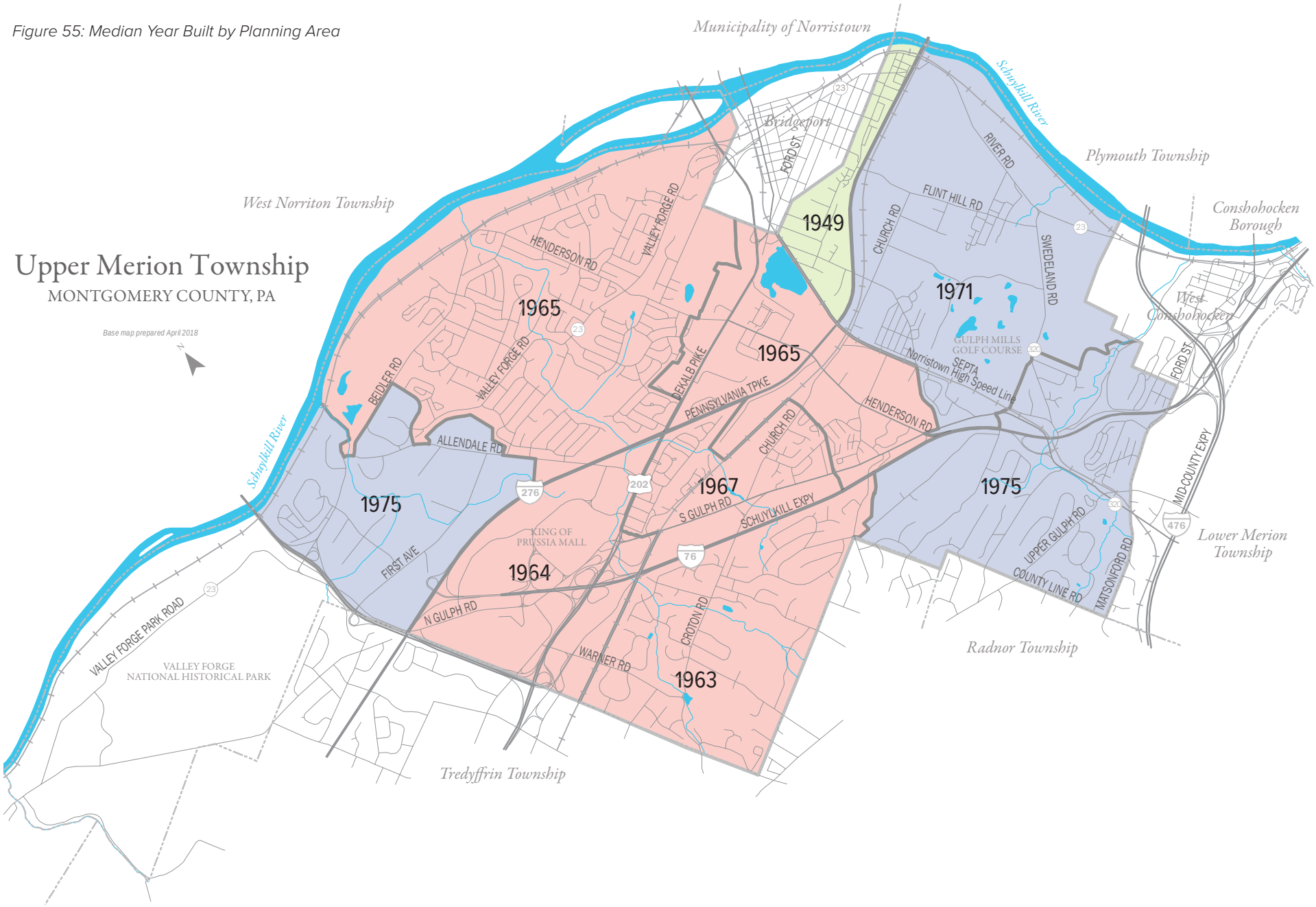


Figure 55 shows the median age of homes for each planning area and gives a basic sense of the sequence of housing construction in the township. Not surprisingly, some of the first housing in the township was built outside of Bridgeport Borough in Swedesburg/King Manor area, having a median age of 1949. The core of the township in Planning Areas 2, 3, 4, 5, and 7 were significantly built out between the 1950s and early 1970s and have a median age that is in the early to mid-1960s. The remaining 3 Planning Areas have a median age of construction in the 1970s.

Overall, the township's housing stock, especially those areas that are primarily single-family detached, is over 50 years old, with some areas approaching 70 years old. Ongoing home maintenance and improvement will be a key factor in protecting and maintaining the quality of life in these neighborhoods. To encourage ongoing reinvestment in these neighborhoods, the township should ensure community infrastructure, including streets and sidewalks, is well-maintained, public safety, through fire and police services, is properly supported, and that community zoning and building codes are uniformly enforced.

Figure 55: Median Year Built by Planning Area



Housing Value And Affordability

Based upon the 405 housing units sold in Upper Merion in 2016, the township's median sales value was $299,010. This figure represents a 19.6% increase from the township's 2015 median sales price and is only slightly above the county's 2016 median sales value of $278,000. Looking at specific housing types in Upper Merion, the median sale values vary from $325,000 for a single-family detached dwelling (based upon 261 sales) to $160,000 for a multi-family condominium unit (based upon 41 sales). The median sales price for single-family attached units was $274,000 for the 103 that were sold. It's important to note that these sales values include what was paid for both existing and new units. Across the County in 2016, new home sales approached $450,000, while existing unit sales were closer to $268,000. Of course, nearly 10 times as many existing units sold than new units, bringing the median sales price back down to $278,000. This would be similarly true in Upper Merion, but the overall median sales value still serves as the best available surrogate for the current market value of housing.

Next, it is important to have a sense of how affordable the housing is in Upper Merion. A useful measure of affordability is to understand what priced home can be afforded by the median income of occupied homes. If a community is affordable, the median income will be able to afford the median priced home. When this is the case in a community, it means that homeownership is more likely to be maintained at a healthy level and homeowners aren't pressured to make mortgage payments, leaving more disposable income. For Upper Merion, the 2016 income for occupied units, identified as $85,676.00 in the 2012-2016 American Community Survey 5-year estimates, was used to calculate what home price could reasonably be afforded by that income. Affordability is calculated assuming not more than 30% of gross income should be spent on housing costs, and in consideration of the 2016 30-year fixed mortgage interest rate, 2016 municipal tax rates, and the buyer having a 10% down payment. Based upon this analysis, the estimated 2016 median income for Upper Merion could reasonably afford a home selling for $325,000. Since this is higher than the median sales price of homes in 2016 ($299,010), it appears that Upper Merion is very affordable, leaving most homeowners in a situation to comfortably maintain a high quality of life. Looking at Figure 56, the median housing value, as reported in the 2012-2016 ACS, is identified for each Planning Area. We can see that the median income could afford the median priced home in 5 of the 9 Planning Areas. Planning Areas 2 and 3 are only slightly more expensive than could reasonably be afforded by the median income and Planning Areas 7 and 8 are only affordable by those making nearly twice the median income.

Housing Demand

The population of Upper Merion is projected to increase from 28,395 people in 2010 to 34,003 people by the year 2040. In order to understand how this additional population will relate to land use, we need to project the additional housing demand that could be generated by these additional residents. Figure 57 estimates future 2040 housing demand for both the county and the township based upon the forecasted 2040 population. Figure 57 also outlines each step in the process and discusses the numbers being used. The analysis reveals that if the township grows to the population forecasted for 2040, the demand for housing will increase by approximately 1,899 units.

To meet this housing need, an average of 95 units per year would need to be constructed within the township over the next 20 years. With the township averaging 125 units built per year over the last 8 years it would seem the township is only slightly ahead of what is needed to meet the 2040 population. However, the vast majority of those units (981 of 1,007) have been built in 2016 and 2017 alone. At this pace, the future 2040 population may be vastly under-forecasted. This is likely due to the fact that much of the existing development was not factored into the current forecasts: the Village of Valley Forge was the result of litigation, and the KOP Mixed Use zoning had not been adopted. These two factors have been significant drivers of the growth in the township and will be major factors in the updated population forecasts. And given the amount of land open for redevelopment in the KOP Mixed Use district, there likely won't be any issues preventing the township from meeting future residential demand.

Figure 56: Median Housing Value by Planning Area

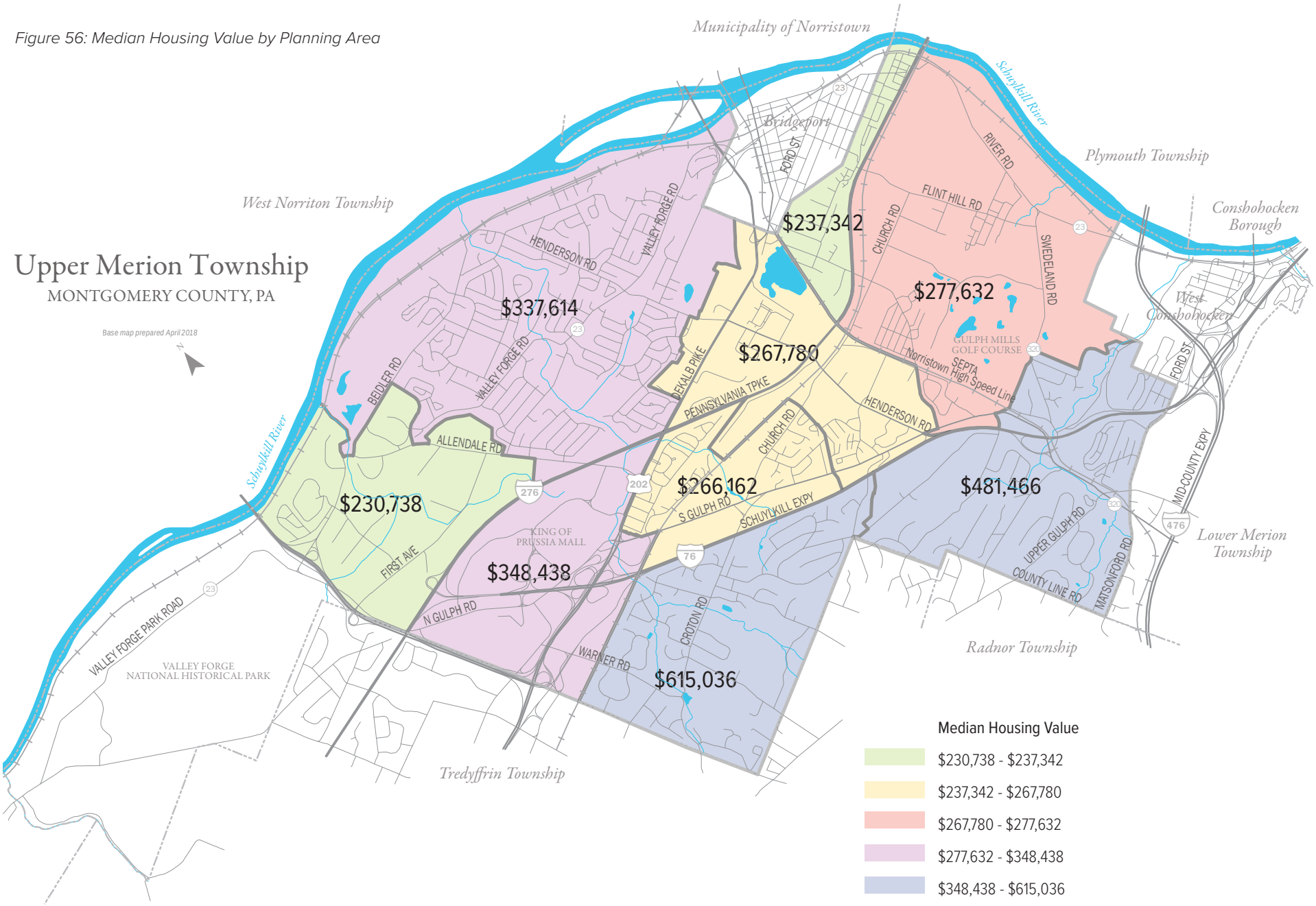


Figure 57: Housing Demands

	Montgomery County	Upper Merion
2040 Projected Population	918,918	34,003
2040 Average Household Size *is based on a projection of the national household size. The county's household size was projected using a curve, based upon 1980-2010 household size and Upper Merion's is calculated as a percentage of the County's household size.*	*2.55*	*2.37*
2040 Projected Group Quarters Population *is based on 2016 ACS group quarters populations. The percentage of total population in group quarters for Montgomery County is 2.3% and 0.47% for Upper Merion.*	*21,798*	*160*
2040 Projected Household Population *equals the projected population minus the group quarters population.*	*897,120*	*33,843*
2040 Projected Number of Households *equals the household population divided by the average household size.*	*351,812*	*14,280*
Estimated Total Number of Housing Units Needed by 2040 *equals the projected number of households (which is equivalent to the projected number of occupied housing units) added to the number of projected vacant units. The vacancy rate for Montgomery County using the 2016 ACS is 5.5% and 5.8% for Upper Merion.*	*371,162*	*15,108*
2016 Total Units Built *(MCPC Unit Built Report)*	*336,964*	*13,209*
Estimated Number of Housing Units Remaining to be Built by 2040 *equals the number of total estimated units minus the housing units built as of 2016.*	34,198	1,899

RECOMMENDATIONS

Unlike undeveloped or still-developing areas, Upper Merion's future residential growth will occur in the form of redevelopment and infill development. In order to protect existing neighborhood character, the township needs to ensure that infill development and home expansions fit in well with and complement the surrounding community. Upper Merion should also review township codes that recognize current demographic trends and facilitate aging-in-place, allowing families to stay together longer. In terms of new housing, the township should continue to support new mixed-use, multifamily housing. When built as part of a larger, transit-oriented development, multi-family housing will help to maintain the economic vitality of office and commercial areas. Therefore, in order to maintain the balance between protecting the character of existing residential areas, while permitting housing in strategic locations to meet the needs of tomorrow, the township should consider the following:

- Ensure Compatible Residential Infill and Expansions — In order to ensure the conservation of existing neighborhood character, the township should adopt zoning standards that regulate residential infill development and expansions. These standards should allow design flexibility while ensuring that the general dimensional standards and building materials reflect what currently exists in the neighborhood.
- Facilitate Aging-in-Place — The township should adopt zoning provisions that permit Accessory Dwelling Units (ADUs) in the lower-density single-family detached residential zoning districts. ADUs allow people the opportunity to live at home or with their extended family longer than might otherwise be possible. As with infill and expansions, development standards would be included to be sure ADUs fit in well with the surrounding neighborhood.
- Maintain Neighborhood Infrastructure and Services — The township should encourage neighborhood reinvestment by ensuring community infrastructure is well-maintained, public safety is properly supported, and that community zoning and building codes are uniformly enforced.
- Maintain Mixed Use Zoning — In order to maintain its competitive economic advantage the township needs to attract a young, educated, and skilled workforce. Therefore, the township should maintain its mixed use zoning options, including residential densities that support the transit-oriented, walkable development desired by today's younger workers. The possibility of constructing new multi-family units or townhomes also allows developers to provide more diverse housing choices that appeal to homebuyers of a variety of ages, means, and preferences, including families with children and empty-nesters who would contribute to neighborhood vitality.
- Encourage Adaptive Reuse — Upper Merion should adopt zoning standards that make it attractive for developers to reuse abandoned but architecturally significant churches, schools, or other institutional or historic buildings, and use them for housing.

LAND USE PLAN

The Land Use Plan provides the framework for the township's future land use policies. While these policies are most clearly manifested through the township's zoning code, supporting policies that relate to vehicular circulation, multi-modal connectivity, parks and open space, and natural and cultural resource preservation also contribute to maintaining the community's quality of life. By understanding existing land use patterns and properly integrating anticipated land use changes as part of a single unified plan will result in a more efficient land use pattern that preserves open space and natural resources, maintains economic vitality, and protects the neighborhood character that is so important to residents. The Land Use Plan designates appropriate areas for anticipated growth, and directs redevelopment and new development into those areas. Outside of these areas, the township seeks to protect the quality of life in its established residential areas.

Existing Land Use

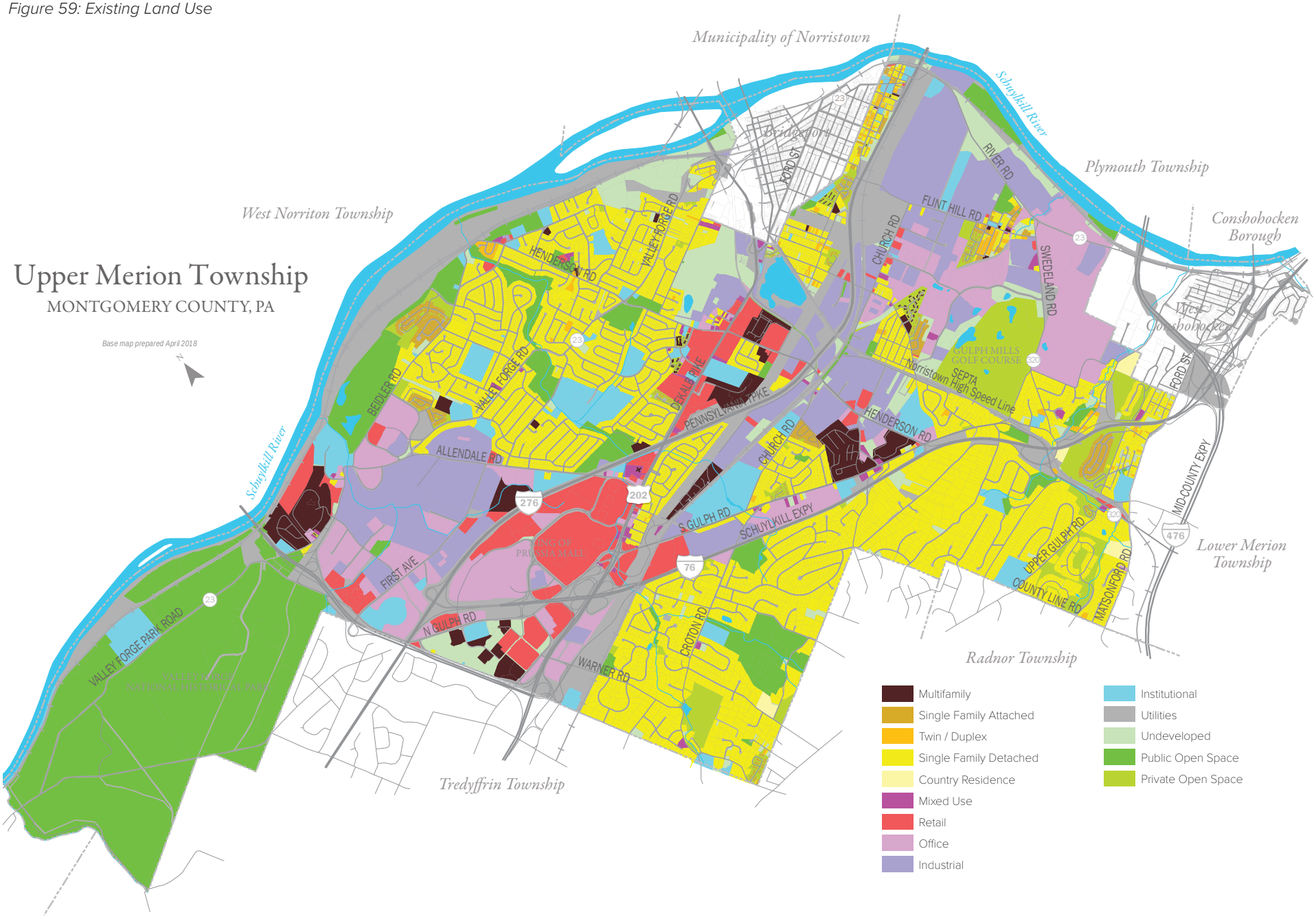
Less than 5% of Upper Merion is considered "undeveloped," essentially making the township fully developed. However, the township remains a hub for economic development and a desirable place to live and everything that happens moving toward 2040 and beyond, will involve some change to our existing land uses. To determine where and how these changes take place requires an understanding of the existing land use patterns and how they may be shaped by expected future conditions. For example, as economic conditions, and office, commercial, and industrial development patterns evolve, the township will need to provide flexibility and redevelopment opportunities to maintain its current success. However, the challenge for the township over the last 60+ years has been to balance this economic success with the needs of the existing residential community and township services.

Figure 59 depicts the current distribution of land uses across the township, and Figure 58 shows the total area of each land use category. Each

Figure 58: Land Use Area

LAND USE	ACRES	% OF TOTAL
Single-family Detached	*2732*	*27.08%*
Public Open Space	*1785*	*17.70%*
Utilities/ROW/Roads	*1281*	*12.70%*
Industrial	*1112*	*11.02%*
Office	*800*	*7.93%*
Commercial	*528*	*5.24%*
Institutional	*523*	*5.19%*
Private Open Space	*442*	*4.38%*
Undeveloped	*433*	*4.29%*
Multi-family	*271*	*2.69%*
Single-family Attached	*89*	*0.88%*
Mixed Use	*45*	*0.44%*
Twin/Duplex	*45*	*0.44%*
TOTAL	10,087.19	100%

Figure 59: Existing Land Use



of these land use categories is briefly described below.

Residential: Slightly more than 31% of the township's land area in 2017 consisted of residential land uses, with single-family detached dwellings as the predominant housing type (27%). This represents a slight change in residential land use since the 2005 Land Use Plan when just under 30% of the township was devoted to this use. While this only represents a change in about 100 acres of land, the township added over 1,100 residential units during this same time. This is possible because much of the residential growth since 2005 has taken place through less land consumptive dwelling types such as attached and multi-family units. In terms of single-family detached residential, Figure x.1 shows how areas devoted to this use are primarily concentrated into the north-central and southern sections of the township. Maintaining the residential character of these areas, as well as the other smaller dispersed areas of single-family detached neighborhoods, will be vital to maintaining a diverse residential population.

Parkland, Open Space, and Golf Courses: When considering both public open space, such as township parks and Valley Forge National Historic Park, and private open space, such as Martins Dam Club and Gulph Mills Golf Club, over 2,220 acres of the Township is identified as Open Space. The Valley Forge National Historic Park alone contains over 1,300 acres, comprising the majority of this category. Maintaining open space is the township, especially as public parks and open space, is essential for maintaining residential quality of life by providing opportunities for residents to maintain healthy lifestyles while protecting water quality and natural resources.

Utilities and Railroad Rights-of-Way: Upper Merion is crisscrossed by a variety of electric power lines, gas lines, and railroad lines. Right now, SEPTA's Norristown High Speed Line and Norfolk both operate in the Township. Besides these linear rights-of-way, this category also includes sewage plants, detention basins, and other utility facilities, such as the old quarry near DeKalb Pike, which is now used by Aqua Pennsylvania as a water source. Overall, approximately 13% of the Township, or 1,281 acres, consist of utility uses and rights of way. In addition, road rights-of-way always take a relatively high percentage of developed communities, and this holds true for Upper Merion, which is crossed by Route 76, 276, 202, and 422 corridors with their associated interchanges.

Offices and Industry: In 2017, approximately 19% of the Township consisted of offices and industry. Sometime, these two uses are easy to differentiate, such as a mid-rise office building and a fabrication facility. But at other times these two uses overlap significantly when flex space is constructed. Offices and light industry are generally concentrated in five areas; between Port Kennedy and King of Prussia, near the intersection of Routes 202 and 76, between South Gulph Road and Route 76, along the Church Road corridor,

and near Swedeland, where the Inquirer plant, the SmithKline Beecham plant, and Renaissance Corporate Center are located.

Commercial Uses: The King of Prussia Mall, containing nearly 3 million square feet of leasable area, defines King of Prussia for many people. Together with smaller shopping centers and stand-alone retail stores, commercial uses occupy over 500 acres, nearly 5.25% of the township. Concentrated around the King of Prussia Mall and along the DeKalb Pike corridor, the limits of commercial activity have not changed significantly in the township for many years. While some new commercial activity has replaced some office and industrial uses (i.e Home Depot), limiting intrusions into established residential areas has long been, and will remain, a priority for the township.

Institutional: Approximately 5% of the Township area, or 523 acres, was devoted to institutional uses. These uses consist mostly of schools, churches, and cemeteries. Given the nature of these uses, they are intermingled with the single-family detached residual developments. While it's likely that there will be no changes to the location of schools, and certainly not cemeteries, its possible church uses may change as congregations and organized religion continues to evolve. The township should evaluate options for adaptive reuse to preserve institutional structures that contribute to community character.

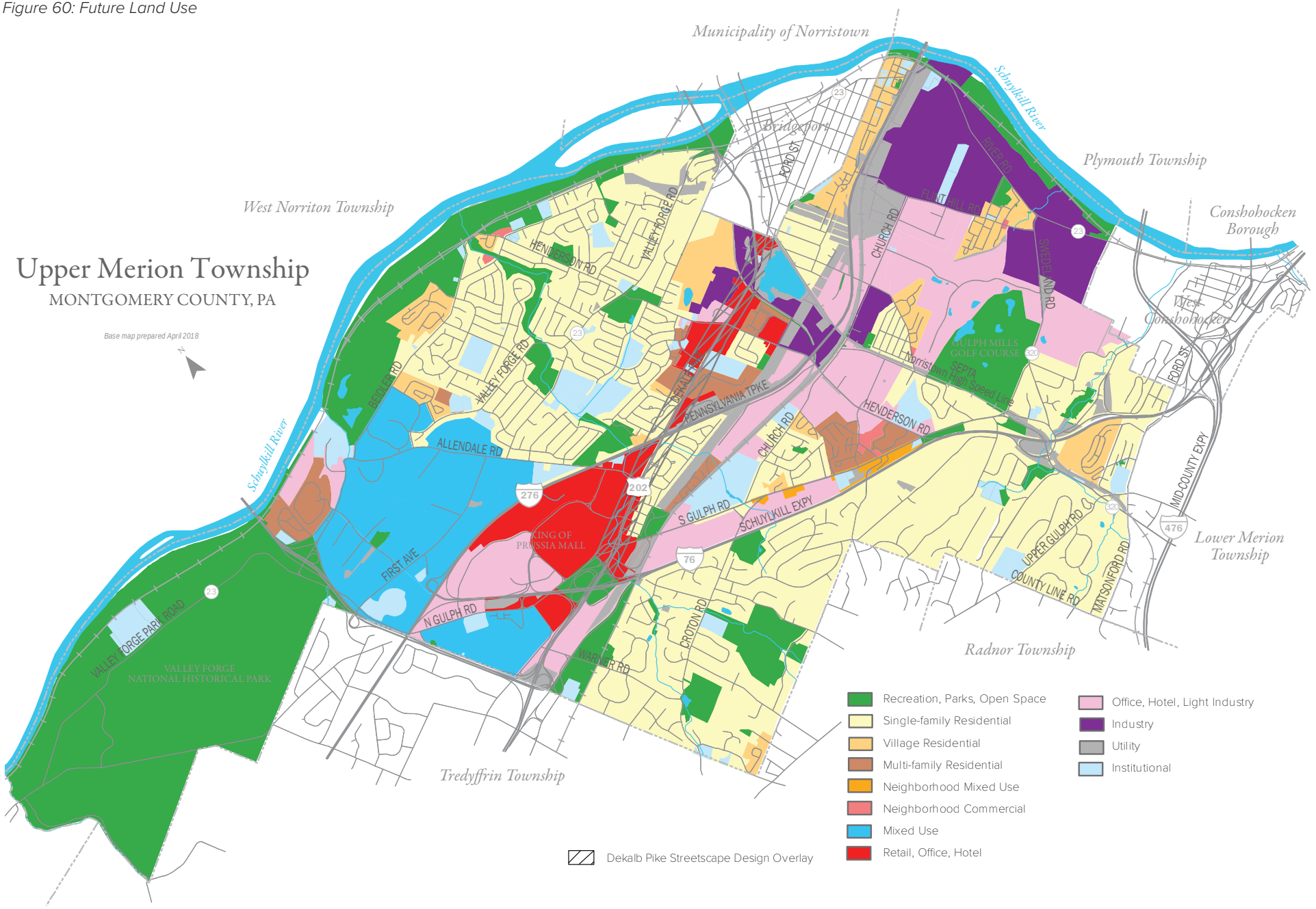
Vacant Land: In 2017, approximately four percent of the Township area, or 433 acres, was vacant or primarily undeveloped. These vacant parcels are dispersed throughout the Township, however much of the land tends to be clustered in Hughes Park, Swedeland, and the intersection of Henderson Road and DeKalb Pike. Other concentrations of vacant land are located near Bridgeport, near West Beidler Road, and near South Warner and Croton Roads.

Future Land Use

The Township's overall future land use plan, shown in Figure x.3, provides an overview of how the Township wants to preserve its existing land uses, while still providing managed opportunities for the township's land uses to evolve and develop. The Township's land use plan shows ten major uses, single family detached, village residential, multi-family residential, neighborhood mixed use, neighborhood commercial, mixed use, open space, retail, office, and industry, as well as an overlay for DeKalb Pike design standards. Two additional land uses, Utility and Institutional, are provided for additional context, but will be managed by development guidelines for one of the major uses, depending where the use is located. Each of these uses and their location in the Township is briefly described below:

Single-family detached: The single family detached land use category encompasses areas that are predominantly, if not exclusively, single-family

Figure 60: Future Land Use



detached with supporting institutional uses, such as schools and churches. Single-family detached development should have a density ranging from approximately one dwelling unit per acre in the southern portion of the Township to approximately three dwelling units per acre in the northern portion of the Township. Two large portions of Upper Merion are designated as single-family detached. The first, in the northern end of the Township, includes the Abrams, Belmont, and Merion neighborhoods while the second, predominantly located south of the Schuylkill Expressway, includes the Gulph Mills, Gypsy Hill, and Croton Woods neighborhoods.

Village residential: This land use category includes neighborhoods that may include single-family detached dwellings, but mostly consist of twins and townhouses. In addition, a limited amount of commercial, institutional, park, and apartment uses may be mixed in. Neighborhoods designated as village residential should be designed to be as walkable as possible, with direct pedestrian connections to nearby retail centers, parks, transit stops, and institutions. Generally, residential development in this category should have a density between three and seven dwelling units per acre. The older neighborhoods of Upper Merion and central portion of the Township are designated as village residential. This includes Swedesburg, King Manor, Swedeland, Hughes Park, Valley Forge Acres, and Valley Forge Homes neighborhoods. In addition, development near the Valley Forge Shopping Center and future mixed use near the intersection of Henderson Road and DeKalb Pike are designated village residential.

Multi-Family: This land use category primarily includes garden apartments, mid-rise and high-rise apartments at a density of ten or more dwelling units per acre. Gulph Mills Village, Kingwood, Marquis Apartments, Beidler Knoll, Valley Forge Towers, and Lafayette Apartments developments are all designated multi-family residential.

Neighborhood Mixed Use: This land use is focused along South Gulph Road. This ares has a variety of non-residential and higher-density residential land uses along it, these land uses tend to fit in with the low-intensity, residential and landscaped character of the corridor. This category looks to provide some non-residential opportunities along this low-intensity corridor provided it is done in consideration of interconnected driveways and parking, and proper setbacks and buffers.

Neighborhood Commercial: The township is known for its retail shopping areas, especially the malls; however, the township also wants to serve local convenience shopping needs so residents and workers can easily get the goods they need without having to drive. Maintaining the neighborhood commercial areas, including the Village Mart and Sweetbriar convenience centers, is a priority for protecting neighborhood character and encouraging walkability and healthy lifestyles.

Mixed Use: This land use designation is intended to encourage walkable, compact development

around prime transportation corridors as well as the proposed NHSL extension. A mix of apartments, elderly housing, retail stores, offices, and hotels are appropriate in these mixed use areas, with all development designed to encourage and facilitate walkability and healthy lifestyles. This land use designation primarily includes Moore Park and the Village of Valley Forge.

Retail, Office, and Hotel: This land use category includes malls, shopping centers, retail commercial stores, convenience commercial stores, business offices, professional offices, and hotels. The heart of this land use category is the King of Prussia Mall and surrounding commercial, office, and hotel properties. A secondary retail area includes the Valley Forge Shopping Center, the DeKalb Plaza Shopping Center, and the DoubleTree Hotel. Particular portions of this land use category may be appropriate for multi-family when the sites are large enough to allow for integration of the residential into the core of the site with limited impacts on existing residential areas. As with all the land use categories, the Retail, Office, and Hotel category may not be implemented through a single zoning district. Depending upon the specific location, considering highway access, adjacent land uses, and the form of existing development, it may be appropriate to implement a land use designation via multiple zoning districts.

Office, Hotel, and Light Industry: This land use category includes offices, hotels, light industrial uses, and limited warehouse uses, although offices should be the predominant land use. Light industrial and warehouse uses should have an attractive character that will blend in with office and hotel development and not detract from

these uses. Where feasible, office, hotel, and light industrial development should be designed to make walking as easy as possible, especially to nearby transit stops. In addition, supportive commercial uses, such as restaurants, banks, and service businesses, should be integrated into this land use. The King of Prussia office park, Renaissance Corporate Center, Church Road corridor, Warner Road and 202 intersection, and South Gulph Road corridor next to the Schuylkill Expressway are all designated for office, hotel, and light industrial land uses.

Industry: This land use category includes light industry, offices, warehousing, and heavy industrial facilities. Industrial uses that are not able to have a low impact, office-like character should be located in this district; however, any use in this district should be properly set back and buffered from the neighborhoods of Swedeland and Swedesburg. This industrial land use category has been applied to land between Swedesburg and West Conshohocken along the Schuylkill River.

Parkland and Open Space: This land use category includes significant Township parks, Valley Forge

National Park, golf courses, the Valley Forge Memorial Gardens Cemetery, and significant concentrations of passive open space, including stream corridors and steep slopes.

GOALS, STRATEGIES, AND PLANNING AREA RECOMMENDATIONS

Building upon the recommendations outlined in the previous chapters, while also looking at the township as a whole, a summary of the Plan's goals and strategies is listed below. Following the summary of goals and strategies, there is a detailed discussion for each planning area, including specific recommendations. As some of the Planning Areas face similar issues, there will be some repeated recommendations that should be prioritized based upon the community-wide impact they will have.

Natural Environment

A. Create a sustainable natural environment
   i. Preserve significant remaining open space
   ii. Increase tree canopy
   iii. Conserve and enhance riparian buffers and other greenways
   iv. Increase infiltration where possible, in consideration of underlying geology
   v. Encourage mixed-use development

B. Promote environmental awareness and the preservation of natural areas and resource
   i. Provide landowner workshops for backyard buffers, rain gardens, and environmental stewardship
   ii. Establish township demonstration projects for water quality, habitat creation, energy reduction, etc., including appropriate educational signage

Parks And Open Space

A. Provide access to the Schuylkill River, making it a vibrant part of the Township's open space system.
   i. Develop river front access points for public enjoyment.
   ii. Develop riverfront trail systems that interconnect to existing and proposed township and regional trail systems.

B. Create active and passive recreation opportunities as part of new land development/redevelopment projects.

C. Evaluate the current conditions and elements of each park facility and identify and prioritize the need for improvements and maintenance plans.

D. Ensure that all park facilities are safe and accommodate the physically-challenged.

E. Evaluate the staffing and funding of the parks and recreation department and recommend improvements based on findings.

F. Identify ways to enhance relationships with the various groups that use park facilities as well as how to improve the continued cooperation of the Township with the Upper Merion Area School District.

G. Involve key officials and public participants in the decision-making process and seek feedback through an extensive public outreach program.

H. Analyze the need for additional parkland and open space and make recommendations for selective acquisitions of open space.

I. Promote connectivity between parkland, open space, and surrounding neighborhoods.

J. Enhance sustainability of the township's park system.

Cultural And Historic Resources

A. Preserve and enhance remaining historic sites
   i. Evaluate reuse opportunities for the Moore/Irwin House
   ii. Amend zoning ordinance to include opportunities and incentives for adaptive reuse by utilizing façade easements, modifying zoning to provide additional uses or dimensional relief in exchange for building or façade preservation.

B. Expand connections to existing cultural and historic sites
   i. Provide direct trail connections to Valley Forge Historic Park from all portions of the community, including residential, mixed use, and commercial areas.

C. Encourage new venues for arts and cultural opportunities
   i. Enhance zoning standards for central gathering spaces in new development
   ii. Evaluate ways to create new venues within township parks

D. Enhance Local Tourism
   i. Establish a community wayfinding signage system.
   ii. Support lodging, dining, historic, and entertainment industries that serve as the foundation for tourism.

E. Enhance community character and identity
   i. Establish gateways and streetscapes that create transitions between commercial and non-commercial areas

Transportation

A. Improve traffic circulation in the township
   i. Implement improvements as recommend in the township's Act 209 Capital Improvements Plan
   ii. Update the township's Act 209 Study as needed, but at least every ten years
   iii. Continue to coordinate with PADOT, the PA Turnpike Commission, and Montgomery County regarding new turnpike interchanges at the King of Prussia Business Park and Henderson Road
   iv. Reduce the number of access points (curb-cuts) on higher classification roads and improve parking lot connectivity
   v. Continue to investigate and implement Intelligent Transportation Systems, including Adaptive Signal Control Technologies, on higher classification roads
   vi. Maintain zoning for neighborhood and convenience commercial facilities
   vii. Provide facilities to increase walking and bicycle use for shorter, local trips, and commuting to work as a means of maintaining a healthy lifestyle
   viii. Provide amenities that facilitate use of public transportation

B. Create safe, efficient and appealing pedestrian and bicycle network throughout the township
   i. Complete the township trail network to provide transportation alternatives and identify new trails that serve all neighborhoods
   ii. Create a systematic approach to filling in sidewalk gaps by identifying them, prioritizing connections in consideration of residents served and destination type, and identifying potential funding sources
   iii. Establish a wayfinding sign system that directs users (vehicular, pedestrian, and biking) to destinations in the most efficient manner, while increasing awareness of existing pedestrian and bike amenities
   iv. Reestablish green pedestrian corridors by replacing shade (street and lawn) trees within local neighborhoods, office parks and commercial areas
   v. Utilize the land development process and grant programs to implement Complete Street (accommodates multiple modes of transportation) concepts on higher classification roads
   vi. Coordinate with SEPTA and DVRPC on Safe Routes to Transit
   vii. Implement recommendations of Hughes Park Station Safe Routes to Transit Study
   viii. Coordinate with Montgomery County regarding implementation of the Walk Montco and Bike Montco Plans
   ix. Coordinate with the Upper Merion School District on Safe Routes to Schools, increasing awareness regarding the benefits of walking and biking, and maximizing the opportunities for students wishing to walk or bike to school

C. Improve the aesthetic quality along major transportation corridors
   i. Develop a Streetscape Design Guidebook for the Route 202 (DeKalb Pike) Corridor, establishing streetscape standards for greening, pedestrian oriented lighting, transit amenities, and stormwater management to be implemented by new development and redevelopment, or through grant programs for existing property owners
   ii. Develop streetscape design standards for all remaining functional road classifications, including collectors and local roads.
   iii. Continue partnerships with PADOT and KOP-BID to improve the appearance and function of the Rt. 202 commercial corridor
   iv. Preserve a low-intensity, landscaped character along South Gulph Road

D. Discourage pass-thru traffic in residential neighborhoods
   i. Reduce congestion on higher classification roadways by continuing to implement Intelligent Transportation Systems
   ii. Utilize the streetscape design standards relating to Functional Roadway Classification to establish a visually clear and rational roadway hierarchy that encourages the use of higher classification roadways for pass-thru traffic (outside the cartway strategies)
   iii. Implement traffic-calming measures, including vertical deflectors, horizontal shifts, and lane narrowing on residential streets most susceptible to pass-thru traffic. Utilization of gateway elements that complement traffic calming measures may also serve as a way to differentiate

neighborhoods (inside the cartway strategies)

E. Encourage use of public transportation
   i. Complete gaps or expand the sidewalk network to link transit stops to nearby residential, office, and commercial uses.
   ii. Increase amenities (seating, shelters, trash receptacles) at transit stops to provide a higher quality experience for transit users.
   iii. Investigate the potential of The Rambler to provide more dynamic, complementary township-wide service in conjunction with existing SEPTA service.
   iv. Develop standards for Transit Impact Studies to be prepared for larger developments that can be coordinated with SEPTA. At a minimum the studies should identify existing transit stops onsite and nearby, potential ridership (uses), missing transit amenities, and pedestrian connections from transit stops to proposed uses.
   v. Study parking issues at existing stops along the Norristown High Speed Line, identifying solutions for added parking, better pedestrian connections to existing parking, and the provision of pick-up/drop-off facilities.
   vi. Continue to coordinate with SEPTA, Montgomery County, and DVRPC regarding the proposed Norristown High Speed Line (NHSL) extension, local station area planning, and transit oriented development.
   vii. Implement recommendations of NHSL Station Area Planning to enhance pedestrian access in areas designated as potential station areas.

Community Facilities

A. Strengthen the township's stormwater management system to reduce runoff and enhance water quality.
   i. Maintain existing areas for groundwater recharge (preserve permeable surfaces), while limiting the creation of new impervious surfaces.
   ii. Provide new stormwater management facilities in areas developed without SW controls
   iii. Integrate the township's Stormwater Management Plan with the Pollution Reduction Plan for compliance with the township's MS4 permit.

B. Provide a resilient wastewater management system to meet the township's future needs
   i. Update the township Act 537 Sewage Facilities Plan, including an analysis of capacity needs in consideration of future growth within the service areas if the two treatment plants
   ii. Make continued capital investments in the township's conveyance system to reduce infiltration and inflow

C. Ensure municipal government functions is an efficient, cost-effective manner
   i. Undertake a Needs Assessment to determine the specific space needed for the proper function of all departments, including consideration of proximity to other departments and users, as well as distribution across the community.
   ii. Assess current modes of communication to ensure residents of all ages and ethnicities and are able to conveniently access community services and important community information.
   iii. Maintain Community Center and expand services, as appropriate, to serve township residents.
   iv. Conduct a sustainability audit and sustainability plan. The sustainability audit will examine the municipal ordinances to see how well they promote sustainability and will recommend improvements. The sustainability plan will follow the audit, making detailed recommendations to ensure a healthy environment and community well into the future. Such plans may also address sustainability in areas of special interest for a municipality, such as healthy lifestyles, infrastructure, municipal budgeting, economic development or other areas.

Housing

A. Ensure Compatible Residential Infill and Expansions
   i. Adopt zoning standards regulating residential infill and expansions to ensure new development fits in with and helps to conserve the existing neighborhood.

B. Facilitate Aging-in-Place
   i. Adopt zoning standards that allow Accessory Dwelling Units in single-family

residential zoning districts, giving people the opportunity to live at home or with family longer than might otherwise be possible.

ii. Ensure adequate zoning opportunities for 55+ Communities that will provide updated housing that makes it easier for residents to stay in their home longer as they age.

C. Maintain housing affordability across all housing types
   i. Maintain residential zoning districts preserve the existing housing stock.
   ii. Continue to permit a wide variety of residential uses, including the creation of innovative live/work opportunities in mixed use and light industrial areas.
   iii. Continue to permit higher density housing in areas with convenient access to public transportation.

D. Encourage Adaptive Reuse
   i. Adopt zoning standards that incentivize the reuse abandoned but architecturally significant churches, schools, or other institutional buildings for residential uses

Future Land Use – Economic Vitality

A. Provide incentives for reinvestment through redevelopment/reuse
   i. Direct redevelopment to existing business and industrial areas
   ii. Continue to support Mixed Use development in appropriate locations, including mixed use with the same building, and in areas currently zoned for shopping center uses

B. Enhance commercial design to be aesthetically pleasing and to establish a sense of place
   i. Use zoning and/or design guidelines to encourage attractive development in commercial areas
   ii. Pursue streetscape design standards along DeKalb Pike (Rt. 202) to ensure new development and redevelopment provides a walkable, attractive commercial corridor.

C. Improve appearance of Township gateways
   i. Assess primary gateways at interchanges, and major roads entering the Township for improvement opportunities, including welcome or wayfinding signage, public art, landscaping and/or unique streetscaping.

Future Land Use – Neighborhood Preservation And Enhancement

A. Protect and maintain existing residential neighborhoods
   i. Implement preservation policies that buffer residential areas, limit commercial encroachment, including design standards for development near residential areas for signage, lighting, outdoor storage etc.
   ii. Identify traffic calming strategies between arterials and collector roads and the local road network to discourage regional and non-residential traffic from using local roads.
   iii. Enhance public safety in neighborhoods by assessing patrol schedules, the use of neighborhood watch programs, and community education (i.e. keeping car doors locked).
   iv. Improve appearance of neighborhood gateways.
      a. Assess gateways to the township's established residential communities for improvement opportunities, including traffic calming devices, public art, landscaping, and/or unique streetscaping.

B. Promote healthy lifestyles
   i. Maintain the Upper Merion Farmers Markets and Community Gardens
   ii. Support opportunities for residents to pursue suburban agriculture projects
   iii. Consider opportunities for suburban agriculture, including backyard apiaries, gardening, composting, and the keeping of hens, with appropriate limits

IMPLEMENTATION

The following tables summarize the recommendations and strategies detailed in the previous chapters. The Tables, which begin on the following page, organize the recommendations and strategies in the same order that they are discussed within the plan, beginning with the Natural Environment. The Tables also indicate the lead agency for implementation, type of implementation strategy (e.g., regulatory control, capital investment), priority and timing of the strategy, and, lastly, if the strategy relates to any specific Planning Areas.

TABLE ABBREVIATIONS

Lead Agency

BOS – Board of Supervisors

ECDC – Economic and Community Development Committee

MCAB – Media Communications Advisory Board

PC – Planning Commission

PSAB – Public Safety Advisory Board

TA – Transportation Authority

EAC – Environmental Advisory Board

HC – Historic Commission

P&R – Parks and Recreation Board

PW – Public Works

STBC – Shade Tree and Beautification Commission

Priority

Immediate: 1-2 years

Short-term: 2-5 years

Medium-term: 5-10 years

Long-term: 10+ years

Figure ___: Upper Merion Projects Included in the 2017-2020 Transportation Improvement Program (TIP)

NATURAL ENVIRONMENT

Recommendation: Create a sustainable natural environment				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Conserve and enhance riparian buffers and other greenways	EAC PC P&R	✓ Education & Outreach ✓ Regulatory Control ✓ Capital Improvement	Immediate	All
Increase infiltration where possible, in consideration of underlying geology	PC PW	✓ Regulatory Control ✓ Planning ✓ Capital Improvement	Short-term	All
Encourage mixed-use development in appropriate areas	BOS	✓ Regulatory Control	Short-term	1, 3, 9
Preserve significant remaining open space	P&R	✓ Capital Improvement ✓ Regulatory Control	Medium-term	All
Increase tree canopy	EAC STBC P&R	✓ Regulatory Control ✓ Education & Outreach	Medium-term	All
Recommendation: Promote environmental awareness and the preservation of natural areas and resource				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Provide landowner workshops for backyard buffers, rain gardens, and environmental stewardship	EAC	✓ Education & Outreach	Medium-term	All
Establish township demonstration projects for water quality, habitat creation, energy reduction, etc., including appropriate educational signage	EAC PW	✓ Capital Improvement	Medium-term	

PARKS AND OPEN SPACE (REFER TO COMPREHENSIVE OPEN SPACE AND RECREATION PLAN FOR ALL SPECIFIC STRATEGIES)

Strategy	Lead Agency	Implementation Type	Priority	Potentional Planning Areas
Recommendation: Provide access to the Schuylkill River, making it a vibrant part of the Township's open space system				
Develop river front access points for public enjoyment	P&R	✓ Planning ✓ Capital Improvement	Medium-term	1, 2, 6, 9
Develop riverfront trail systems that interconnect to existing and proposed township and regional trail systems	P&R	✓ Planning ✓ Capital Improvement	Long-term	1, 2, 6, 9
Recommendation: Create active and passive recreation opportunities as part of new land development/redevelopment projects.				
Recommendation: Evaluate the current conditions and elements of each park facility and identify and prioritize the need for improvements and maintenance plans				
Recommendation: Ensure that all park facilities are safe and accommodate the physically-challenged				
Recommendation: Evaluate the staffing and funding of the parks and recreation department and recommend improvements based on findings				
Recommendation: Identify ways to enhance relationships with the various groups that use park facilities as well as how to improve the continued cooperation of the Township with the Upper Merion Area School District				
Recommendation: Involve key officials and public participants in the decision-making process and seek feedback through an extensive public outreach program				
Recommendation: Analyze the need for additional parkland and open space and make recommendations for selective acquisitions of open space				
Recommendation: Promote connectivity between parkland, open space, and surrounding neighborhoods				
Recommendation: Enhance sustainability of the township's park system				

PARKS AND OPEN SPACE CONTINUED

CULTURAL AND HISTORIC RESOURCES

Recommendation: Preserve and enhance remaining historic sites

Strategy	Lead Agency	Implementation Type	Priority	Potentional Planning Areas
Evaluate reuse opportunities for the Moore/Irwin House	P&R HC	✓ Planning ✓ Capital Improvement	Short-term	1
Amend zoning ordinance to include opportunities and incentives for adaptive reuse by utilizing façade easements, modifying zoning to provide additional uses or dimensional relief in exchange for building or façade preservation	PC HC	✓ Regulatory Control	Medium-term	All

Recommendation: Expand connections to existing cultural and historic sites

Strategy	Lead Agency	Implementation Type	Priority	Potentional Planning Areas
Provide direct trail connections to Valley Forge Historic Park from all portions of the community, including residential, mixed use, and commercial areas	P&R PC	✓ Planning ✓ Capital Improvement	Immediate	1, 3

Recommendation: Encourage new venues for arts and cultural opportunities

Strategy	Lead Agency	Implementation Type	Priority	Potentional Planning Areas
Enhance zoning standards for central gathering spaces in new development	PC	✓ Regulatory Control	Medium-term	All
Evaluate ways to create new venues within township parks	P&R	✓ Planning ✓ Capital Improvement	Long-term	All

Recommendation: Enhance Local Tourism

Strategy	Lead Agency	Implementation Type	Priority	Potentional Planning Areas
Support lodging, dining, historic, and entertainment industries that serve as the foundation for tourism	ECDC	✓ Regulatory Control ✓ Education & Outreach	Short-term	All
Establish a community wayfinding signage system	ECDC	✓ Planning ✓ Capital Improvement	Long-term	All

Recommendation: Enhance community character and identity

Strategy	Lead Agency	Implementation Type	Priority	Potentional Planning Areas
Establish gateways and streetscapes that create transitions between commercial and non-commercial areas	PW	✓ Planning ✓ Capital Improvement	Medium-term	1

TRANSPORTATION

Recommendation: Improve traffic circulation in the township				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Maintain zoning for neighborhood and convenience commercial facilities	BOS	✓ Regulatory Control	Immediate	2, 5, 6, 9
Reduce the number of access points (curb-cuts) on higher classification roads and improve parking lot connectivity	PC	✓ Regulatory Control	Short-term	All
Continue to investigate and implement Intelligent Transportation Systems, including Adaptive Signal Control Technologies, on higher classification roads	TA	✓ Planning ✓ Capital Improvement	Short-term	3, 4, 5
Provide facilities to increase walking and bicycle use for shorter, local trips, and commuting to work as a means of maintaining a healthy lifestyle	PC PW	✓ Regulatory Control ✓ Capital Improvement ✓ Private Investment	Short-term	All
Implement improvements as recommend in the township's Act 209 Capital Improvements Plan	TA	✓ Planning ✓ Capital Improvement	Short-term	All
Provide amenities that facilitate use of public transportation	PC PW	✓ Regulatory Control ✓ Capital Improvement ✓ Private Investment	Short-term	All
Update the township's Act 209 Study as needed, but at least every ten years	TA	✓ Regulatory Control	Medium-term	All
Continue to coordinate with PADOT, the PA Turnpike Commission, and Montgomery County regarding new turnpike interchanges at the King of Prussia Business Park and Henderson Road	TA	✓ Planning	Long-term	1, 5
Recommendation: Create safe, efficient and appealing pedestrian and bicycle network throughout the township				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Coordinate with Montgomery County regarding implementation of the Walk Montco and Bike Montco Plans	ECDC BOS	✓ Regulatory Control ✓ Education & Outreach	Short-term	All
Establish a wayfinding sign system that directs users (vehicular, pedestrian, and biking) to destinations in the most efficient manner, while increasing awareness of existing pedestrian and bike amenities	ECDC	✓ Planning ✓ Capital Improvement	Medium-term	All
Coordinate with SEPTA and DVRPC on Safe Routes to Transit, including implementation of Hughes Park Station Safe Routes to Transit Study	PW	✓ Planning ✓ Capital Improvement	Medium-term	5, 9
Coordinate with the Upper Merion School District on Safe Routes to Schools, increasing awareness regarding the benefits of walking and biking, and maximizing the opportunities for students wishing to walk or bike to school	PW	✓ Planning ✓ Capital Improvement	Medium-term	All
Complete the township trail network to provide transportation alternatives and identify new trails that serve all neighborhoods	P&R	✓ Planning ✓ Capital Improvement	Long-term	All
Reestablish green pedestrian corridors by replacing shade (street and lawn) trees within local neighborhoods, office parks and commercial areas	EAC PC	✓ Regulatory Control ✓ Education & Outreach ✓ Private Investment	Long-term	All

TRANSPORTATION CONTINUED

Recommendation: Create safe, efficient and appealing pedestrian and bicycle network throughout the township				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Utilize the land development process and grant programs to implement Complete Street concepts on higher classification roads	PC	✓ Regulatory Control ✓ Planning	Long-term	All
Create a systematic approach to filling in sidewalk gaps by identifying them, prioritizing connections in consideration of residents served and destination type, and identifying potential funding sources	PW	✓ Planning ✓ Capital Improvement	Long-term	All
Recommendation: Discourage pass-thru traffic in residential neighborhoods				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Reduce congestion on higher classification roadways by continuing to implement Intelligent Transportation Systems	TA	✓ Capital Improvement	Short-term	All
Utilize the streetscape design standards relating to Functional Roadway Classification to establish a visually clear and rational roadway hierarchy that encourages the use of higher classification roadways for pass-thru traffic (outside the cartway strategies)	PW TA	✓ Planning ✓ Capital Improvement	Long-term	All
Implement traffic-calming measures, including vertical deflectors, horizontal shifts, and lane narrowing on residential streets most susceptible to pass-thru traffic. Utilization of gateway elements that complement traffic calming measures may also serve as a way to differentiate neighborhoods (inside the cartway strategies)	PW TA	✓ Planning ✓ Capital Improvement	Long-term	All
Recommendation: Encourage use of public transportation				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Continue to coordinate with SEPTA, Montgomery County, and DVRPC regarding the proposed Norristown High Speed Line (NHSL) extension, local station area planning, and transit oriented development	BOS	✓ Planning	Immediate	1, 3, 5
Investigate the potential of The Rambler to provide more dynamic, complementary township-wide service in conjunction with existing SEPTA service	PW	✓ Planning ✓ Education & Outreach	Medium-term	All
Study parking issues at existing stops along the Norristown High Speed Line, identifying solutions for added parking, better pedestrian connections to existing parking, and the provision of pick-up/drop-off facilities	PW	✓ Planning ✓ Capital Improvement	Medium-term	5, 6, 9
Implement recommendations of NHSL Station Area Planning to enhance pedestrian access in areas designated as potential station areas	PW	✓ Capital Improvement	Medium-term	1, 3, 5
Complete gaps or expand the sidewalk network to link transit stops to nearby residential, office, and commercial uses	PW	✓ Regulatory Control ✓ Planning ✓ Capital Improvement	Medium-term	All
Increase amenities (seating, shelters, trash receptacles) at transit stops to provide a higher quality experience for transit users	PW	✓ Capital Improvement ✓ Private Development	Medium-term	All

COMMUNITY FACILITIES

Recommendation: Strengthen the township's stormwater management system to reduce runoff and enhance water quality				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Integrate the township's Stormwater Management Plan with the Pollution Reduction Plan for compliance with the township's MS4 permit	PW	✓ Planning	Short-term	All
Provide new stormwater management facilities in areas developed without SW controls, including the establishment of proper funding mechanisms	PW	✓ Capital Improvement	Short-term	All
Maintain existing areas for groundwater recharge (preserve permeable surfaces), while limiting the creation of new impervious surfaces	PW EAC	✓ Regulatory Control ✓ Education & Outreach	Medium-term	All
Recommendation: Provide a resilient wastewater management system to meet the township's future needs				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Update the township Act 537 Sewage Facilities Plan, including an analysis of capacity needs in consideration of future growth within the service areas if the two treatment plants	PW	✓ Planning	Short-term	All
Make continued capital investments in the township's conveyance system to reduce infiltration and inflow	PW	✓ Capital Improvements	Medium-term	All
Recommendation: Ensure municipal government functions is an efficient, cost-effective manner				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Maintain Community Center and expand services, as appropriate, to serve township residents	P&R	✓ Planning ✓ Capital Improvement	Immediate	All
Assess current modes of communication to ensure residents of all ages and ethnicities and are able to conveniently access community services and important community information	MCAB	✓ Education & Outreach	Short-term	All
Undertake a Needs Assessment to determine the specific space needed for the proper function of all departments, including proximity to other departments and users, as well as distribution across the community	PW	✓ Planning ✓ Capital Improvement	Medium-term	All
Conduct a sustainability audit and sustainability plan. The sustainability audit will examine the municipal ordinances to see how well they promote sustainability and will recommend improvements. The sustainability plan will follow the audit, making detailed recommendations to ensure a healthy environment and community well into the future. Such plans may also address sustainability in areas of special interest for a municipality, such as healthy lifestyles, infrastructure, municipal budgeting, economic development or other areas	PW	✓ Planning	Medium-term	All

HOUSING

Recommendation: Ensure Compatible Residential Infill and Expansions				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Adopt zoning standards regulating residential infill and expansions to ensure new development fits in with and helps to conserve the existing neighborhood	PW	✓ Regulatory Controls	Medium-term	All
Recommendation: Facilitate Aging-in-Place				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Adopt zoning standards that allow Accessory Dwelling Units in single-family residential zoning districts, giving people the opportunity to live at home or with family longer than might otherwise be possible	PW	✓ Regulatory Controls	Short-term	All
Ensure adequate zoning opportunities for 55+ Communities that will provide updated housing that makes it easier for residents to stay in their home longer as they age	PW	✓ Regulatory Controls	Short-term	All
Recommendation: Maintain housing affordability across all housing types				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Maintain residential zoning districts preserve the existing housing stock	PW	✓ Regulatory Controls	Immediate	All
Continue to permit a wide variety of residential uses, including the creation of innovative live/work opportunities in mixed use and light industrial areas	PW	✓ Regulatory Controls	Immediate	All
Continue to permit higher density housing in areas with convenient access to public transportation	PW	✓ Regulatory Controls	Immediate	All
Recommendation: Encourage Adaptive Reuse				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Adopt zoning standards that incentivize the reuse abandoned but architecturally significant churches, schools, or other institutional buildings for residential uses	PW	✓ Regulatory Controls	Short-term	All

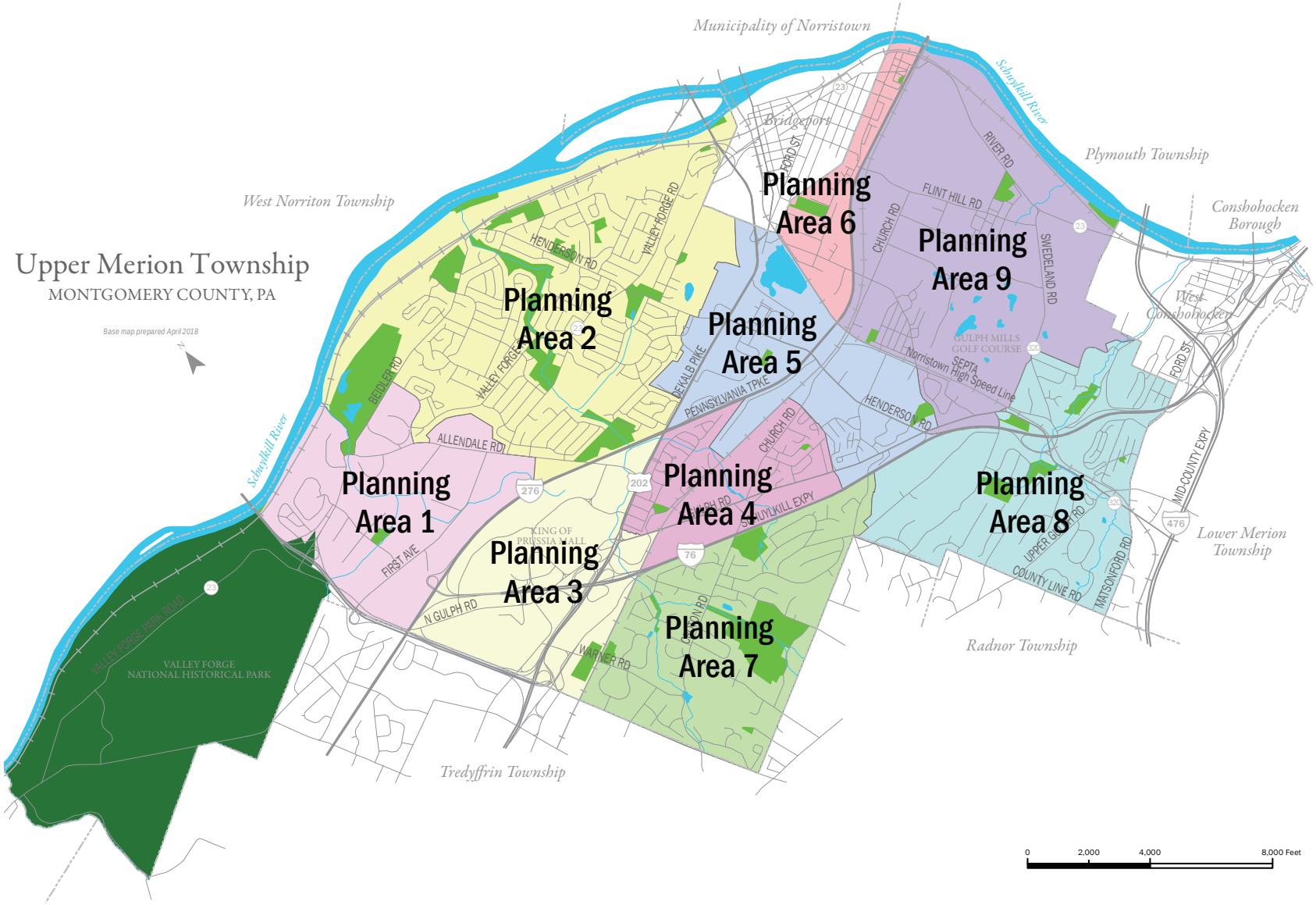
FUTURE LAND USE – ECONOMIC VITALITY

Recommendation: Provide incentives for reinvestment through redevelopment/reuse				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Direct redevelopment to existing business and industrial areas	PW	✓ Regulatory Controls	Immediate	All
Continue to support Mixed Use development in appropriate locations, including mixed use with the same building, and in areas currently zoned for shopping center uses	PW	✓ Regulatory Controls	Immediate	All
Recommendation: Enhance commercial design to be aesthetically pleasing and to establish a sense of place				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Use zoning and/or design guidelines to encourage attractive development in commercial areas	PW PC	✓ Planning ✓ Regulatory Controls	Short-term	All
Pursue streetscape design standards along DeKalb Pike (Rt. 202) to ensure new development and redevelopment provides a walkable, attractive commercial corridor	PW	✓ Planning ✓ Regulatory Controls	Short-term	All
Recommendation: Improve appearance of Township gateways				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Assess primary gateways at interchanges, and major roads entering the Township for improvement opportunities, including welcome or wayfinding signage, public art, landscaping and/or unique streetscaping	PW	✓ Planning ✓ Capital Improvement ✓ Private Development	Medium-term	All

FUTURE LAND USE – NEIGHBORHOOD PRESERVATION AND ENHANCEMENT

Recommendation: Protect and maintain existing residential neighborhoods				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Enhance public safety in neighborhoods by assessing patrol schedules, the use of neighborhood watch programs, and community education (i.e. keeping car doors locked)	PSAB	✓ Education and Outreach	Short-term	All
Implement preservation policies that buffer residential areas, limit commercial encroachment, including design standards for development near residential areas for signage, lighting, outdoor storage etc	PW PC	✓ Planning ✓ Regulatory Controls	Medium-term	All
Identify traffic calming strategies between arterials and collector roads and the local road network to discourage regional and non-residential traffic from using local roads	PW TA	✓ Planning ✓ Capital Improvement	Long-term	All
Improve appearance of neighborhood gateways to the township's established residential communities, including traffic calming devices, public art, landscaping, and/or unique streetscaping	PW	✓ Planning ✓ Capital Improvement	Long-term	All
Recommendation: Promote healthy lifestyles				
Strategy	**Lead Agency**	**Implementation Type**	**Priority**	**Potentional Planning Areas**
Maintain the Upper Merion Farmers Markets and Community Gardens	ECDC	✓ Education & Outreach	Immediate	All
Support opportunities for residents to pursue suburban agriculture projects	EAC	✓ Education & Outreach	Immediate	All
Consider opportunities for suburban agriculture, including backyard apiaries, gardening, composting, and the keeping of hens, with appropriate limits	PW EAC	✓ Regulatory Controls ✓ Education & Outreach	Immediate	All

Upper Merion Township Neighborhood Planning Area Map



PLANNING AREAS

For the purposes of this Plan, the Township was divided into nine planning areas:

1. Planning Area 1, Moore Park, is located in the northwestern corner of the Township and includes Moore Park, the former King of Prussia Office Park
2. Planning Area 2, Abrams Run/Belmont Hills, is located along the north-central edge of the Township, and includes the highest concentration of residential neighborhoods in the Township along with several institutional uses, including the Township Building, Community Center, Candlebrook Elementary, Caley Elementary, and Upper Merion Middle School and High School.
3. Planning Area 3, Commercial Area, includes the King of Prussia Mall and the Village at Valley Forge.
4. Planning Area 4, South Gulph, is located in the center of the Township and includes sections of DeKalb Pike and South Gulph Road. This area includes commercial office uses and several pockets of residential developments.
5. Planning Area 5, Henderson Road, is located in the eastern-central portion of the Township and includes a portion of the commercial corridor along DeKalb Pike and office uses along Henderson Road between DeKalb Pike and South Gulph Road.
6. Planning Area 6, Swedesburg/King Manor, is a narrow section located just south of Bridgeport Borough that generally includes more dense residential neighborhoods along with Bridgeport Elementary School.
7. Planning Area 7, Croton Woods, is located in the hilly southwestern portion of the Township, and is comprised of many residential neighborhoods and parks, including the expansive McKaig Nature Center.
8. Planning Area 8, Gypsy Hills/Gulph Mills, is located in the hilly southeastern section of the Township, includes residential areas, a portion of the Norristown High Speed Line, and the Schuylkill Expressway.
9. Planning Area 9, Swedeland, is located on the eastern edge of the Township and has two pocket neighborhoods, Swedeland and Hughes Park, and large industrial uses including the FedEx property.

The recommendations of this plan will be concentrated and focused in these planning areas

PLANNING AREA 1 - MIXED USE

Planning Area 1 is located adjacent to Valley Forge Park National Historic Park in the northwestern section of the Township. Moore Park, a mixed use zoned area comprising a large office park, is completely within this planning area. Heuser Park, one of the largest recreational parks in the Township is partially within this area as well. The Moore/Irwin House is located centrally within Moore Park and presents an opportunity for expansion as a central park open space area or other amenity to the growing mixed use development. The Moore/Irwin House served as quarters for General Muhlenberg during the 1777-1778 encampment at Valley Forge and the estate includes a three-story building, cabin, arboretum, and natural area. The property is currently vacant and presents an opportunity for future use.

Approximately 10% of the Township's population, a total of 2,708 people, lives in this planning area. A total of 1,787 housing units are located here, with 24% of them being owner-occupied. This number is due to most units being multifamily in this planning area and this percentage is relatively low overall in comparison to other planning areas in the Township. This area has the smallest average household size in the Township at 1.73 persons per household, which is consistent with the high level of multifamily housing present here. A relatively small proportion of the overall population lives in this area and there is a low level of residential development.

Planning Area 1 is mostly within the Trout Creek watershed but its northern boundary is within the Schuylkill River watershed. Trout Creek runs through the center of Moore Park and drains into the Schuylkill River and branches off to the east and west. The main branch of the creek is relatively well buffered in this area but riparian buffers along its smaller tributaries are lacking. The portions of Trout Creek in this area are impaired and not attaining PA DEP's water quality standards requiring mitigation by the Township.

The Valley Forge Casino and Convention Center is also located here as well as many other large employers including GeoBlue, Radial, Arkema, CSL Behring, and First Quality Enterprises. Moore Park is home to approximately 20,000 employees, 63,000 square feet of corporate meeting and event space, five hotels, and over 3.6 million square feet of commercial and industrial space. A large residential complex, Valley Forge Towers is located in the northwest corner of the planning area. The main roadways through the area include Allendale Road, First Avenue, and Valley Forge Road. SEPTA Bus Routes 99 and 125 serve this area and travel to Norristown/Phoenixville and Center City Philadelphia. This area is bordered by

Figure 61: Mixed Use Planning Area Water Quality

and has easy access to US 422 and I-76 and the PA Turnpike. This transportation infrastructure helps to support Moore Park as an employment hub for King of Prussia and the Philadelphia region by connecting it to the surrounding area.

2040 RECOMMENDATIONS

Moore Park Master Plan

Planning Area 1 is largely comprised of the newly renamed Moore Park office area. Previously named the King of Prussia Industrial Park, new mixed use zoning was adopted for this area in 2014 and necessitated renaming it to more appropriately reflect the future mixed use concept for the area. Because of the size and significance of the area, a master plan should be done to assess the state of the park and improvements that should be made to enhance the overall experience of users of the park. Considerations for the master plan may include: creating an interconnected network of streets with a clear hierarchy that provides multiple connections within and through the mixed use area; providing infrastructure for walkability, including expansion of the sidewalk network, creation of a multi-use trail system, including full implementation of the linear park along First Avenue and Moore Road; enhancing bikability by appropriately providing dedicated bike lanes and creating a multi-use trail system; utilizing and expanding upon the Moore/Irwin House Open Space to establish a central park area or other amenity for the mixed use area; establishing a first class transit experience by enhancing bus stops to include shelters at every stop, and safe, direct connections between bus stops and pedestrian destinations (i.e. residential, office, and commercial uses); and design and implement a wayfinding signage system to brand the Mixed Use Area and directs users to

specific destinations within the Mixed Use Area. This Master Plan should be completed to ensure new development and redevelopment of the Park will occur in a way that will enhance vehicular and pedestrian connectivity, streetscapes and quality of life.

Transportation

Two capital improvement projects are proposed for this planning area which includes intersection improvements at West Valley Forge/Mancill Mill Road/Beidler Road and West Valley Forge Road and North Gulph Road. These projects would help to improve the levels of service (LOS) at these intersections. This will ensure that vehicles are able to move through the area as efficiently as possible. The proposed King of Prussia Rail Line as an extension of the Norristown High Speed Line would enter the planning area as it crosses the PA Turnpike and American Avenue and continues to travel along First Avenue and end at the Valley Forge Convention Center and Casino. Continued coordination with SEPTA, the County, and DVRPC is necessary to ensure that this project moves forward with as much stakeholder input as possible. The Township should also coordinate with the County, KOP-BID, DVRPC, and the Turnpike Commission to support and implement the construction of a new Turnpike interchange with direct access into the Business Park at Freedom Business Center Drive/Moore Road. A feasibility study should also be done for the creation of new Rt. 422 access ramps (westbound off and westbound on only) near Freedom Business Center Drive. These would assist in directing commuter traffic to and from the Township in a more direct fashion.

Demonstration Project of First Avenue Linear Park (KOP-BID)

Turnpike interchange at Freedom Business Center Drive/Moore Road

Because Moore Park is an employment hub in the Township, enhancements to the transit experience could have a significant impact in this area by providing alternative modes of travel, improving the experience of existing transit, and potentially reducing traffic as a result. Through coordination with GVFTMA and KOP-BID, additional bus shelters and pedestrian connections to stops could be placed throughout the Mixed Use Area. This would improve both the level of and perception of safety for bus users. As more residential and commercial land uses are developed within this area, coordination with SEPTA is necessary to manage more evening and weekend service as well as to develop standards for a Transit Impact Study. SEPTA is currently studying potential reconfigurations of the 99 Bus Route. Shifting a portion of this service to another route would shorten travel times, creating a more compact 99 route that would effectively have more frequent service with a shorter ride time.

Environmental Quality

Trout Creek runs through this planning area and opportunities exist to restore degraded streambanks and establish riparian buffers where they do not exist or only exist partially. Restoration of streambanks and replanting buffers will help to reduce erosion, which is one of the main causes of water quality decline in this area. The Township should continue to review and implement the Township's Stormwater Study and MS4 Pollution Reduction Plan and evaluate what improvements can improve water quality and stream health in this area. Increasing tree canopy coverage overall through the implementation of green parking standards in existing developments would help to treat stormwater runoff before entering the ground as well as to counter urban heat island effects. Tree canopy can also provide aesthetic improvements making Moore Park a more pleasant place to work and live. Additional stormwater benefits could come from the adoption of standards for the greening of parking lots as a part of new/redevelopment, including the incorporation of stormwater controls. This is important for this area as it has the potential for redevelopment through the new mixed use zoning standards.

Example of Stream Erosion

Community Connections

Future changes in land use can be expected from the mixed use zoning of this area and proposed extension of the Norristown High Speed Line (NHSL). Completing the sidewalk system throughout this area by continuing to implement the Mixed Use Zoning to require sidewalks for new development and redevelopment as well as securing grants to fill in gaps in the network will help to make this area appealing and walkable. The First Avenue Linear park system along First Avenue and Moore Road is currently in construction. The Township should continue to implement the Mixed Use Zoning for the completion of this park through coordination with the KOP-BID where necessary.

Two of the potential stops of the proposed NHSL extension are proposed for this area (one on 1st Avenue near Clark Avenue and one at the Valley Forge Convention Center & Casino). Continued coordination with the County, DVRPC, and SEPTA should be done in the planning process especially for the enhancement of pedestrian connections around the proposed rail stations as recommended in the Station Area Plan. Norfolk Southern owns rights-of-way through the business park, which through coordination could potentially be used for the establishment of a trail system which could create pedestrian connections within the Moore Park area and to destinations outside of it.

Figure 62: Riparian Buffer Map

PLANNING AREA 2 - ABRAMS/BELMONT

Planning Area 2 is located centrally along the northern border of the Township. Caley Elementary, Candlebrook Elementary, and Upper Merion Middle and High Schools are located here in addition to the Township Building and Community Center. Heuser Park, one of the largest recreational parks in the Township is partially within this area along with Bob Case Park, Belmont Park, Leo M. Ross Park, Nor-View Farm, Sweetbriar Park, and Walker Park. Funding was secured in 2018 to construct a trail project along Crow Creek, connecting several parks, surrounding neighborhoods, and schools.

Approximately 38% of the Township's population, a total of 10,635 people, lives in this planning area. This area has the largest average household size in the Township at 2.74 persons per household. A total of 3,961 housing units are located here, with 87% of them being owner-occupied. This is the largest residential, family-centric planning area in the Township and contains the largest percentage of the population.

Planning Area 2 is within the Crow Creek watershed but portions along its northern boundary are within the Schuylkill River watershed. Crow Creek runs south to north through the center of the planning area towards the Schuylkill River. The creek is relatively well buffered in this area but riparian buffers are missing on one side of the creek in some locations. The portions of Crow Creek in this area are impaired and not attaining PA DEP's water quality standards due to levels of stormwater runoff and siltation. See Figures 63 and 64 for riparian buffers and stream impairment.

Most of this planning area is comprised of well-established residential neighborhoods which are mostly single family detached homes. The main roadways through the area include Valley Forge Road, Beidler Road, and Henderson Road. SEPTA Bus Routes 99 and 125 border this area on the west and southern boundary and travel to Phoenixville and Center City Philadelphia.

Figure 63: Abrams/Belmont Planning Area Water Quality

2040 RECOMMENDATIONS

Transportation

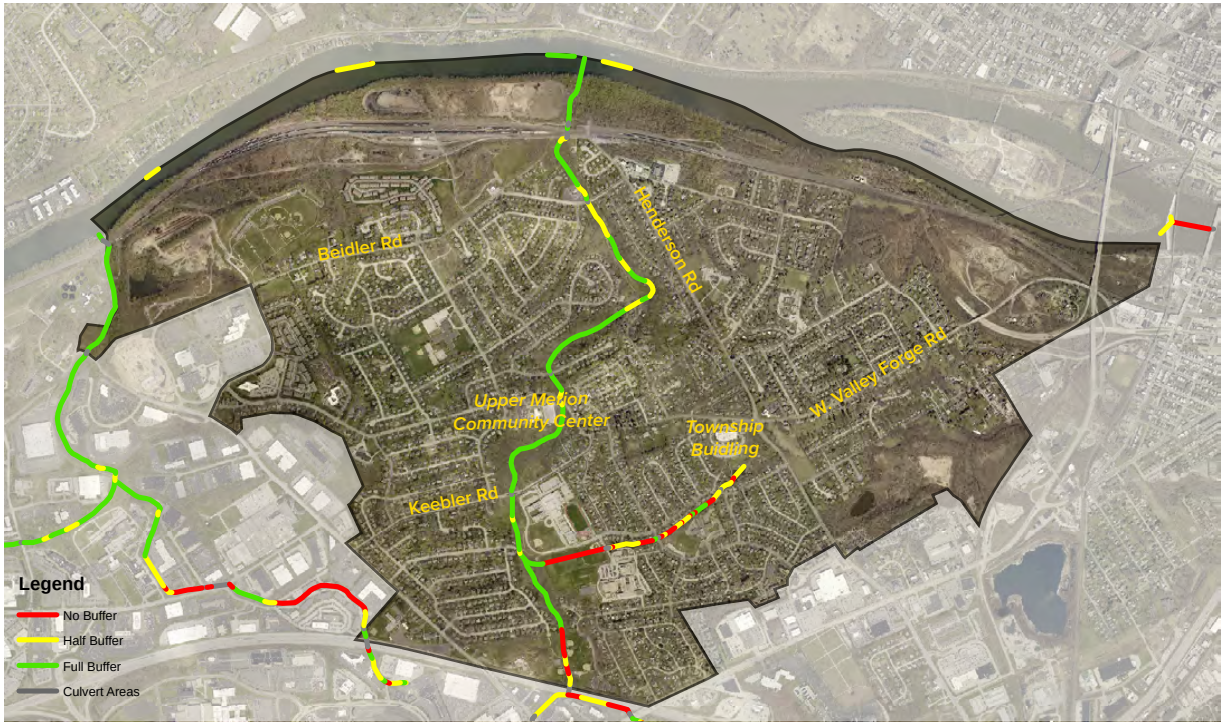
Several transportation improvements are recommended in the Abrams/Belmont Planning Area to improve the flow of traffic throughout the area and the safety of drivers, pedestrians and cyclists and two capital improvement projects are proposed here. One of which is to optimize the traffic signal at Valley Forge and Henderson Road. The other project partially located in this area is the extension of Saulin Blvd at Dekalb Pike to Prince Frederick Street at Henderson Road. This would provide an alternative option for drivers traveling to the northern side of the Township and would allow them to avoid traffic along Dekalb Pike, which is a highly trafficked area. A feasibility study is recommended for the extension and downsizing of the unfinished Schuylkill Parkway to provide a neighborhood-level connection between this Planning Area and Bridgeport Borough, including integration of bike and pedestrian infrastructure and amenities. Complete streets concepts should be implemented for all Collectors (Henderson, Beidler, and Keebler Roads) and Minor Arterials (Valley Forge Road) to integrate sidewalks, bike lanes, crosswalks, and neighborhood-level traffic calming measures.

Environmental Quality

Many streams in the Township are lacking riparian buffers and do not meet the PA DEP's level for water quality standards. Where feasible, riparian buffers should be restored through tree plantings and revegetation where they are missing on one or both sides of the stream in the Abrams/Belmont Planning Area. This would also help to increase the level of tree canopy in this Planning Area. These actions would help the Township to meet DEP requirements. Streambanks should also be restored to reduce erosion and help to limit sedimentation in steams and improve water quality. The Township should continue to require stormwater controls for new development and redevelopment that manages volume and integrates water quality best management practices (BMPs). The Township should continue to review and implement the Stormwater Study and MS4 Pollution Reduction Plan to identify the appropriate methods for mitigating stream impairment issues.

Crow Creek at Sweetbriar Park

Figure 64: Planning Area 1 Riparian Buffer Map

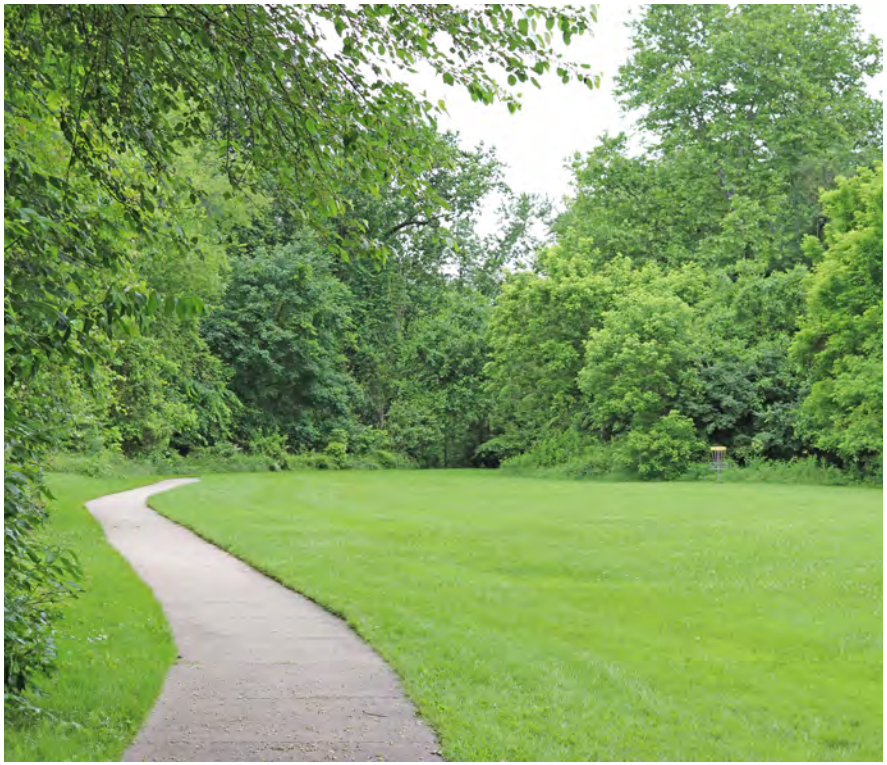


Community Connections

Pedestrian connections via sidewalks and trails should be improved in order to facilitate the safe movement of people in the Township and connect them to destinations. The Township should adopt standards for the provision/extension of sidewalks that provide clear and measurable criteria to be used in the decision-making process. The existing sidewalk network should be maintained through coordination with homeowners to replace deteriorated segments at the time of resale/use and occupancy.

The completion of the Crow Creek Trail would provide a continuous linkage between Walker Park and the Schuylkill River, serving as the primary spine of this Planning Area's trail network. The Crow Creek Trail would connect Sweetbriar Park to the Upper Merion Middle School and High School and residential neighborhoods. In addition, the Township should coordinate with Norfolk Southern to identify opportunities that provide access to the Schuylkill River, especially Township-owned parkland, including the Riverfront Park. Four schools are located in the Abrams/Belmont Planning Area, Caley Elementary, Candlebrook Elementary School, Upper Merion Area Middle School and Upper Merion Area High School. The township should coordinate with the Upper Merion Area School District to undertake Safe Routes to Schools (SRTS) studies and Walk Audits to evaluate conditions for walkers in the Planning Area. These schools may serve as destinations along trails and sidewalks to interconnect the residential neighborhoods in Planning Area 2.

Hansen Road Street Conditions and Lack of Sidewalk at Sweetbriar Park



Sweetbriar Park Walking Trail

Neighborhood Character and Livability

This Planning Area has a strong residential and community character as it serves as the location for several schools, the Township Building and the Community Center. This character can be retained through maintaining existing residential densities and uses, and developing zoning standards to preserve the existing scale and form of residential development. The Township should also maintain zoning for neighborhood-level convenience commercial uses to give proximal access to such uses for neighborhoods. This could reduce the need to drive for some commercial uses and make this area more walkable overall.

Abrams/Belmont Planning Area also contains over ten parks, including Heuser Park. Township parks should be improved as recommended in the Parks and Recreation Master Plan, including continued improvements to Heuser Park via implementation of its Master Plan, increasing opportunities for access to the Schuylkill River, upgrading park equipment, and natural habitat restoration. Operation and usage of the Rambler should be studied in order to identify opportunities for creating a more widely used transit service that would more effectively complement and enhance SEPTA bus and transit routes.

Upper Merion Township Building

Upper Merion Community Center

Residential Character of Abrams/Belmont Planning Area

Heuser Park Recreational Fields

Heuser Park Master Plan

PLANNING AREA 3 _ COMMERCIAL CENTER

The Commercial Area is located centrally along the Township's western boundary. It comprises the largest concentration of commercial uses in the Township overall. The King of Prussia Mall is located here along with the newly developed Village at Valley Forge. For these reasons, this area experiences a high level of traffic both from within the Township and from elsewhere. It is located adjacent to the Moore Park area and the residential area comprising Abrams/Belmont.

Planning Area 3 is home to the smallest proportion of residents in the Township at 169 people. This comprises approximately 0.6% of the population. There are a total of 87 housing units, 61% of which are owner-occupied. It is important to note that these numbers do not account for the new residential developments in the Village at Valley Forge as that population and construction data is not yet available. Therefore, this total is expected to rise in the in the coming years and reflect the current trends being experienced by the Township. In addition to the businesses located at the King of Prussia Mall, The Village at Valley Forge contains many restaurants and other businesses that attract residents and visitors to the area.

This highly developed area is within the Trout Creek watershed. Most of the streams in the Commercial Area are piped underground due to the high level of development. Because of this, they do not contain riparian buffers. Tree canopy coverage in this area is very low for the same reason at approximately 8%. Opportunities exist to increase this through re-greening parking areas and along streets and store fronts.

This area is served by several SEPTA Bus Routes: 92 (Exton to King of Prussia), 99 (Phoenixville to Norristown Transportation Center), 123 (King of Prussia to 69th Street Transportation Center), 124 (Chesterbrook and King of Prussia to 13th and Market), and 125 (Valley Forge and King of Prussia to 13th and Market). These provide a transit option for employees who work in the area and those visiting the businesses here. Two proposed stops from the proposed NHSL extension would be located in this area along the northern edge of the King of Prussia Mall before entering Moore Park. Several residential apartment buildings and townhomes have recently been constructed in the Village at Valley Forge development.

2040 RECOMMENDATIONS

Transportation and Transit Experience

Several Capital Improvement Projects are proposed for Planning Area 3, which experiences a high level of traffic due to the presence of the King of Prussia Mall and other commercial destinations. Capital Improvement Projects identified in the Transportation Plan for this area include intersection and signal improvements at Swedesford and Warner Roads, DeKalb Pike and Mall Boulevard, DeKalb Pike and Allendale Road, Allendale Road and Wills Boulevard, and Allendale Road and Court Boulevard. The Township should coordinate with KOP-BID to develop additional streetscape guidelines for the DeKalb Pike corridor to improve the visual impact of the road as well as to make improvements to vehicular and pedestrian safety. The proposed NHSL extension will have two stops at the mall. Continued coordination with SEPTA, the County, and DVRPC should be done for the proposed extension of the rail line and planning around the proposed station area as recommended in the Station Area Plan. This will help to ensure that pedestrians and bicyclists have the opportunity for safe passage to and from the stations and surrounding uses.

More bus shelters should be placed throughout the Commercial Area to enhance the experience of transit users. Safe and appropriate sidewalk connections should also be made to all bus stops and/or shelters. As redevelopment and upgrades take place at the King of Prussia Mall, the continued provision of a transit center should be evaluated in consultation with SEPTA (timing of the proposed NHSL Extension should be a consideration). Similarly to the Mixed Use area, consideration should be made to reconfiguration of the 99 SEPTA Bus Route, creating a more compact 99 route that would effectively have more frequent service with shorter a ride-time. Further coordination with SEPTA should be done in order to manage transit service in the Commercial Area and develop and adopt standards for a Transit Impact Study. The current usage of the Rambler should be reviewed to identify opportunities for creating a more widely used transit service that would more effectively complement and enhance SEPTA Bus and Transit routes.

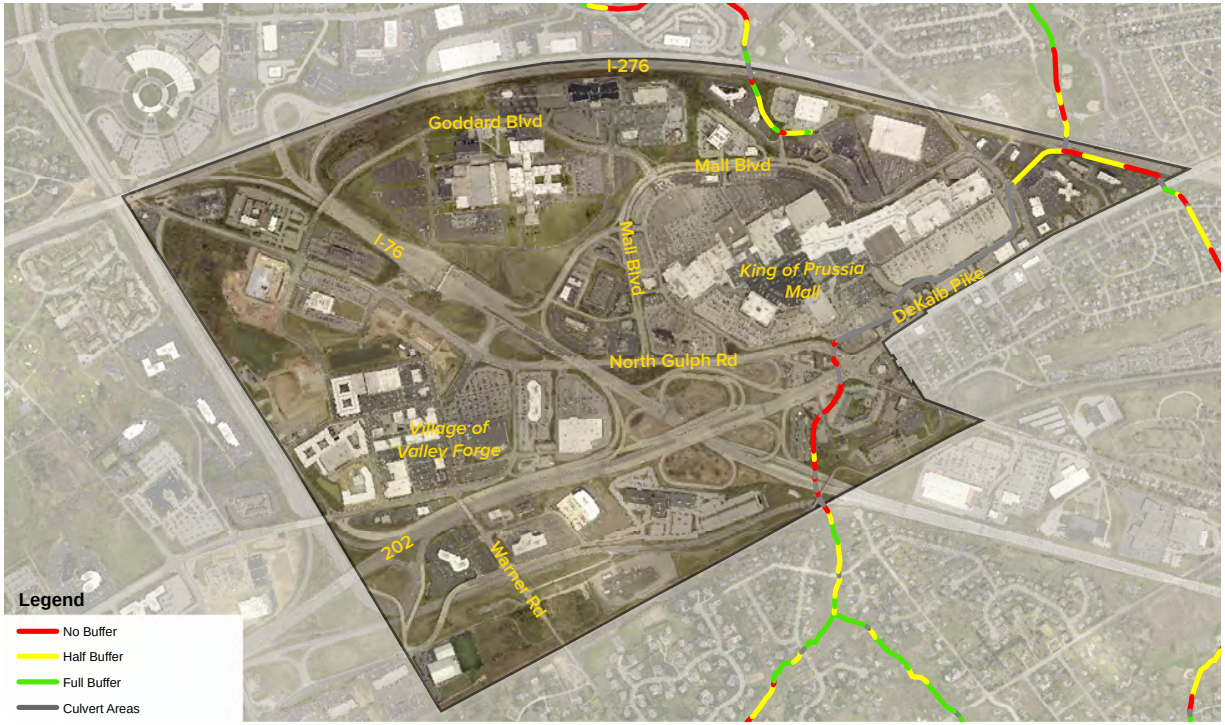
NHSL Rail Extension rendering at the KOP Mall

Environmental Quality

Tree canopy coverage is very low in this area and should be increased throughout the Commercial Area through implementation of green parking standards in existing developments, including the addition of stormwater controls to slow and treat runoff prior to entering either Crow Creek or Trout Creek. Due to the high level of parking lots in this area, the Township should adopt standards for the greening of parking lots as a part of new/redevelopment in addition to existing developments. The Township should also continue to review and implement the Stormwater Study and MS4 Pollution Reduction Plan to identify the appropriate methods for reducing and mitigating stormwater runoff.

KOP Mall Parking Lot

Figure 65: Commercial Area Riparian Buffers



Community Connections

Many locations in this planning area are lacking sidewalk connections. As part of coordinating with PennDOT regarding the improvements to North Gulph Road at the Wegmans, the Township should improve pedestrian controls, sidewalks, and crosswalks to facilitate a safe connection between the Village at Valley Forge and the Mall. Sidewalk connections and safe pathways between parking areas and buildings should be made through the adoption of clear and appropriate standards. These would provide an alternative mode of travel for those who are typically driving to uses in close distance from one another in the Commercial Area. . The recommendations of the Bike Montco plan, to create a bicycle connection along Warner Road between the Chester Valley Trail and Allendale Road should be carried out. This would provide a safe alternative mode of transportation between the trail and the Village at Valley Forge.

A wayfinding signage system should be designed and implemented that brands the Commercial Center and local trails and directs users to specific destinations within the Commercial Center. The Township should also coordinate with the County, DVRPC, PennDOT, and Valley Forge National Historic Park as part of the Trail Feasibility Study to establish a multi-use trail connection between the Chester Valley Trail and Valley Forge National Historic Park. Key components of the study will involve designing safe and direct connections between the Chester Valley Trail Park and Ride at Warner Road and the Village at Valley Forge, and the Village at Valley Forge and the Park. These trails, once complete, will serve as an amenity to the Commercial Center area and provide recreational opportunities and a safe pathway for users.

Village at Valley Forge Walkway

Bike Lanes at Village at Valley Forge

Field View of Route from Chester Valley Trail to Village at Valley Forge

Neighborhood Character and Livability

The existing zoning of the King of Prussia quadrant of the Gulph Road and Rt. 202 intersection should be reviewed, including permitted uses, parking lot consolidation and interconnection, pedestrian circulation, and the use and disposition of the Park and Ride. Zoning of the triangle bounded by Allendale Road, Rt. 202, and the Turnpike, including permitted uses, parking lot consolidation and interconnection, pedestrian circulation, and opportunities that may arise from the proposed NHSL extension should also be reviewed. South Warner Road Open Space is located in the Commercial Area and could be enhanced to provide amenities as a Park and Ride (water, restrooms, and kiosk) and serve as a welcome center/gateway to the Township.

Construction at Village of Valley Forge

PLANNING AREA 4 - SOUTH GULPH

Planning Area 4 is located centrally in the Township, just south of the Turnpike. No schools are located in this planning area. Two parks, Valley Forge Acres and Kingwood Park are located in the South Gulph Area. The planned path of the Chester Valley Trail traverses this area. It is bordered by US-202 and the PA Turnpike (I-276) on its northern border and the Schuylkill Expressway (I-76) on its southern border. There are commercial, office, industrial, and residential uses in this area.

Approximately 7.7% of the Township's population, a total of 2,180 people, lives in this planning area. This area has the second largest average household size in the Township at 2.33 persons per household. A total of 1,079 housing units are located here, with 27% of them being owner-occupied. A significant portion of the housing types in this planning area are multi-family units. There are small pockets of residential neighborhoods located here which are broken up by major highways and larger scale uses. This planning area is mostly commercial and office uses, with some pockets of residential developments. It is traversed by major road corridors and has Valley Forge Memorial Gardens at its center.

Planning Area 4 is within the Crow Creek watershed. Crow Creek runs south to north through the center of this planning area. The creek is lacking riparian buffers in this area and they are mostly missing on both sides of the stream. The portions of Crow Creek in this area are impaired and not attaining PA DEP's water quality standards requiring mitigate by the Township. This portion of the stream is predominantly impacted by runoff issues and siltation.

This planning area contains isolated residential areas that include Kingwood Apartments and Townhomes. Valley Forge Memorial Gardens are located centrally within the planning area. The main roadways through the area include Church Road and S. Gulph Road. SEPTA bus route 125 serves this area along S. Gulph Road and travels to Center City Philadelphia and Route 123 travels to 69th Street Transportation Center in Upper Darby. This bus route links people to employment destinations and commercial uses along S. Gulph Road.

Figure 66: South Gulph Planning Area Water Quality

2040 RECOMMENDATIONS

Transportation

Several Capital Improvement Projects have been proposed for this planning area to improve traffic safety and circulation. These projects are intersection and signal improvements at S. Gulph Road and Brooks Road, S. Gulph Road and Church Road, Mall Boulevard at DeKalb Pike, DeKalb Pike, Allendale Road, Croton Road and Brooks Road. These improvements would help to reduce the amount of time cars wait at intersections. DeKalb Pike and S. Gulph Road see high levels of traffic and are both characterized by many driveway curbcuts which can lead to conflicts between vehicles and between vehicles and pedestrians. Limiting the future number of driveways along these corridors, bringing buildings closer to the street and placing driveways behind buildings, where feasible, can assist in mitigating these conflicts.

DeKalb Pike and S. Gulph Road are also major bus routes and contain many bus stops. The Township should review potential options for improving accessibility to and the quality of bus stops on these roads. This has the potential to increase usage of buses as well as to provide a safe location for passengers to wait for their rides. Complete Streets concepts should be done for Church Road, a collector, and DeKalb Pike, an arterial, to integrate sidewalks, crosswalks and any other traffic calming measures. This can assist in improving the safety of pedestrians, drivers, and bicyclists.

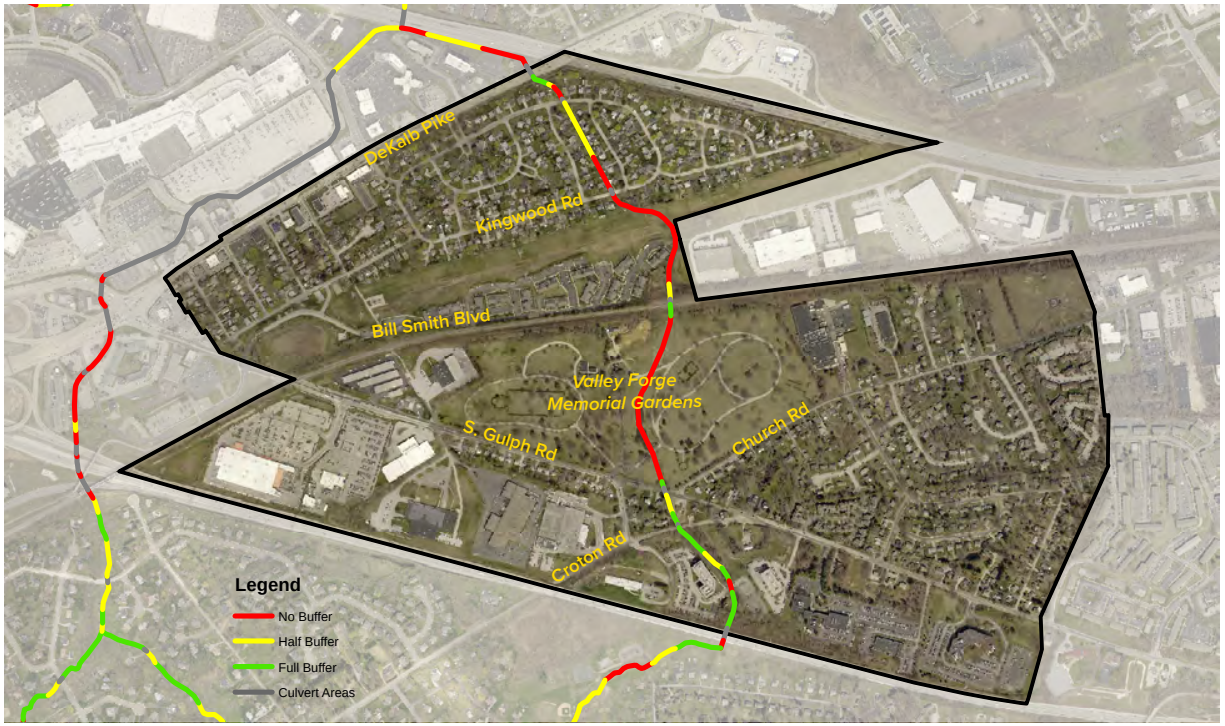
Office Development at 455 South Gulph Road and Bus Stop

Environmental Quality

Planning Area 4 has Crow Creek running through it from south to north with some portions piped through culverts. The Township should take measures to improve the water quality of Crow Creek and establish wooded buffers where they are currently lacking on one or both sides of the stream. The Township should also adopt a Riparian Corridor Protection Ordinance to minimize encroachment upon Abrams Run/Crow Creek, including proper stewardship of riparian buffers to maximize water quality benefits.

There is also the potential to increase tree canopy coverage in this planning area by returning lawn trees to residential properties. This has the potential to reduce the urban heat island effect, cool homes, and make neighborhoods and residential streets more attractive. Implementation of green parking standards for parking lots can help to improve stormwater management and the general aesthetics of shopping areas, particularly along major commercial corridors in this area.

Figure 67: Planning Area 4 Riparian Buffers



Crow Creek

Stormwater Management at 455 South Gulph Road

Kingwood Road Front Lawn Trees Missing

Community Connections

The sidewalk network is currently lacking in the South Gulph area and connections should be improved to bus stops and within residential neighborhoods. The Township should adopt standards for the provision/extension of sidewalks that provide clear and measurable criteria to be used in the decision-making process. This would help to ensure that sidewalks are constructed as properties turn over as time goes on. A wayfinding signage system should be developed and implemented that directs users to the trail system and specific Township destinations along the trail system. This would help to brand the Chester Valley Trail and make it a destination and useful pathway for users. Ensuring that safe connections are provided for pedestrians from sidewalks and parking areas to building entrances is necessary in commercial areas, office, and industrial areas. A more formal pedestrian connection between the Kingswood Apartments and Townhomes complex and the Prussian Woods Development should be made as it is currently cut off by a wooded area. The photo below on the left shows the current informal walkway used between the two developments.

Informal Walkway between Kingswood Apartments and Townhomes complex and the Prussian Woods Development

Wilson Road View of KOP Mall

Residential Street Lacking Sidewalks

Neighborhood Character and Livability

Improvements to Township parks should be made as recommended in the Township's Parks and Recreation Master Plan. For this planning area, parks include Kingwood Road Park and Valley Forge Acres. Both parks are in need of maintenance and repairs to equipment. Kingwood Road Park should have a connection to the future location of the Chester Valley Trail and could benefit from improved seating for courts. Valley Forge Acres should have improved pedestrian connections to the park from the surrounding residential neighborhoods. Overall in the planning area, safe connections to the future location of the Chester Valley Trail should be made.

The Township and GVFTMA should review operation and usage of the Rambler to identify opportunities for creating a more widely used transit service that would more effectively complement and enhance SEPTA Bus and transit routes. The Township should aim to maintain existing residential and commercial densities and uses, and develop zoning standards to preserve existing scale and form of development.

Sidewalks on One Side of Road at Kingwood Road Park

Courtyard Square Shopping Center

Gulph Road Street Character

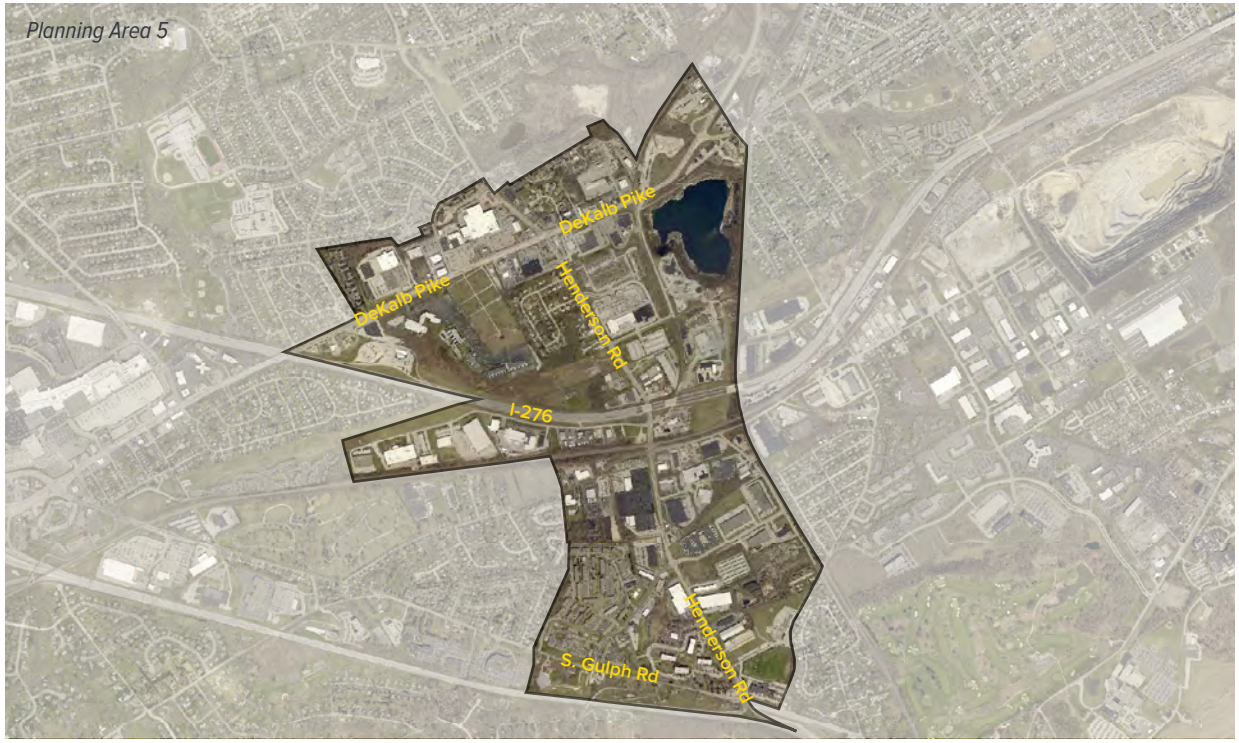
Kingwood Road Rambler Stop

PLANNING AREA 5 - HENDERSON ROAD

Planning Area 5 is located in the eastern central portion of the Township, just south of Bridgeport Borough. The newly constructed Gulph Elementary School is located here on Henderson Road. Baxter Park is located here, which is owned by the Upper Merion Area School District and maintained by the Township and Upper Merion Soccer Club. Planning Area 5 is mostly within the Schuylkill River watershed but some portions along its western edge are within the Crow Creek watershed.

Approximately 12% of the Township's population, a total of 3,416 people, lives in this planning area. This area has the second smallest average household size in the Township at 2 persons per household. A total of 2,078 housing units are located here, with 32% of them being owner-occupied. Many of the residential units located here are townhomes and multifamily units. The Henderson Road planning area is a mixture of commercial, industrial, and residential land uses and is not particularly walkable overall.

This planning area contains the Henderson Road corridor just north of Dekalb Pike to the Schuylkill Expressway (I-76) on its southern boundary. This area has several large commercial centers within it, including the Valley Forge Shopping Center, Dekalb Plaza, and Henderson Square. Henderson Square Luxury Apartments are located here as well. The main roadways through the area include Henderson Road, S. Gulph Road, and Dekalb Pike. The PA Turnpike and I-76 traverse this planning area. SEPTA Bus Routes 99 and 124 serve this area along Henderson Road and Dekalb Pike. Route 99 runs between Phoenixville and Norristown Transportation Center and Route 124 runs between Chesterbrook and 13th and Market in Philadelphia. The proposed NHSL extension will cross this area and a stop will potentially be located at Henderson Road and Saulin Boulevard.



2040 RECOMMENDATIONS

Transportation Projects

The Capital Improvement Projects proposed for this planning area include intersection and signal improvements at DeKalb Pike and Saulin Boulevard, DeKalb Pike and Henderson Road, Henderson Road and South Gulph Road, Henderson Road and Shoemaker Road, and South Gulph Road, Weadley Road, and Shoemaker Road. This area experiences a relatively high level of traffic and these improvements would reduce the waiting time at traffic lights and improve traffic flow through the area. The Saulin Boulevard and Prince Frederick Street Extension is also included in the Transportation Plan and is partially located in this planning area. This project would extend Saulin Boulevard across DeKalb Pike and would continue to Henderson Road across from Prince Frederick Street. The proposed Turnpike interchange originating at Saulin Boulevard and Henderson Road is included in Montco 2040 and Connections 2045.

The Township should coordinate with KOP-BID to develop streetscape guidelines for the DeKalb Pike (Rt. 202) corridor. This would assist in making Rt. 202 more durable, safe, and attractive for travel by pedestrians, bicyclists, and drivers. Evaluation of connectivity alternatives for Ivy Lane, with consideration of integration with the Saulin Boulevard extension and/or shared access with lots fronting Henderson Road should be considered. Efforts should be made to limit driveways via shared access along major road corridors and bus routes in this area (S. Gulph Road, DeKalb Pike, and Henderson Road) and by interconnecting parking lots where feasible.

Coordination with SEPTA, the County, and DVRPC should be continued regarding the proposed extension of the Norristown High Speed Line including: the design and construction of a new station at Henderson Road and Saulin Boulevard; construction of a new park-and-ride garage; evaluation of the integration of adjacent multi-family and commercial zoning; and evaluation of traffic impacts to local roads leading to and from the station and park-and-ride facility. Implementation of pedestrian improvements identified in DVRPC's Station Area Plan is also recommended and includes: trail/sidewalk integration with the Chester Valley Trail; new pedestrian connection with 251 DeKalb residential; and enhanced pedestrian crossings and traffic calming.

Henderson Road Turnpike Interchange

Example of Bus Shelter

Transit Experience

The transit experience in the Township should be enhanced to encourage increased and continued use of public transportation. The Township should continue to coordinate and cooperate with GVFTMA and KOP-BID regarding the placement of bus shelters throughout the Henderson Road area, including appropriate sidewalk connections to all bus stops/shelters. Coordination with SEPTA can help to determine bus ridership, including demand, destinations, and facilities, including a survey of the Henderson Road area employers and apartment complex residents.

Establishing clear standards for providing safe, pleasant, and direct connections between community sidewalks and building entrances is important in the Henderson Road area due to the level of parking lots and businesses. Further coordination with SEPTA regarding the reconfiguration of the 99 Bus Route and the potential shifting of service to another route could shorten travel times, creating a more compact 99 route that would effectively have more frequent service with a shorter a ride-time. The Township should also work with SEPTA on service throughout the Henderson Road area and adopt standards for a Transit Impact Study. Similarly to other planning areas, reviewing the operation and usage of the Rambler could help to identify opportunities for creating a more widely used transit service that would more effectively complement and enhance SEPTA Bus and transit routes.

Environmental Quality

The Township should continue to review and implement the Township's Stormwater Study and MS4 Pollution Reduction Plan. One recommendation of this plan for the Henderson Road area is to naturalize existing stormwater basins in the area, including the Gulph Mills Business Park Condo Association, by removing low-flow channels and increasing vegetation cover. Due to the level of parking lots in this area, the adoption of standards for the green of parking lots of new/redevelopment could assist in improving stormwater management. This planning area has the second lowest tree canopy coverage in the Township (20.7%). Tree canopy coverage should be increased throughout the Henderson Road area through implementation of green parking standards in existing developments, including the addition of stormwater controls to slow and treat runoff prior to entering either Crow Creek or Matsunk Creek. An increase in tree canopy coverage could help to improve water quality, provide shade and cool buildings, reduce the urban heat island effect, slow traffic along roads, and improve the aesthetics of the area.

Community Connections

Sidewalk and trail connections should be enhanced in this area in improve public safety and encourage healthy lifestyles. Sidewalks should ultimately be provided on both sides of Henderson Road for its full length to provide access to businesses by pedestrians, residents of the area, and transit users. Because of the high number of parking lots in this area, clear standards should be established for the provision of safe, pleasant, and direct connections between community sidewalks and parking areas, and building entrances.

Coordination with SEPTA, DVRPC, and the County regarding the implementation of the proposed

DeKalb Pike Streetscape and Traffic

Valley Forge Shopping Center Parking Lot Pedestrian Crossing

Courtyard Square and Valley Forge Shopping Centers

NHSL Extension Station Area Plan recommendations should continue, including the enhancement of pedestrian connections around and to the proposed rail station in the Henderson Road area. The Township should also continue to coordinate with the County and PennDOT as the Chester Valley Trail extension is developed through the Henderson Road area, including integration with the NHSL Extension's Henderson Road station, creating a multi-modal transportation hub (encourage other modes of travel; sustainability for a healthy lifestyle). Implementation of a wayfinding signage system that brands the Henderson Road area and markets the numerous businesses within the industrial/manufacturing portions of the study area is also recommended.

Neighborhood Character and Livability

The Township should evaluate the administrative office/industrial/commercial zoning the for the portion of the Henderson Road area north of DeKalb Pike and east of Henderson Road, including permitted uses, parking lot consolidation and interconnection, pedestrian circulation, and relationship to the potential Saulin Boulevard Extension. Baxter Park is located in the Henderson Road area and should be improved based on the recommendations in the Township's Parks and Recreation Master Plan, including evaluating the opportunity to utilize the site for other sports and enhancing parking and access through coordination with the Upper Merion Area School District (UMASD). Tree canopy coverage (sustainability to reduce heat island effects) should be increased throughout the Henderson Road area through implementation of green parking standards in existing developments.

Valley Forge Shopping Center Sign

Giant Located on Henderson Road

Wawa Located on DeKalb Pike

PLANNING AREA 6 - SWEDESBURG/KING MANOR

Planning Area 6 is a small area bordering the southern edge of Bridgeport Borough. Bob Holland Memorial Park and Swedesburg Park are located in this area. Bridgeport Elementary is located just outside the area to the north. The anticipated location of the Chester Valley Trail will go along the edge of this planning area. This area is mostly comprised by older, single family attached homes and is characterized by its proximity to Bridgeport Borough.

A small percentage of the Township's population, approximately 6%, a total of 1,696 people, lives in this planning area. This area has the third largest average household size in the Township at 2.54 persons per household. This is likely due to the majority of housing being single family detached homes. A total of 739 housing units are located here, with 55% of them being owner-occupied. Approximately 27% of the population of this area falls between the ages of 30 and 44 years old. This area is largely residential with some industrial and commercial land uses located along Crooked Lane.

Planning Area 6 is within the Schuylkill River watershed. A small portion of a creek flows from the Schuylkill River and enters this area near Crooked Lane. This portion of the creek is not well buffered and is not attaining PA DEP's water quality standards and requires mitigation by the Township. Tree canopy coverage in this area is moderately-low at 27% and there is room to increase this number through replanting front lawn trees.

Most of this planning area is comprised of well-established residential neighborhoods which are mostly well established, single family homes. The main roadways through the area include Crooked Lane, Coates Lane, and Fourth Street which runs into Bridgeport Borough. SEPTA Bus Route 99 runs along Ford Street in Bridgeport and is the most proximal route to this area. DeKalb Street Station in Bridgeport is also located just outside of the Swedesburg/King Manor Area.

2040 RECOMMENDATIONS

Transportation

There are no Capital Improvement Projects proposed for the Swedesburg/King Manor Planning Area in the Transportation Plan. Pedestrian and bicycle connections are in need of improvements between this planning area and the commercial uses and transit stops in Bridgeport Borough. Crooked Lane is commonly used by cut-through traffic. This should be mitigated through identifying and implementing appropriate traffic calming measures to discourage and/or slow traffic along this road. The Township should also implement complete street concepts for all collectors (Crooked Lane and Holstein Street) and minor arterials (River Road) to integrate sidewalks, bike lanes, crosswalks, and neighborhood-level traffic calming measures. This could further assist with reducing the speed at which drivers travel through this area while increasing pedestrian safety.

Environmental Quality

While there is only one small stream segment in this area, it is currently impaired and lacking a wooded buffer along it and could benefit from the adoption of a Riparian Corridor Protection Ordinance. This could help to minimize encroachment upon streams, including proper stewardship of riparian buffers to maximize water quality benefits. The Township should continue to review and implement the township's Stormwater Study and MS4 Pollution Reduction Plan and its recommendations to identify the appropriate methods for reducing and slowing stormwater runoff in this area.

Figure 68: Swedesburg/King Manor Planning Area Water Quality

Stormwater Drainage on Coates Lane

Chester Valley Trail

Community Connections

Residents of this planning area would benefit from an improved sidewalk network that links it to Bridgeport Borough. Coordination with Bridgeport Borough throughout this process will be necessary. The adoption of standards for the provision/extension of sidewalks that provide clear and measurable criteria to be used in the decision-making process is recommended. Due to the proximity of the Swedesburg/King Manor area to the future Chester Valley Trail, the design and construction of a wayfinding signage system would assist in directing users to the trail system, raising awareness and usage, and leading users to specific destinations along the trail.

The Township should coordinate with the Upper Merion Area School District to undertake Safe Routes to Schools (SRTS) and Walk Audits for Bridgeport Elementary, which is located just outside of Planning Area 6 and should coordinate with Bridgeport Borough through this process. This would help to identify the potential gaps in the sidewalk network and what recommendations could improve safety for pedestrians and students.

The Schuylkill River waterfront is currently difficult to access from this area. Coordination with Norfolk Southern could help to identify opportunities to improve access to the waterfront. In order to maintain the existing sidewalk network in Planning Area 6, the Township should work with landowners to replace deteriorated segments at the time of resale/use and occupancy to manage the network moving forward.

Swedesburg Fire Company

Bike Racks at Conshohocken Brewing Company in Bridgeport

Jefferson Street in Swedesburg

Walkers along Bridge in Bridgeport (location of future Chester Valley Trail)

Neighborhood Character and Livability

Two parks are located in this planning area: Bob Holland Memorial Park and Swedesburg Park. These parks should be improved as recommended in the Parks and Recreation Master Plan, including maintenance of park facilities, making sites ADA accessible, and providing a trail connection from Bob Holland Memorial Park. Tree canopy should be increased through an active tree planting program that returns front lawn trees to all residential properties. This would help to improve water and air quality, slow and treat runoff, and provide shade and cooling for homes. Existing residential densities and uses should be maintained, and zoning standards developed to preserve the existing scale and form of development in this area. The Rambler shuttle serves this area and its usage should be reviewed in order to identify opportunities for creating a more widely used transit service that would more effectively complement and enhance SEPTA Bus and transit routes near the existing Jefferson and 4th Street stop.

Bob Holland Park Open Space

Bob Holland Park Baseball Field

Swedesburg Residential Character

PLANNING AREA 7 - CROTON WOODS

The Croton Woods Planning Area is located along the southern portion of the Township. It is bordered by I-76 on its northern edge. This area is made up of largely single-family detached homes. Major through roads include Croton Road, Warner Road and King of Prussia Road. There are several parks located here including the nearly 90 acres of open space within the McKaig Nature Center, Whitegate Park, Bob White Park, Kerwood Natural Area, and Mount Pleasant Park. Roberts Elementary is also located here.

Planning Area 7 is home to 2,632 residents which makes up approximately 9.3% of the Township's overall population. Over a quarter of this population is between the ages of 55 and 69 years old, which is relatively high in comparison with other planning areas. This Planning Area has the second highest household size of 2.7 persons per household. There are 1,042 housing units of which 90% are owner-occupied. This is due to this area being comprised of well-established single family detached homes, likely with older families with adult children.

The Croton Woods Planning Area is within the Crow Creek watershed with a small western portion within the Trout Creek watershed. The streams in this Planning Area are largely well buffered on both sides, but some locations buffers are lacking on one or both sides of the stream. These streams are in good health and are attaining water quality standards. The southern portion of this planning area has steep slopes and this area has one of the highest tree canopy coverages of the Township.

This Planning Area is not served by any SEPTA Bus Routes but is most proximal to Routes 92 (Exton to King of Prussia) and 125 (King of Prussia to 13th and Market). The Croton Woods area has access to I-76 and Rt. 202 just outside of its northern boundary.

Figure 69: Croton Woods Planning Area Water Quality

2040 RECOMMENDATIONS

Transportation

There are no Capital Improvement Projects identified in the Transportation Plan for the Croton Woods area. This area is largely residential and has Roberts Elementary and several parks within it. Because of this, it would benefit from traffic calming measures to slow traffic through these areas. The Township should implement complete street concepts for all collectors (Croton Road, Warner Road, King of Prussia Road) to integrate sidewalks, bike lanes, crosswalks, and neighborhood-level traffic calming measures. These would assist in increasing safety for pedestrians and bicyclists.

Environmental Quality

The topography of Planning Area 7 is comprised of more steep slopes than other areas in the Township. This leads to an increase in runoff and flood related issues. Identification of locations most impacted by flooding and those that could benefit from stormwater controls should be done in order to mitigate these issues.

The Township should adopt a Riparian Corridor Protection Ordinance to minimize encroachment upon Abrams Run/Crow Creek, including proper stewardship of riparian buffers to maximize water quality benefits. Streams in this Planning Area are largely unimpaired and are generally well buffered in comparison to other Planning Areas in the Township. Restoration of streambanks and riparian buffers in streams most impacted most by erosion can maintain this water quality into the future. Review and implementation of the Township's Stormwater Study and MS4 Pollution Reduction Plan should continue as well in order to identify the appropriate methods for reducing runoff issues in Croton Woods.

Flood Warning Sign at Roberts Elementary School

Crow Creek Riparian Buffer

Erosion at Crow Creek

Crow Creek

Figure 70: Croton Woods Planning Area Riparian Buffers

Community Connections

The sidewalk network in the Croton Woods area is relatively limited given the high level of residential neighborhoods located within it. Challenges exist to linking the entire sidewalk network in this area, but potential connections between the Chester Valley Trail, parks, neighborhoods, and Roberts Elementary should be identified and implemented where feasible. Pedestrian connections to NHSL stations and to the most proximal bus routes (92 and 125) to the planning area should also be made. The Township should coordinate with the Upper Merion School District to undertake Safe Routes to Schools (SRTS) and Walk Audit for Roberts Elementary within the Planning Area to improve the safety of students walking to school. Standards for the extension of sidewalks that provide clear and measurable criteria to be used in the decision-making process should also be made for this area.

Croton Woods Neighborhood Character and Sidewalks

Roberts Elementary

Neighborhood Character and Livability

The Croton Woods area has more parks than most neighborhoods in the Township. These parks should be improved as recommended in the Parks and Recreation Master Plan, including increasing opportunities for access to the Chester Valley Trail, upgrading park equipment, increasing riparian buffers, making sites ADA accessible, and restoration of natural habitat.

McKaig Nature Center Woodlands

This planning area has the second highest tree canopy coverage of 64%. This coverage helps to significantly reduce urban heat island effects and should be maintained moving forward. An active tree planting programs that returns front lawn trees to residential properties could be useful in accomplishing this. The Township should aim to maintain existing residential densities and uses and develop zoning standards to preserve the existing scale and form of development in this area.

Mature Lawn Trees

PLANNING AREA 8 - GYPSY HILLS/GULPH MILLS

Gypsy Hills/Gulph Mills is situated along the Township's southern edge, oriented to the east. It is bordered by I-76 on its northern edge, West Conshohocken Borough to its east, and Radnor Township to its south and west. This area is largely made up of residential land uses. Executive Estates Park, Gypsy Woods Preserve, Sumner Dam, and William M. Wall Memorial Park are located in Planning Area 8.

Planning Area 8 is home to 2,958 residents, approximately 10.4% of the Township's population. Approximately 25% of this population falls between the ages of 55 and 69 years old. There are a total of 1,317 housing units, of which 87% are owner-occupied. The Gypsy Hills/Gulph Mills area has the fifth largest household size of any planning area at 2.34 persons per household. This reflects a similar character to Planning Area 7, being made up of older more well established neighborhoods and families with adult children still living at home.

Gulph Mills/Gypsy Hills is mostly within the Gulph Creek Watershed with some sections along the northern edge and southeast corner in the Schuylkill River Watershed. The streams in this planning area are somewhat well buffered but many sections are lacking vegetation on either one or both sides. All of the streams located here are not attaining water quality standards and are considered impaired and in need of mitigation by the Township. This area also has moderately to very steep slopes present and is very well covered with tree canopy.

This planning area is served by the 125 (King of Prussia to 13th and Market) and 95 (Gulph Mills to Willow Grove Park) SEPTA Bus Routes. The Norristown High Speed Line intersects this area and is served by the Gulph Mills Station. Matsonford Station is located just over the border of this planning area in Lower Merion.

Figure 71: Gypsy Hills/Gulph Mills Planning Area Water Quality

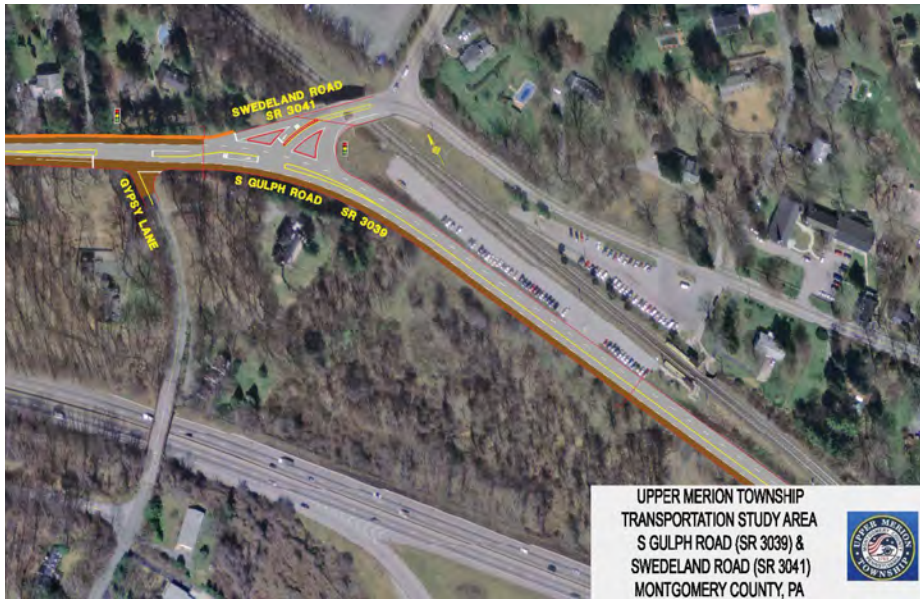
2040 RECOMMENDATIONS

Transportation

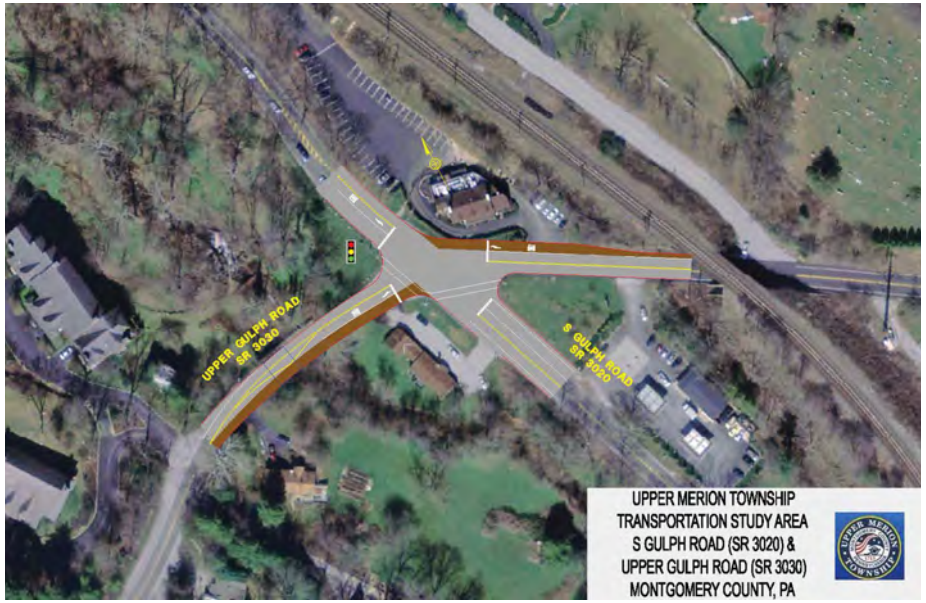
There are several Capital Improvement Projects identified in the Transportation Plan for the Gulph Mills/Gypsy Hills area. Existing capital Improvement Projects include:

- Signalization and optimization of signal timings of intersection located at S. Gulph Road and Swedeland Road, addition of eastbound and westbound through lanes on S. Gulph Road, and the addition of eastbound advance left turn lane phase on S. Gulph Road.
- Optimization of signal timings at S. Gulph Road and Upper Gulph Road and the addition of eastbound and westbound through lanes on Upper Gulph Road.
- Optimization of signal timings at the intersection of S. Gulph Road and Matsonford Road and the addition of a southbound left turn lane on S. Gulph Road and eastbound left turn lane on Matsonford Road.
- Optimization of signal timings of intersection at Matsonford Road and Upper Gulph Road, addition of westbound left turn lane on Matsonford Road, and addition of southbound left turn lane on Upper Gulph Road.
- Optimization of signal timings at the intersection of Swedeland Road, Holstein Road and Jones Road, and the addition of westbound left turn lane on Swedeland Road
- Optimization of signal timings at S. Gulph Road and I-76 EB On-Off Ramp/Trinity Road and the addition of a southbound right turn lane on S. Gulph Road.

The Township should reevaluated the Act 209 Study to reflect current needs and demand of the road network in addition to reflecting the goals laid out in this plan including preserving residential and community character. Complete Streets concepts should be implemented for all Collectors (Upper Gulph Road, Balligomingo Road) and Arterials (S. Gulph Road, Matsonford Road, Swedeland Road) to integrate sidewalks, bike lanes, crosswalks, and neighborhood-level traffic calming measures. These can help to reduce speeding along roads and improve safety for pedestrians and bicyclists. The Township should work with SEPTA and DVRPC to implement the Safe Route to Transit for Gulph Mills Station (within Planning Area 8) and Matsonford Station (just outside of Planning Area 8) of the Norristown High Speed Line to improve pedestrian and bicyclist connections to this transit stops.



Proposed Improvements at S. Gulph Road and Swedeland Road



Proposed Improvements at S. Gulph Road and Upper Gulph Road

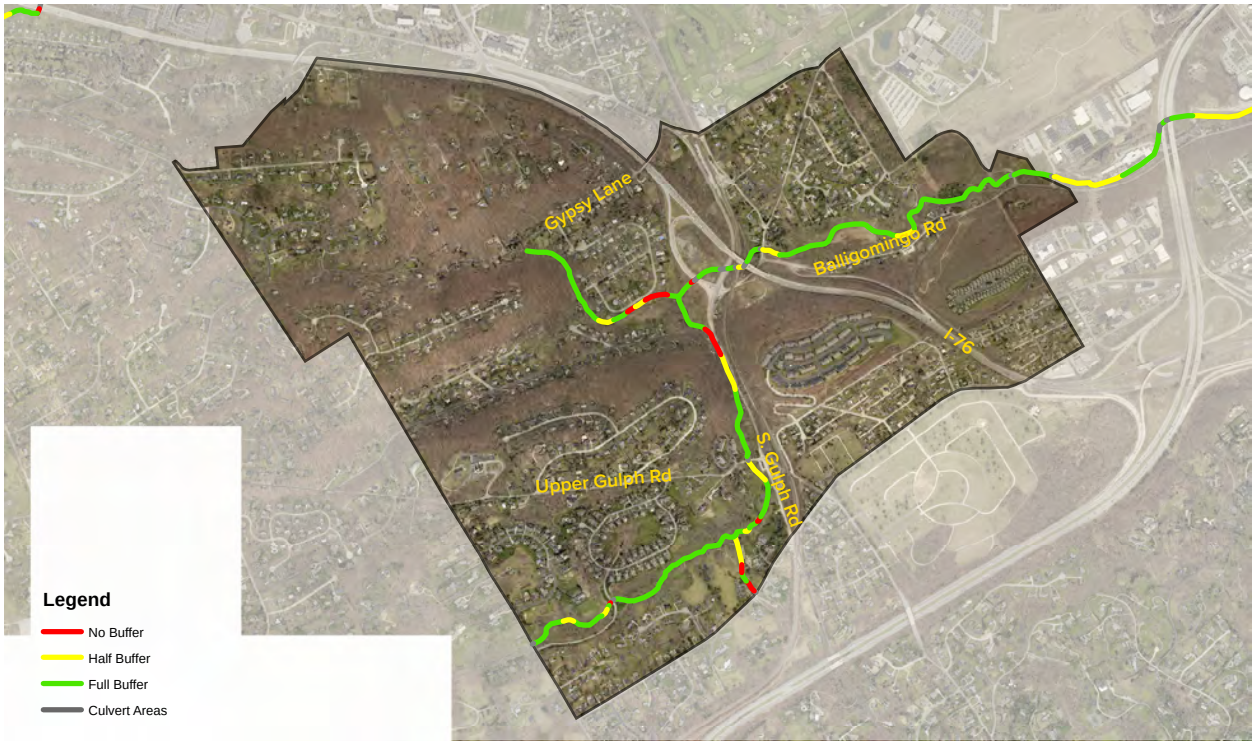
Proposed Improvements at S. Gulph Road and I-76 EB On-Off Ramp/Trinity Road

Proposed Improvements at S. Gulph Road and Matsonford Road

Environmental Quality

Similar to Planning Area 7, the topography of Planning Area 8 contains more steep slopes than other areas in the Township. This leads to an increase in runoff and flood related issues which have been cited in the community outreach process for the development of this plan. Identification of locations most impacted by flooding and those that could benefit from stormwater controls should be done in order to mitigate these issues. The Township should adopt a Riparian Corridor Protection Ordinance to minimize encroachment upon Gulph Creek, including proper stewardship of riparian buffers to maximize water quality benefits. Streams in this Planning Area are largely unimpaired and are generally well buffered in comparison to other Planning Areas in the Township. Restoration of streambanks and riparian buffers in streams most impacted most by erosion can maintain this water quality into the future. Review and implementation of the Township's Stormwater Study and MS4 Pollution Reduction Plan should continue as well in order to find the best methods for treating and reducing stormwater runoff.

Figure 72: Gypsy Hills/Gulph Mills Planning Area Riparian Buffers



Community Connections

Planning Area 8 should have safe and clear connections to the future location of the Chester Valley Trail. These connections could also connect parks to the trail system and provide linkages between parks and neighborhoods. A wayfinding signage system that directs users to the trail system, raising awareness and usage, while directing users to specific trail destinations, particularly the Chester Valley Trail, should be developed. Clear criteria and standards for the provision/extension of sidewalks should be developed and the Township should work with landowners to maintain the existing sidewalk network by replacing deteriorated segments at the time of resale/use and occupancy.

Neighborhood Character and Livability

There are several parks located in the Gypsy Hills/ Gulph Mills area. These parks should be improved as recommended in Parks and Recreation Master Plan, including streambank and riparian buffer restoration, walking trails, connections to the Chester Valley Trail and wildlife viewing opportunities.

This planning area has the highest tree canopy coverage in the Township of 68%. This coverage helps to significantly reduce urban heat island effects and should be maintained moving forward. An active tree planting program that returns front lawn trees to residential properties could be of assistance in maintaining this high percentage. The Township should aim to maintain existing residential densities and uses and develop zoning standards to preserve the existing scale and form of development in Planning Area 8.

Street Character at Executive Estates Park

Executive Estates Park Facilities

Street Character Longview Road

PLANNING AREA 9 - SWEDELAND

Planning Area 9, Swedeland, is located on the western edge of the Township. It is bordered by the PA Turnpike (I-276) on its northern edge, the Schuylkill River to its east, and the Norristown High Speed Line runs down its western edge. Major roads in this area include River Road, Flint Hill Road, and Swedeland Road. This planning area contains two residential neighborhoods, an industrial corridor and several industrial parks, and the Gulph Mills Golf Club. The parks in this planning area include Merril C. Young Park, Swedeland Basin, Kunda Park, and Swedeland Park.

White Avenue

Swedeland is home to 1,945 residents, approximately 7% of the township's population. Approximately 38% of this population falls between the ages of 30 and 44 years old. Planning Area 9 has the smallest average household size of any planning area at 2.3 persons per household. There are a total of 866 housing units, of which nearly 65% are owner-occupied.

The Swedeland Planning Area is entirely within the Schuylkill River Watershed. Streams in this area are not well buffered and many are piped underground. These streams are impaired, not attaining PA DEP's water quality standards, and are in need of mitigation by the Township. Some sections of this planning area have moderately steeps slopes but it is flat overall. Tree canopy coverage is moderately low in this area, likely due to the large industrial properties located here.

Figure 73: Swedeland Planning Area Water Quality

2040 RECOMMENDATIONS

Transportation and Transit Experience

There are several Capital Improvement Projects identified in the Transportation Plan for the Gulph Mills/Gypsy Hills area. Capital Improvement Projects include intersection and signal improvements at Church Road and Crooked Lane and at Church Road and Horizon Drive. Signal improvements are also proposed for the intersection of Swedeland, Holstein and Jones Roads. These improvements, if completed, would reduce the amount of time cars spend waiting at traffic lights in this area.

East Church Road is a major thoroughfare and serves as a business corridor for this area with many commercial and industrial uses along it. Future development of the Chester Valley Trail and potential development of the proposed NHSL Henderson Road Station, a Pennsylvania Turnpike interchange off Henderson Road will increase usage of East Church Road. The township should coordinate with the County, SEPTA, and DVRPC to develop a corridor improvement study for Church Road, including portions of Yerkes Road, Crooked Lane, Horizon Drive, and Flint Hill Road. The study should analyze the need for roadway improvements, including road widening and turn lanes, the development of access controls, limiting driveways via shared access and interconnected parking, and integrating multi-modal facilities such as sidewalks and bike lanes.

The Township should coordinate with SEPTA and DVRPC to implement the Safe Routes to Transit Plan for Hughes Park Station of the NHSL to improve walking and biking connections to the station. Coordination with GVFTMA should be done regarding the placement of bus shelters throughout the Swedeland area, including appropriate sidewalk connections to all bus stops/ shelters. In conjunction with the Henderson Road area, the Township should coordinate with SEPTA to determine bus ridership, including demand, destinations, and facilities, including a survey of the Swedeland area employers and residential areas.

SEPTA Bus Stop

Capital Improvement Project at Church Road and Crooked Lane

Capital Improvement Project at Church Road and Horizon Drive

Environmental Quality

Tree canopy coverage is low in the Swedeland area at 26% and should be increased throughout the area through implementation of green parking standards in existing developments, including the addition of stormwater controls to slow and treat runoff prior to entering local waterways. Standards should also be adopted for the greening of parking lots as part of new/redevelopment as well. The Township's Stormwater Study and MS4 Pollution Reduction Plan and the recommendations of the Township's Stormwater Study (conducted by Gannett Fleming) should continue to be reviewed and implemented. Much of this planning area developed prior to the requirement for stormwater controls in new development. Stormwater controls should be integrated to all development as redevelopment occurs, and opportunities for creating regional stormwater detention should be evaluated. Existing stormwater basins in the Swedeland area should be naturalized by removing low-flow channels and increasing vegetative cover.

Figure 74: Swedeland Planning Area Riparian Buffers

Stormwater Basin in Swedeland Area

Concrete Basin in Swedeland

Community Connections

Pedestrian connections, whether they are sidewalk or trail, should be enhanced in order to provide safe pathways for people moving in and out of the Swedeland area. Connections between the Hughes Park Station and Renaissance Business Park should be improved, including establishment of proper road crossings. Traffic calming measures through Hughes Park and Swedeland should be implemented to protect pedestrians and neighborhood quality, including the consideration of pedestrian oriented lighting (lower height and lower brightness) in denser neighborhoods and road crossings. Clear standards should be established for the provision of safe, pleasant, and direct connections between community sidewalks and parking areas, and building entrances in commercial, industrial, and offices uses. The Township should design and implement a wayfinding signage system that brands the Swedeland area and markets the numerous businesses within the industrial/ manufacturing portions of the study area and clearly establishes the limits of both the Hughes Park and Swedeland neighborhoods.

Neighborhood Character and Livability

The two primary residential centers of the Planning Area, Hughes Park and the Village of Swedeland, should be preserved. Redevelopment of the adjacent business park and light industrial areas should increase livability of these neighborhoods by maintaining and expanding buffers, creating greater pedestrian and biking opportunities, and monitoring truck traffic to minimize cut through. In particular, pathways should be established that provide direct pedestrian connections between Hughes Park and the Village of Swedeland, to increase access to transit opportunities, neighborhood interaction, and sense of community.

There are several parks located in the Swedeland area. These parks should be improved as recommended in the Parks and Recreation Master Plan, including park and equipment maintenance, access improvements, future development as part of the Schuylkill River Trail, and making sites ADA accessible. The Swedeland Basin, a 24.4 acre property along the Schuylkill River would require remediation and access improvements for development, but offers significant opportunities for a wildlife refuge, a site for fishing/hunting, and development of sports fields, as well as possible development of the future Schuylkill River West Trail.

This planning area has relatively moderate tree canopy coverage and benefits from a number of office and light industrial properties having mature vegetation. However, there are opportunities to increase tree canopy coverage (sustainability to reduce heat island effects) throughout the Planning Area through implementation of green parking standards in parking lots with limited vegetation and on residential properties in the Village of Swedeland.

The Gulph Mills Golf Course provides 178 acres of open space in a highly developed portion of the township. Even without general public access to the site, it contributes to the planning areas tree's canopy, provides opportunities for natural habitat, stormwater management, and groundwater recharge. The Township should work with the Club to review its land management policies and apply for certification as an Audubon Cooperative Sanctuary Golf Course. Managing the site consistent with the policies of the Sanctuary Program not only provides environmental benefits, but increases member satisfaction, work safety, and overall efficiency, making it less expensive to manage and more likely to maintain its finances in the long-term.

Neighborhood Character near Fire Company

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